

IEEE Communications Society  
**Publications Contents Digest**  
**June/2022**





Direct links to magazine and journal s and full paper pdfs via IEEE Xplore

ComSoc Vice President – Publications – Chengshan Xiao

Director – Journals – Octavia A. Dobre

Director – Magazines – Nei Kato

### Magazine Editors

EIC, **IEEE Communications Magazine** – Antonio Sanchez-Esquavillas  
AEIC, **IEEE Communications Magazine** – Alberto Perotti/Ravi Subrahmanyam  
EIC, **IEEE Network Magazine** – Chonggang Wang  
AEIC, **IEEE Network Magazine** – David Soldani  
EIC, **IEEE Wireless Communications Magazine** – Yi Qian  
AEIC, **IEEE Wireless Communications Magazine** – Nirwan Ansari  
EIC, **IEEE Communications Standards Magazine** – Zander Lei  
AEIC, **IEEE Communications Standards Magazine** – Carlos Cordeiro  
EIC, **IEEE Internet of Things Magazine** – Rath Vannithamby  
EIC, **China Communications** – Jianhua Lu

### Journal Editors

EIC, **IEEE Transactions on Communications** – Tolga M. Duman  
EIC, **IEEE Journal on Selected Areas In Communications (J-SAC)** – Petar Popovski  
EIC, **IEEE Communications Letters** – Marco Di Renzo  
EIC, **IEEE Communications Surveys & Tutorials** – Dusit Niyato  
EIC, **IEEE Transactions on Network & Service Management (TNSM)** – Hanan Lutfiyya  
EIC, **IEEE Wireless Communications Letters** – Kai Kit Wong  
EIC, **IEEE Transactions on Wireless Communications** – Junshan Zhang  
EIC, **IEEE Transactions on Mobile Communications** – Qian Zhang  
EIC, **IEEE/ACM Transactions on Networking** – Ness Shroff  
EIC, **IEEE/OSA Journal of Optical Communications & Networking (JOCN)** – Andrew Lord  
EIC, **IEEE/OSA Journal of Lightwave Technology** – Gabriella Bosco  
EIs, **IEEE/KICS Journal of Communications & Networks (JCN)** – Anthony Ephremides  
EIC, **IEEE Transactions on Multimedia** – Jiebo Luo  
EIC, **IEEE Transactions on Cloud Computing** – Yuanyuan Yang  
EIC, **IEEE Transactions on Cognitive Communications and Networking** – Ying-Chang Liang  
EIC, **IEEE Transactions on Molecular, Biological, and Multi-Scale Communications** – Chan-Byoung Chae  
EIC, **IEEE Transactions on Signal and Information Processing over Networks** – Pascal Frossard  
EIC, **IEEE Internet of Things Journal** – Honggang Wang  
EIC, **IEEE Transactions on Green Communications and Networking** – Zhisheng Niu  
EIC, **IEEE Journal on Biomedical Health Informatics** – Dimitrios I. Fotiadis  
EIC, **IEEE Transactions on Network Science and Engineering** – Jianwei Huang  
EIC, **IEEE Transactions on Smart Grid** – Claudio Cañizares  
EIC, **IEEE Networking Letters** – Christos Verikoukis  
EIC, **IEEE Open Journal of the Communications Society** – Octavia A. Dobre

**IEEE Communications Society**  
3 Park Avenue  
New York, NY 10016 USA  
212 705 8900

# IEEE COMMUNICATIONS MAGAZINE

June 2022, vol. 60, no. 6

## Front cover

Publication Year: 2022,Page(s):C1 - C1

## Cover 2

Publication Year: 2022,Page(s):C2 - C2

## Table of Contents

Publication Year: 2022,Page(s):1 - 2

## REMCOM

Publication Year: 2022,Page(s):3 - 3

## The President's Page

ComSoc Standards Development, and Standardization Programs Development

Xuemin Sherman Shen;Edward G. Tiedemann;Nada Golmie

Publication Year: 2022,Page(s):4 - 4

HTML

## Society News

ComSoc Board of Governors 2022 Election

Publication Year: 2022,Page(s):5 - 5

## In Memoriam: Desmond P. (Des) Taylor

Doug Zuckerman;Desmond P. Taylor

Publication Year: 2022,Page(s):6 - 6

HTML

## Call for Papers

Publication Year: 2022,Page(s):7 - 7

## Fellows

An Analysis of the Proposed Changes to the IEEE Fellow Elevation Process (Invited Paper)

Stefano Galli

Publication Year: 2022,Page(s):8 - 14

HTML

## Call for Papers

Publication Year: 2022,Page(s):15 - 15

## Conference Calendar

Updated on the Communications Society's Web Site

Publication Year: 2022,Page(s):16 - 16

## Global Communications Newsletter

Stefano Bregni;Ana Garcia Armada;Sattar B. Sadkhan;Aloknath De

Publication Year: 2022,Page(s):17 - 20

## Call for Papers

Publication Year: 2022,Page(s):21 - 21

## Low Earth Orbit Satellites to Enable Access Equality

Guest Editorial: Low Earth Orbit Satellites to Enable Access Equality: Part II

Gunes Karabulut Kurt;Ángeles Vázquez-Castro;Ejder Bastug

Publication Year: 2022,Page(s):22 - 22

HTML

## Call for Papers

Publication Year: 2022,Page(s):23 - 23

## The Digital Divide in Canada and the Role of LEO Satellites in Bridging the Gap

Tuheen Ahmmed;Afsoon Alidadi;Zichao Zhang;Aizaz U. Chaudhry;Halim Yanikomeroglu

Publication Year: 2022,Page(s):24 - 30

HTML

## Call for Papers

Publication Year: 2022,Page(s):31 - 31

## Situational Awareness for Autonomous Ships in the Arctic: mMTC Direct-to-Satellite Connectivity

Muhammad Asad Ullah;Anastasia Yastrebova;Konstantin Mikhaylov;Marko Höyhtyä;Hirley Alves

Publication Year: 2022,Page(s):32 - 38

HTML

## Call for Papers

Publication Year: 2022,Page(s):39 - 39

## Is LEO-Based Positioning with Mega-Constellations the Answer for Future Equal Access Localization?

Ruben Morales Ferre;Elena Simona Lohan;Heidi Kuusniemi;Jaana Praks;Sanna Kaasalainen;Christina Pinell;Mahmoud Elsanhoury

Publication Year: 2022,Page(s):40 - 46

HTML

## Call for Papers

Publication Year: 2022,Page(s):47 - 47

## Internet of Things

Series Editorial: Internet of Things

Sergio Fortes;Israat Haque;Prasant Misra;Luca Rose

Publication Year: 2022,Page(s):48 - 48

HTML

## Call for Papers

Publication Year: 2022,Page(s):49 - 49

## An Optical Implant for Biotelemetry: Design, In Vivo Verification, and Challenges

Ilsoo Sohn;Muhammad Fithratur Rahman;Yong Hun Jang;Sang Hyun Lee

Publication Year: 2022,Page(s):50 - 56

HTML

## Call for Papers

Publication Year: 2022,Page(s):57 - 57

## DECT-2020 New Radio: The Next Step toward 5G Massive Machine-Type Communications

Roman Kovalchukov;Dmitri Moltchanov;Juho Pirskanen;Joonas Sæe;Jussi Numminen;Yevgeni Koucheryavy;Mikko Valkama

Publication Year: 2022,Page(s):58 - 64

HTML

## Call for Papers

Publication Year: 2022,Page(s):65 - 65

A Blockchain-Enabled Trusted Identifier Co-Governance  
Architecture for the Industrial Internet of Things  
Ru Huo;Shiqin Zeng;Yuhong Di;Xiangfeng Cheng;Tao Huang;F.  
Richard Yu;Yunjie Liu  
Publication Year: 2022,Page(s):66 - 72  
HTML

Call for Papers  
Publication Year: 2022,Page(s):73 - 73

Accepted from Open Call  
Unlock Self-Sustainability of Reconfigurable Intelligent Surface in  
Wireless Powered IoT Networks  
Zheng Chu;Jie Zhong;Pei Xiao;De Mi;Wanming Hao;Jia Shi;Lie-  
Liang Yang  
Publication Year: 2022,Page(s):74 - 80  
HTML

Cycle-Based Time-Sensitive and Deterministic Networks:  
Architecture, Challenges, and Open Issues  
Yudong Huang;Shuo Wang;Tao Huang;Yunjie Liu  
Publication Year: 2022,Page(s):81 - 87  
HTML

Advertisers Index  
Publication Year: 2022,Page(s):88 - 88

Cover 3  
Publication Year: 2022,Page(s):C3 - C3

Cover 4  
Publication Year: 2022,Page(s):C4 - C4

# IEEE WIRELESS COMMUNICATIONS

April 2022, Vol. 29, No. 2

## Front Cover

Publication Year: 2022,Page(s):C1 - C1

## Cover 2

Publication Year: 2022,Page(s):C2 - C2

## Table of Contents

Publication Year: 2022,Page(s):1 - 1

## Message from the Editor-in-Chief

Deep Learning for Secure Wireless Communications in Cyber Physical Systems

Yi Qian

Publication Year: 2022,Page(s):2 - 3

HTML

## Call for Papers

Publication Year: 2022,Page(s):4 - 4

## ComSoc Publications

Publication Year: 2022,Page(s):5 - 5

## Industry Perspectives

Transitioning to 6G: Part 2-Systems and Network Technology Areas

Sharad Sambhwani;Arjun Bharadwaj;Christian Drewes;Kenza Hamidouche;Ayman Naguib;Dirk Nickisch;Sabine Roessel;Matthias Sauer;Yannis Schoinas;Tarik Tabet;Sree Vallath;Yu-Ting Yu

Publication Year: 2022,Page(s):6 - 8

HTML

## Spectrum Policy and Regulatory Issues

The Impact of Receivers on Spectrum Management

Michael J. Marcus

Publication Year: 2022,Page(s):9 - 10

HTML

## Book Reviews

Mobile Edge Computing, Springer International Publishing, 2022:

ISBN: 978-3-030-83944-4, 113 Pages

Bo Rong

Publication Year: 2022,Page(s):11 - 11

## Scanning the Literature

Publication Year: 2022,Page(s):12 - 12

## ComSoc Training

Publication Year: 2022,Page(s):13 - 13

Deep Learning Driven Secure Communication for Cyber Physical Systems

Guest Editorial: Deep Learning Driven Secure Communication for Cyber Physical Systems

Wei Wei;Ching-Hsien Hsu;Vincenzo Piuri;Ammar Rayes

Publication Year: 2022,Page(s):14 - 15

HTML

Deep Learning Powered Adversarial Sample Attack Approach for Security Detection of DGA Domain Name in Cyber Physical Systems

Xiao Shen;Xinming Zhang;Yuxin Chen

Publication Year: 2022,Page(s):16 - 21

HTML

Deep Federated Learning Enhanced Secure POI Microservices for Cyber-Physical Systems

Zhiwei Guo;Keping Yu;Zhihan Lv;Kim-Kwang Raymond Choo;Peng Shi;Joel J. P. C. Rodrigues

Publication Year: 2022,Page(s):22 - 29

HTML

An Ultra-Lightweight Data-Aggregation Scheme with Deep Learning Security for Smart Grid

Prosanta Gope;Pradip Kumar Sharma;Biplab Sikdar

Publication Year: 2022,Page(s):30 - 36

HTML

## Call for Papers

Publication Year: 2022,Page(s):37 - 37

Attack Detection and Data Generation for Wireless Cyber-Physical Systems Based on Self-Training Powered Generative Adversarial Networks

Junjun Huang;Dongdong Hu;Zancheng Ding;Xujia Wu

Publication Year: 2022,Page(s):38 - 43

HTML

Distributed Q-Learning-Enabled Multi-Dimensional Spectrum

Sharing Security Scheme for 6G Wireless Communication

Pan Ding;Xiaojuan Liu;Zhenguo Wang;Ke Zhang;Zequan

Huang;Yong Chen

Publication Year: 2022,Page(s):44 - 50

HTML

## ComSoc Conferences

Publication Year: 2022,Page(s):51 - 51

A Deep Learning Assisted Software Defined Security Architecture for 6G Wireless Networks: IIoT Perspective

Md. Abdur Rahman;M. Shamim Hossain

Publication Year: 2022,Page(s):52 - 59

HTML

Deep-Learning-Based Mobile Group Intelligence Perception Mechanism Oriented to User Privacy and Data Security in the Internet of Things

Hexuan Hu;Lizhi Wang;Qiang Hu;Yongxi Bu;Ye Zhang

Publication Year: 2022,Page(s):60 - 67

HTML

Federated Learning Driven Secure Internet of Medical Things

Junqiao Fan;Xuehe Wang;Yanxiang Guo;Xiping Hu;Bin Hu

Publication Year: 2022,Page(s):68 - 75

HTML

Toward Industrial Private AI: A Two-Tier Framework for Data and Model Security

Sunder Ali Khowaja;Kapal Dev;Nawab Muhammad Faseeh Qureshi;Parus Khuwaja;Luca Foschini

Publication Year: 2022,Page(s):76 - 83  
HTML

Blockchain and Federated Deep Reinforcement Learning Based Secure Cloud-Edge-End Collaboration in Power IoT

Sunxuan Zhang;Zhao Wang;Zhenyu Zhou;Yang Wang;Hui Zhang;Geng Zhang;Huixia Ding;Shahid Mumtaz;Mohsen Guizani

Publication Year: 2022,Page(s):84 - 91  
HTML

Enhanced Fronthaul for 5G and Beyond

Guest Editorial: Enhanced Fronthaul for 5G and Beyond  
Yuanqiu Luo;Philippe Chanclou;Knud Erik Skouby;Hong Zhao;Kota Asaka

Publication Year: 2022,Page(s):92 - 93  
HTML

WDM-PON for 5G Wireless Fronthaul

Frank J. Effenberger;Dezhi Zhang

Publication Year: 2022,Page(s):94 - 99  
HTML

Point-to-Multipoint Coherent Architecture with Joint Resource Allocation for B5G/6G Fronthaul

Yunyun Fan;Mengfan Fu;Hexun Jiang;Xiaomin Liu;Qiaoya Liu;Yicheng Xu;Lillin Yi;Weisheng Hu;Qunbi Zhuge

Publication Year: 2022,Page(s):100 - 106  
HTML

IEEE Globecom

Publication Year: 2022,Page(s):107 - 107

Wireless Fronthaul for 5G and Future Radio Access Networks: Challenges and Enabling Technologies

Meilong Jiang;Juergen Cezanne;Ashwin Sampath;Ori Shental;Qiang Wu;Ozge Koymen;Ahmed Bedewy;Junyi Li

Publication Year: 2022,Page(s):108 - 114  
HTML

Call for Papers

Publication Year: 2022,Page(s):115 - 115

The Security Aspect of 5G Fronthaul

Marcus Wong;Anand Prasad;Anthony C. K. Soong

Publication Year: 2022,Page(s):116 - 122  
HTML

ComSoc Open Journal

Publication Year: 2022,Page(s):123 - 123

Accepted from Open Call

Active Computing Toward 5G Internet of Things  
Chunpeng Liu;Wei-Xiao Meng;Cheng Li;Maode Ma

Publication Year: 2022,Page(s):124 - 130  
HTML

IEEE World Forum

Publication Year: 2022,Page(s):131 - 131

Optimization of Receivers' Field of Views in Multi-User VLC Networks: A Bio-Inspired Approach

Mahmoud Wafik Eltokhey;Mohammad Ali Khalighi;Zabih Ghassemlooy

Publication Year: 2022,Page(s):132 - 139

HTML

Kubeedge Wireless for Integrated Communication and Computing Services Everywhere

Tingting Yang;Jiahong Ning;Dapeng Lan;Jiawei Zhang;Yang Yang;Xudong Wang;Amir Taherkordi

Publication Year: 2022,Page(s):140 - 145  
HTML

Intrinsic Security: A Robust Framework for Cloud-Native Network Slicing via a Proactive Defense Paradigm

Qiang Wu;Ran Wang;Xincheng Yan;Chunming Wu;Rongxing Lu

Publication Year: 2022,Page(s):146 - 153  
HTML

Physical Layer Anonymous Precoding: The Path to Privacy-Preserving Communications

Zhongxiang Wei;Christos Masouros;H. Vincent Poor;Athina P. Petropulu;Lajos Hanzo

Publication Year: 2022,Page(s):154 - 160  
HTML

ComSoc Training

Publication Year: 2022,Page(s):161 - 161

Improving Learning Efficiency for Wireless Resource Allocation with Symmetric Prior

Chengjian Sun;Jiajun Wu;Chenyang Yang

Publication Year: 2022,Page(s):162 - 168  
HTML

Reconfigurable Intelligent Surface-Aided Multi-User Networks: Interplay Between NOMA and RIS

Yuanwei Liu;Xidong Mu;Xiao Liu;Marco Di Renzo;Zhiguo Ding;Robert Schober

Publication Year: 2022,Page(s):169 - 176  
HTML

Deep Learning Aided Routing for Space-Air-Ground Integrated Networks Relying on Real Satellite, Flight, and Shipping Data

Dong Liu;Jiankang Zhang;Jingjing Cui;Soon-Xin Ng;Robert G. Maunder;Lajos Hanzo

Publication Year: 2022,Page(s):177 - 184  
HTML

From Resource Auction to Service Auction: An Auction Paradigm Shift in Wireless Networks

Xianhao Chen;Yiqin Deng;Guangyu Zhu;Danxin Wang;Yuguang Fang

Publication Year: 2022,Page(s):185 - 191  
HTML

Actions at the Edge: Jointly Optimizing the Resources in Multi-Access Edge Computing

Yiqin Deng;Xianhao Chen;Guangyu Zhu;Yuguang Fang;Zhigang Chen;Xiaoheng Deng

Publication Year: 2022,Page(s):192 - 198  
HTML

Cover 3

Publication Year: 2022,Page(s):C3 - C3

Cover 4

Publication Year: 2022,Page(s):C4 - C4



# China 中国通信 Communications

June 2022 Vol.19 No. 6

**Front cover**

Publication Year: 2022,Page(s):c1 - c1

**Contents**

Publication Year: 2022,Page(s):i - ii

**Feature Topic: Recent Advances in Mobile Communication Network Security****Guest editorial: Recent advances in mobile communication network security**

Kaiping Xue;Jianqing Liu;Liehuang Zhu;David S. L. Wei;Rongxing Lu

Publication Year: 2022,Page(s):iii - v

**A novel pipelining encryption hardware system with high throughput and high integration for 5G**

Yuntao Liu;Zesheng Shen;Shuo Fang;Yun Wang

Publication Year: 2022,Page(s):1 - 10

**Differential privacy preserving dynamic data release scheme based on Jensen-Shannon divergence**

Ying Cai;Yu Zhang;Jingjing Qu;Wenjin Li

Publication Year: 2022,Page(s):11 - 21

**Achieving fine-grained and flexible access control on blockchain-based data sharing for the Internet of Things**

Ruimiao Wang;Xiaodong Wang;Wenti Yang;Shuai Yuan;Zhitao Guan

Publication Year: 2022,Page(s):22 - 34

**Fine-grained and fair identity authentication scheme for mobile networks based on blockchain**

Mengjuan Zhai;Yanli Ren;Guorui Feng;Xinpeng Zhang

Publication Year: 2022,Page(s):35 - 49

**Proximal policy optimization-based committee selection algorithm in blockchain-enabled mobile edge computing systems**

Wenjun Wu;Dehao Sun;Kaiqi Jin;Yang Sun;Pengbo Si

Publication Year: 2022,Page(s):50 - 65

**BC-AKA: Blockchain based asymmetric authentication and key agreement protocol for distributed 5G core network**

Zhen Gao;Dongbin Zhang;Jiuzhi Zhang;Zhao Liu;Haoming Liu;Ming Zhao

Publication Year: 2022,Page(s):66 - 76

**PUMTD: Privacy-preserving user-profile matching protocol in social networks**

Jianhong Zhang;Haoting Han;Hongwei Su;Zhengtao Jiang;Changgen Peng

Publication Year: 2022,Page(s):77 - 90

**An efficient and privacy-preserving data aggregation scheme supporting arbitrary statistical functions in IoT**

Haihui Liu;Jianwei Chen;Liwei Lin;Ayong Ye;Chuan Huang

Publication Year: 2022,Page(s):91 - 104

**6G Towards 2030: From Key Technology to Network Architecture****A predictive 6G network with environment sensing enhancement:****From radio wave propagation perspective**

Gaofeng Nie;Jianhua Zhang;Yuxiang Zhang;Li Yu;Zhen

Zhang;Yutong Sun;Lei Tian;Qixing Wang;Liang Xia

Publication Year: 2022,Page(s):105 - 122

**6G mobile network requirements and technical feasibility study**

Yuhong Huang;Jing Jin;Mengting Lou;Jing Dong;Dan Wu;Liang

Xia;Sen Wang;Xiaozhou Zhang

Publication Year: 2022,Page(s):123 - 136

**Cognitive intelligence based 6G distributed network architecture**

Xiaodong Duan;Tao Sun;Chao Liu;Xiao Ma;Zheng Hu;Lu

Lu;Chunhong Zhang;Benhui Zhuang;Weiyuan Li;Shangguang Wang

Publication Year: 2022,Page(s):137 - 153

**Signal clipping at transmitter and receiver of O-OFDM for VLC under optical power constraint**

Liang Xia;Xiaoqian Wang;Zhiwen Sun;Zhitian Cheng;Jing Jin;Yifei

Yuan;Guangyi Liu;Tao Jiang;Yuhong Huang

Publication Year: 2022,Page(s):154 - 168

**Time efficient joint optimization federated learning over wireless communication networks**

Junshuai Sun;Yingying Wang;Xin Sun;Na Li;Gaofeng Nie

Publication Year: 2022,Page(s):169 - 178

**User-level scheduling and resource allocation for multi-beam satellite systems with full frequency reuse**

Tao Leng;Yanan Wang;Dongwei Hu;Gaofeng Cui;Weidong Wang

Publication Year: 2022,Page(s):179 - 192

**Emerging Technologies & Applications****Codebook design and beam training for extremely large-scale RIS:****Far-field or near-field?**

Xiuhong Wei;Linglong Dai;Yajun Zhao;Guanghui Yu;Xiangyang Duan

Publication Year: 2022,Page(s):193 - 204

**Joint access point selection and resource allocation in MEC-assisted network: A reinforcement learning based approach**

Zexu Li;Chunjing Hu;Wenbo Wang;Yong Li;Guiming Wei

Publication Year: 2022,Page(s):205 - 218

Hybrid Marine predators optimization and improved particle swarm optimization-based optimal cluster routing in wireless sensor networks (WSNs)

Balamurugan;Sengathir Janakiraman;M. Deva Priya;A. Christy Jeba Malar

Publication Year: 2022,Page(s):219 - 247

Minimizing outage probability driven wireless backhaul scheme in heterogeneous networks

Zhenxing Li;Rui Xie;Kai Luo;Tao Jiang

Publication Year: 2022,Page(s):248 - 262

Analyzing and de-anonymizing Bitcoin networks: An IP matching method with clustering and heuristics

Teng Long;Jiasheng Xu;Luoyi Fu;Xinbing Wang

Publication Year: 2022,Page(s):263 - 278

Application of brain-computer-interface in awareness detection using machine learning methods

Kaiqiang Feng;Weilong Lin;Feng Wu;Chengxin Pang;Liang

Song;Yijia Wu;Rong Cao;Huiliang Shang;Xinhua Zeng

Publication Year: 2022,Page(s):279 - 291

Back cover

Publication Year: 2022,Page(s):c4 - c4



# IEEE TRANSACTIONS ON COMMUNICATIONS

A PUBLICATION OF THE IEEE COMMUNICATIONS SOCIETY



JUNE 2022

VOLUME 70

NUMBER 6

IECMBT

(ISSN 0090-6778)

## Table of Contents

Publication Year: 2022,Page(s):C1 - 3596

[HTML](#)

## IEEE Communications Society

Publication Year: 2022,Page(s):C2 - C2

[HTML](#)

## Hierarchical Coded Matrix Multiplication in Heterogeneous Multihop Networks

Hongtao Zhu;Li Chen;Nan Zhao;Yunfei Chen;Weidong Wang;F. Richard Yu

Publication Year: 2022,Page(s):3597 - 3612

[HTML](#)

## EBP-GEXIT Charts for M-Ary AWGN Channel for Generalized LDPC and Turbo Codes

Arti Yardi;Tarik Benaddi;Charly Poulliat;Iryna Andriyanova

Publication Year: 2022,Page(s):3613 - 3626

[HTML](#)

## Multi-Antenna Coded Caching From a Placement Delivery Array for Shared Caches

Elizabeth Peter;B. Sundar Rajan

Publication Year: 2022,Page(s):3627 - 3640

[HTML](#)

## Rook Coding for Batch Matrix Multiplication

Pedro Soto;Xiaodi Fan;Angel Saldivia;Jun Li

Publication Year: 2022,Page(s):3641 - 3654

[HTML](#)

## Keep the Bursts and Ditch the Interleavers

Wei An;Muriel Médard;Ken R. Duffy

Publication Year: 2022,Page(s):3655 - 3667

[HTML](#)

## Buffer State Based Relay Selection for Half-Duplex Buffer-Aided Serial Relaying Systems

Sawsan El-Zahr;Chadi Abou-Rjeily

Publication Year: 2022,Page(s):3668 - 3681

[HTML](#)

## Modeling and Optimization of OAM-MIMO Communication Systems With Unaligned Antennas

Xusheng Xiong;Hanqiong Lou;Xiaohu Ge

Publication Year: 2022,Page(s):3682 - 3694

[HTML](#)

## Two-Dimensional Golay Complementary Array Pairs/Sets With Bounded Row and Column Sequence PAPRs

Cheng-Yu Pai;Chao-Yu Chen

Publication Year: 2022,Page(s):3695 - 3707

[HTML](#)

## Sparse and Low-Rank Optimization for Pliable Index Coding via Alternating Projection

Min Fu;Tao Jiang;Hayoung Choi;Yong Zhou;Yuanming Shi

Publication Year: 2022,Page(s):3708 - 3724

[HTML](#)

## Physical Layer Performance Modeling of Modern Multicarrier Modulation Techniques

Waqar Anwar;Atul Kumar;Norman Franchi;Gerhard Fettweis

Publication Year: 2022,Page(s):3725 - 3741

[HTML](#)

## Joint Energy and Correlation Detection Assisted Non-Coherent OFDM-DCSK System for Underwater Acoustic Communications

Xiangming Cai;Weikai Xu;Lin Wang;Georges Kaddoum

Publication Year: 2022,Page(s):3742 - 3759

[HTML](#)

## Multi-carrier DCSK With Hybrid Index Modulation: A New Perspective on Frequency-Index-Aided Chaotic Communication

Yiwei Tao;Yi Fang;Huan Ma;Shahid Mumtaz;Mohsen Guizani

Publication Year: 2022,Page(s):3760 - 3773

[HTML](#)

## Joint User Association and Edge Caching in Multi-Antenna Small-Cell Networks

Xiaolong Yang;Zesong Fei;Bin Li;Jianchao Zheng;Jing Guo

Publication Year: 2022,Page(s):3774 - 3787

[HTML](#)

## Capacity per Unit Cost-Achieving Input Distribution of Rated-Inverse Gaussian Biological Neuron

Mohammad Nasirae;Hussain Montazery Kordy;Javad Kazemitabar

Publication Year: 2022,Page(s):3788 - 3803

[HTML](#)

## Waveform Learning for Next-Generation Wireless Communication Systems

Fayçal Ait Aoudia;Jakob Hoydis

Publication Year: 2022,Page(s):3804 - 3817

[HTML](#)

## Neural Networks Based Beam Codebooks: Learning mmWave Massive MIMO Beams That Adapt to Deployment and Hardware

Muhammad Alrabeiah;Yu Zhang;Ahmed Alkhateeb

Publication Year: 2022,Page(s):3818 - 3833

[HTML](#)

## Resource Scheduling Based on Deep Reinforcement Learning in UAV Assisted Emergency Communication Networks

Chaowei Wang;Danhao Deng;Lexi Xu;Weidong Wang

Publication Year: 2022,Page(s):3834 - 3848

[HTML](#)

Deep Reinforcement Learning-Based Optimization for IRS-Assisted Cognitive Radio Systems  
Canwei Zhong;Miao Cui;Guangchi Zhang;Qingqing Wu;Xinrong Guan;Xiaoli Chu;H. Vincent Poor  
Publication Year: 2022,Page(s):3849 - 3864  
HTML

Diffraction RSS Based Multinetwork Aided 3D Positioning for Distributed Massive MIMO Systems  
Xiaoge Wu;Ming Jiang  
Publication Year: 2022,Page(s):3865 - 3878  
HTML

Spatially-Correlated IRS-Aided Multiuser FD mMIMO Systems: Analysis and Optimization  
Nitish Vikas Deshpande;Sauradeep Dey;Dheeraj Naidu Amudala;Rohit Budhiraja  
Publication Year: 2022,Page(s):3879 - 3896  
HTML

IRS-Assisted Multicell Multiband Systems: Practical Reflection Model and Joint Beamforming Design  
Wenhao Cai;Rang Liu;Ming Li;Yang Liu;Qingqing Wu;Qian Liu  
Publication Year: 2022,Page(s):3897 - 3911  
HTML

On the Performance of Laser-Powered UAV-Assisted SWIPT Enabled Multiuser Communication Network With Hybrid NOMA  
Sandeep Kumar Singh;Kamal Agrawal;Keshav Singh;Ankur Bansal;Chih-Peng Li;Zhiguo Ding  
Publication Year: 2022,Page(s):3912 - 3929  
Cited by: Papers (1)  
HTML

Joint Optimization of Preamble Selection and Access Barring for Random Access in MTC With General Device Activities  
Wang Liu;Ying Cui;Feng Yang;Lianghui Ding;Jun Sun  
Publication Year: 2022,Page(s):3930 - 3946  
HTML

Grant Free Age-Optimal Random Access Protocol for Satellite-Based Internet of Things  
Tao Yang;Jian Jiao;Shaohua Wu;Rongxing Lu;Qinyu Zhang  
Publication Year: 2022,Page(s):3947 - 3961  
HTML

A Secure Energy Efficient Scheme for Cooperative IoT Networks  
Ala Gouisse;Khalid Abualsaud;Elias Yaacoub;Tamer Khattab;Mohsen Guizani  
Publication Year: 2022,Page(s):3962 - 3976  
HTML

Acoustic-WiFi: Acoustic Support for Wi-Fi Networks in Smart Devices  
Tamer Nadeem;Mostafa Uddin  
Publication Year: 2022,Page(s):3977 - 3994  
HTML

A Tb/s Indoor MIMO Optical Wireless Backhaul System Using VCSEL Arrays  
Hossein Kazemi;Elham Sarbazi;Mohammad Dehghani Soltani;Taisir E. H. El-Gorashi;Jaafar M. H. Elmirghani;Richard V. Penty;Ian H. White;Majid Safari;Harald Haas  
Publication Year: 2022,Page(s):3995 - 4012  
HTML

Eigen-Spectrum Estimation and Source Detection in a Massive Sensor Array Based on Quantum Assisted Hamiltonian Simulation Framework  
Mostafizur Rahman Laskar;Subhadeep Mondal;Amit Kumar Dutta  
Publication Year: 2022,Page(s):4013 - 4025  
HTML

Quantum Anonymous Private Information Retrieval for Distributed Networks  
Awais Khan;Uman Khalid;Junaid ur Rehman;Hyundong Shin  
Publication Year: 2022,Page(s):4026 - 4037  
HTML

Physical Layer Security in Large-Scale Random Multiple Access Wireless Sensor Networks: A Stochastic Geometry Approach  
Tong-Xing Zheng;Xin Chen;Chao Wang;Kai-Kit Wong;Jinhong Yuan  
Publication Year: 2022,Page(s):4038 - 4051  
HTML

Conditional Disclosure of Secrets: A Noise and Signal Alignment Approach  
Zhou Li;Hua Sun  
Publication Year: 2022,Page(s):4052 - 4062  
HTML

MMV-Based Sequential AoA and AoD Estimation for Millimeter Wave MIMO Channels  
Wei Zhang;Miaomiao Dong;Taejoon Kim  
Publication Year: 2022,Page(s):4063 - 4077  
HTML

Channel Estimation for IRS-Assisted Millimeter-Wave MIMO Systems: Sparsity-Inspired Approaches  
Tian Lin;Xianghao Yu;Yu Zhu;Robert Schober  
Publication Year: 2022,Page(s):4078 - 4092  
HTML

Multiple Angles of Arrival Estimation Using Broadband Signals and a Nonuniform Planar Array  
Chao Liu;Bensheng Yang;Peize Zhang;Haiming Wang;Cheng-Xiang Wang;Xiaohu You  
Publication Year: 2022,Page(s):4093 - 4106  
HTML

Unsupervised Learning Discriminative MIG Detectors in Nonhomogeneous Clutter  
Xiaoqiang Hua;Yusuke Ono;Linyu Peng;Yuting Xu  
Publication Year: 2022,Page(s):4107 - 4120  
HTML

Hybrid Precoding for Mixture Use of Phase Shifters and Switches in mmWave Massive MIMO  
Chenhao Qi;Qiang Liu;Xianghao Yu;Geoffrey Ye Li  
Publication Year: 2022,Page(s):4121 - 4133  
HTML

Transceiver Optimization for Two-Hop AF MIMO Relay Systems With DFE Receiver and Direct Link  
Qiao Su;Yue Rong  
Publication Year: 2022,Page(s):4134 - 4145  
HTML

Joint Precoder, Reflection Coefficients, and Equalizer Design for IRS-Assisted MIMO Systems  
Wen Zhou;Junjuan Xia;Chunguo Li;Lisheng Fan;Arumugam Nallanathan  
Publication Year: 2022,Page(s):4146 - 4161  
HTML

IRS-Aided Energy-Efficient Secure WBAN Transmission Based on Deep Reinforcement Learning  
Liang Xiao;Siyuan Hong;Shiyu Xu;Helin Yang;Xiangyang Ji  
Publication Year: 2022,Page(s):4162 - 4174  
HTML

Energy Efficiency of Angle of Arrival Estimation in Massive MIMO Systems  
Masoud Arash;Hamed Mirghasemi;Ivan Stupia;Luc Vandendorpe  
Publication Year: 2022,Page(s):4175 - 4188  
HTML

Energy-Efficient Hybrid Beamforming for Multilayer RIS-Assisted Secure Integrated Terrestrial-Aerial Networks  
Yifu Sun;Kang An;Yonggang Zhu;Gan Zheng;Kai-Kit Wong;Symeon Chatzinotas;Derrick Wing Kwan Ng;Dongfang Guan  
Publication Year: 2022,Page(s):4189 - 4210  
HTML

Intelligent Reflecting Surface Based Backscatter Communication for Data Offloading  
Sai Xu;Yanan Du;Jiajia Liu;Jingtao Li  
Publication Year: 2022,Page(s):4211 - 4221  
HTML

Fair and Energy-Efficient Coverage Optimization for UAV Placement Problem in the Cellular Network  
Yaxi Liu;Wei Huangfu;Huan Zhou;Haijun Zhang;Jiangchuan Liu;Keping Long  
Publication Year: 2022,Page(s):4222 - 4235  
HTML

Sparse Bayesian Learning Aided Estimation of Doubly-Selective MIMO Channels for Filter Bank Multicarrier Systems  
Prem Singh;Suraj Srivastava;Amrita Mishra;Aditya K. Jagannatham;Lajos Hanzo  
Publication Year: 2022,Page(s):4236 - 4249  
HTML

Terahertz Band Communication: An Old Problem Revisited and Research Directions for the Next Decade  
Ian F. Akyildiz;Chong Han;Zhifeng Hu;Shuai Nie;Josep Miquel Jornet  
Publication Year: 2022,Page(s):4250 - 4285  
HTML

Adaptive Opportunistic Spatial Modulation for Boosting Transmit Diversity  
Yuanyuan He;Jamie S. Evans  
Publication Year: 2022,Page(s):4286 - 4298  
HTML

IEEE Communications Society  
Publication Year: 2022,Page(s):C3 - C3  
HTML

Blank Page  
Publication Year: 2022,Page(s):C4 - C4  
HTML

# IEEE JOURNAL ON SELECTED AREAS IN COMMUNICATIONS

A PUBLICATION OF THE IEEE COMMUNICATIONS SOCIETY



JUNE 2022

VOLUME 40

NUMBER 6

ISACEM

(ISSN 0733-8716)

Table of Contents

Publication Year: 2022,Page(s):C1 - C4

[HTML](#)

IEEE Journal on Selected Areas in Communications

Publication Year: 2022,Page(s):C2 - C2

[HTML](#)

Guest Editorial Special Issue on Integrated Sensing and Communication—Part I

Fan Liu;Christos Masouros;Jie Xu;Tony Xiao Han;Aboulnasr Hassanien;Yonina C. Eldar;Stefano Buzzi

Publication Year: 2022,Page(s):1723 - 1727

[HTML](#)

Integrated Sensing and Communications: Toward Dual-Functional Wireless Networks for 6G and Beyond

Fan Liu;Yuanhao Cui;Christos Masouros;Jie Xu;Tony Xiao Han;Yonina C. Eldar;Stefano Buzzi

Publication Year: 2022,Page(s):1728 - 1767

[HTML](#)

On the Degrees of Freedom Region for Simultaneous Imaging & Uplink Communication

Nishant Mehrotra;Ashutosh Sabharwal

Publication Year: 2022,Page(s):1768 - 1779

Cited by: Papers (2)

[HTML](#)

Active Sensing for Communications by Learning

Foad Sohrabi;Tao Jiang;Wei Cui;Wei Yu

Publication Year: 2022,Page(s):1780 - 1794

Cited by: Papers (1)

[HTML](#)

Generalized Transceiver Beamforming for DFRC With MIMO Radar and MU-MIMO Communication

Li Chen;Zhiqin Wang;Ying Du;Yunfei Chen;F. Richard Yu

Publication Year: 2022,Page(s):1795 - 1808

Cited by: Papers (1)

[HTML](#)

Low Ambiguity Zone: Theoretical Bounds and Doppler-Resilient Sequence Design in Integrated Sensing and Communication Systems

Zhifan Ye;Zhengchun Zhou;Pingzhi Fan;Zilong Liu;Xianfu Lei;Xiaohu Tang

Publication Year: 2022,Page(s):1809 - 1822

Cited by: Papers (1)

[HTML](#)

Waveform Design and Performance Analysis for Full-Duplex Integrated Sensing and Communication

Zhiqiang Xiao;Yong Zeng

Publication Year: 2022,Page(s):1823 - 1837

Cited by: Papers (1)

[HTML](#)

Device-Free Sensing in OFDM Cellular Network

Qin Shi;Liang Liu;Shuowen Zhang;Shuguang Cui

Publication Year: 2022,Page(s):1838 - 1853

[HTML](#)

A Novel ISAC Transmission Framework Based on Spatially-Spread Orthogonal Time Frequency Space Modulation

Shuangyang Li;Weijie Yuan;Chang Liu;Zhiqiang Wei;Jinhong Yuan;Baoming Bai;Derrick Wing Kwan Ng

Publication Year: 2022,Page(s):1854 - 1872

Cited by: Papers (3)

[HTML](#)

Integrating Low-Complexity and Flexible Sensing Into Communication Systems

Kai Wu;J. Andrew Zhang;Xiaojing Huang;Y. Jay Guo

Publication Year: 2022,Page(s):1873 - 1889

[HTML](#)

QoS-Aware Hybrid Beamforming and DOA Estimation in Multi-Carrier Dual-Function Radar-Communication Systems

Ziyang Cheng;Bin Liao

Publication Year: 2022,Page(s):1890 - 1905

Cited by: Papers (1)

[HTML](#)

MIMO Waveform Design for Dual Functions of Radar and Communication With Space-Time Coding

Wenhua Wu;Guojun Han;Yunhe Cao;Yongwei Huang;Tat-Soon Yeo

Publication Year: 2022,Page(s):1906 - 1917

[HTML](#)

Joint Waveform and Filter Designs for STAP-SLP-Based MIMO-DFRC Systems

Rang Liu;Ming Li;Qian Liu;A. Lee Swindlehurst

Publication Year: 2022,Page(s):1918 - 1931

[HTML](#)

Transmit Design for Joint MIMO Radar and Multiuser Communications With Transmit Covariance Constraint

Xiang Liu;Tianyao Huang;Yimin Liu

Publication Year: 2022,Page(s):1932 - 1950

Cited by: [Papers \(1\)](#)

[HTML](#)

MIMO OFDM Dual-Function Radar-Communication Under Error Rate and Beampattern Constraints

Jeremy Johnston;Luca Venturino;Emanuele Grossi;Marco

Lops;Xiaodong Wang

Publication Year: 2022,Page(s):1951 - 1964

Cited by: [Papers \(1\)](#)

[HTML](#)

A Precoding Approach for Dual-Functional Radar-Communication System With One-Bit DACs

Xiaoyou Yu;Qi Yang;Zhu Xiao;Hongyang Chen;Vincent

Havyarimana;Zhu Han

Publication Year: 2022,Page(s):1965 - 1977

[HTML](#)

NOMA-Aided Joint Radar and Multicast-Unicast Communication Systems

Xidong Mu;Yuanwei Liu;Li Guo;Jiaru Lin;Lajos Hanzo

Publication Year: 2022,Page(s):1978 - 1992

[HTML](#)

Wireless Radar Sensor Networks: Epidemiological Modeling and Optimization

Lin Bai;Jiexun Liu;Rui Han;Wei Zhang

Publication Year: 2022,Page(s):1993 - 2005

[HTML](#)

TechRxiv: Share Your Preprint Research with the World!

Publication Year: 2022,Page(s):2006 - 2006

[HTML](#)

IEEE Communications Society Information

Publication Year: 2022,Page(s):C3 - C3

[HTML](#)

IEEE

# COMMUNICATIONS LETTERS

A PUBLICATION OF THE IEEE COMMUNICATIONS SOCIETY



JUNE 2022

VOLUME 26

NUMBER 6

ICLEF6

(ISSN 1558-2558)

## Table of Contents

Publication Year: 2022,Page(s):C1 - 1205  
HTML

## IEEE Communications Society

Publication Year: 2022,Page(s):C2 - C2  
HTML

## Optimization and Simplification of PCPA Decoder for Reed-Muller Codes

Jiajie Li;Warren J. Gross  
Publication Year: 2022,Page(s):1206 - 1210  
HTML

## Some Short-Length Girth-8 QC-LDPC Codes From Primes of the Form $\ell^2 + 1$

Inseon Kim;Tetsuya Kojima;Hong-Yeop Song  
Publication Year: 2022,Page(s):1211 - 1215  
HTML

## A General Framework for Secrecy Performance Analysis via Quantifier Elimination

Minh-Tuong Nguyen;Thai-Hoc Vu;Sunghwan Kim  
Publication Year: 2022,Page(s):1216 - 1220  
HTML

## A Multi-Eavesdropper Scheme Against RIS Secured LoS-Dominated Channel

Zhuangkun Wei;Weisi Guo;Bin Li  
Publication Year: 2022,Page(s):1221 - 1225  
HTML

## An Efficient Semi-Quantum Key Distribution Protocol and Its Security Proof

Ye Chongqiang;Li Jian;Chen Xiubo;Tian Yuan;Hou Yanyan  
Publication Year: 2022,Page(s):1226 - 1230  
HTML

## Intelligent Omni Surface-Assisted Secure MIMO Communication Networks With Artificial Noise

Sisai Fang;Gaojie Chen;Zaid Abdullah;Yonghui Li  
Publication Year: 2022,Page(s):1231 - 1235  
HTML

## Non-Outage Probability of Jamming-Assisted Continuous Eavesdropping With Multi-Antenna

Zhiming Zhu;Chunguo Li;Yongming Huang;Luxi Yang  
Publication Year: 2022,Page(s):1236 - 1239  
HTML

## Performance Analysis for Covert Communications Under Faster-Than-Nyquist Signaling

Yuan Li;Yuchen Zhang;Jianquan Wang;Wanyu Xiang;Sa Xiao;Liang Chang;Wanbin Tang  
Publication Year: 2022,Page(s):1240 - 1244  
Cited by: Papers (1)  
HTML

## Relay Selection and Secure Connectivity Analysis in Energy Harvesting Multi-Hop D2D Networks

Guangzhen Si;Zheng Dou;Yun Lin;Lin Qi;Meiyu Wang  
Publication Year: 2022,Page(s):1245 - 1248  
HTML

## The Optimal Precoded Faster-Than-Nyquist Signaling for Covert Communications

Yuchen Zhang;Yuan Li;Wanyu Xiang;Jianquan Wang;Sa Xiao;Xiaoping Li;Wanbin Tang  
Publication Year: 2022,Page(s):1249 - 1253  
HTML

## Analysis of PAM Mapping for Convolutional-Coded Physical-Layer Network Coding

Pingping Chen;Fangjin Xu;Yi Fang;Feng Chen;Feng Wang  
Publication Year: 2022,Page(s):1254 - 1258  
HTML

## On the Performance of Massive MIMO Full-Duplex Relaying With Low-Resolution ADCs

Bridget D. Antwi-Boasiako;Roger K. Ahiadormey;Prince Anokye;Kyoung-Jae Lee  
Publication Year: 2022,Page(s):1259 - 1263  
HTML

## A Learning-Based AoA Estimation Method for Device-Free Localization

Ke Hong;Tianyu Wang;Junchen Liu;Yu Wang;Yuan Shen  
Publication Year: 2022,Page(s):1264 - 1267  
HTML

## Compressive Near-Field Localization for Multipath RIS-Aided Environments

Omar Rinchi;Ahmed Elzanaty;Mohamed-Slim Alouini  
Publication Year: 2022,Page(s):1268 - 1272  
HTML

## Machine Learning-Based Angle of Arrival Estimation for Ultra-Wide Band Radios

Mostafa Naseri;Adnan Shahid;Gert-Jan Gordebeke;Sam Lemey;Michiel Boes;Samuel Van De Velde;Eli De Poorter  
Publication Year: 2022,Page(s):1273 - 1277  
HTML



Semidefinite Programming for Wireless Cooperative Localization Using Biased RSS Measurements  
Qi Wang;Zhansheng Duan;Fei Li  
Publication Year: 2022,Page(s):1278 - 1282  
HTML

Theoretical Bound of Position and Orientation Estimation for Visible Light Systems Subject to NLOS Channel and Power Uncertainty  
Shengqiang Shen;Shiyin Li  
Publication Year: 2022,Page(s):1283 - 1287  
HTML

A Deep Constrained and Synchronous Training Framework for Hybrid Precoding  
Zijian Liu;Yang Luo;Yan Xu;Chunbo Luo  
Publication Year: 2022,Page(s):1288 - 1292  
HTML

Federated Learning With Erroneous Communication Links  
Mahyar Shirvanimoghaddam;Ayoob Salari;Yifeng Gao;Aradhika Guha  
Publication Year: 2022,Page(s):1293 - 1297  
HTML

Fine-Grained Modulation Classification Using Multi-Scale Radio Transformer With Dual-Channel Representation  
Qinghe Zheng;Penghui Zhao;Hongjun Wang;Abdussalam Elhanashi;Sergio Saponara  
Publication Year: 2022,Page(s):1298 - 1302  
HTML

Learning to Optimize Resource Assignment for Task Offloading in Mobile Edge Computing  
Yurong Qian;Jindan Xu;Shuhan Zhu;Wei Xu;Lisheng Fan;George K. Karagiannidis  
Publication Year: 2022,Page(s):1303 - 1307  
Cited by: Papers (1)  
HTML

Multicell Power Control Under QoS Requirements With CNet  
Qiushuo Hou;Mengyuan Lee;Guanding Yu;Zhaolin Zhou  
Publication Year: 2022,Page(s):1308 - 1312  
HTML

Transformer-Based Detector for OFDM With Index Modulation  
Dexin Zhang;Sixian Wang;Kai Niu;Jincheng Dai;Sen Wang;Yifei Yuan  
Publication Year: 2022,Page(s):1313 - 1317  
HTML

In-Phase and Quadrature Index Modulation Aided OTFS Transmission  
Dan Feng;Jianping Zheng;Baoming Bai;Jing Jiang;Ling Zheng  
Publication Year: 2022,Page(s):1318 - 1322  
HTML

Spectrum Sensing by Cepstral Covariance Detection  
Azza Moawad;Koffi-Clément Yao;Ali Mansour;Roland Gautier  
Publication Year: 2022,Page(s):1323 - 1327  
HTML

Splitting Receiver With Joint Envelope and Coherent Detection  
Yanyan Wang;Wanchun Liu;Xiangyun Zhou  
Publication Year: 2022,Page(s):1328 - 1332  
Cited by: Papers (1)  
HTML

Color-Shift Keying Code Design in Visible Light Communications Using Finite-State Machines  
Zongyan Li;Tianfeng Shi;Baoling Shan;Shiyin Li  
Publication Year: 2022,Page(s):1333 - 1337  
HTML

Cooperative Resource Scheduling for Time-Sensitive Services in an Integrated XGS-PON and Wi-Fi 6 Network  
Jun Li;Sanjay K. Bose;Gangxiang Shen  
Publication Year: 2022,Page(s):1338 - 1342  
HTML

High Power Eye-Safe Optical Wireless Gigabit Link Employing a Freeform Multipath Lens  
René Kirrbach;Michael Faulwaßer;Mira Stephan;Tobias Schneider;Frank Deicke  
Publication Year: 2022,Page(s):1343 - 1347  
HTML

An Adaptive Rate Allocation Scheme for Time-Varying Graph Signal Quantization  
Siman Lin;Lin Wang;Huihui Wu;Donghui Guo  
Publication Year: 2022,Page(s):1348 - 1352  
HTML

An MEC-Enabled Framework for Task Offloading and Power Allocation in NOMA Enhanced ABS-Assisted VANETS  
Yixin He;Dawei Wang;Fanghui Huang;Ruonan Zhang  
Publication Year: 2022,Page(s):1353 - 1357  
HTML

Rate-Splitting Assisted Massive Machine-Type Communications in Cell-Free Massive MIMO  
Anup Mishra;Yijie Mao;Luca Sanguinetti;Bruno Clerckx  
Publication Year: 2022,Page(s):1358 - 1362  
HTML

3D UAV Deployment in Multi-UAV Networks With Statistical User Position Information  
Leiyu Wang;Haixia Zhang;Shuaishuai Guo;Dongfeng Yuan  
Publication Year: 2022,Page(s):1363 - 1367  
HTML

Cellular-Connected UAV With Adaptive Air-to-Ground Interference Cancellation and Trajectory Optimization  
Peiming Li;Lifeng Xie;Jianping Yao;Jie Xu  
Publication Year: 2022,Page(s):1368 - 1372  
HTML

Efficient Uplink Transmission in Ultra-Dense LEO Satellite Networks With Multiband Antennas  
Tianjiao Chen;Jiang Liu;Qiang Ye;Qinqin Tang;Weiting Zhang;Tao Huang;Yunjie Liu  
Publication Year: 2022,Page(s):1373 - 1377  
HTML

Hybrid Decision Framework for Energy Efficiency Enhancement in NOMA-UAV Networks  
Syed Khurram Mahmud;Yue Chen;Kok Keong Chai  
Publication Year: 2022,Page(s):1378 - 1382  
HTML

A Novel Weighted LLR Algorithm for Non-Coherent OFDM-MFSK System in Ionospheric Scatter Channel  
Jian Ding;Xiaoming Niu;Shuji Hao;Qingliang Li;Guangliang Ren  
Publication Year: 2022,Page(s):1383 - 1387  
HTML

Dynamic Joint Frequency Offset and Phase Noise Tracking by Number-Theoretic Net-Based Gaussian Particle Filter in Coherent Optical Systems

Xinwei Du;Yangfan Xu;Wei Huang;Changyuan Yu

Publication Year: 2022,Page(s):1388 - 1392

[HTML](#)

3-D Antenna Array Structures for Millimeter Wave Multi-User

Massive MIMO Hybrid Precoder Design: A Performance Comparison

Mobeen Mahmood;Asil Koc;Tho Le-Ngoc

Publication Year: 2022,Page(s):1393 - 1397

[HTML](#)

An IRS-Aided GSSK Scheme for Wireless Communication System

Chaorong Zhang;Yuyang Peng;Jun Li;Fei Tong

Publication Year: 2022,Page(s):1398 - 1402

[HTML](#)

Holographic Beamforming for Ultra Massive MIMO With Limited

Radiation Amplitudes: How Many Quantized Bits Do We Need?

Xinyuan Hu;Ruoqi Deng;Boya Di;Hongliang Zhang;Linyang Song

Publication Year: 2022,Page(s):1403 - 1407

[HTML](#)

Linearized Model for MIMO-MFSK Systems With Energy Detection

Lin Zheng;Chao Yang;Xiaofang Deng;Wei Ge

Publication Year: 2022,Page(s):1408 - 1412

[HTML](#)

Novel Multiple RIS-Assisted Communications for 6G Networks

Yongwei Wang;Wensheng Zhang;Yunfei Chen;Cheng-Xiang

Wang;Jian Sun

Publication Year: 2022,Page(s):1413 - 1417

[HTML](#)

On the Performance of Nonlinear Corrective Active Constellation

Expansion in OTFS Systems

Zhenduo Wang;Xingyu Chen;Zhiguo Sun;Xiaoyan Ning

Publication Year: 2022,Page(s):1418 - 1422

[HTML](#)

Reconfigurable Intelligent Surface Deployment for Blind Zone Improvement in mmWave Wireless Networks

Alexander Chen;Yuanbin Chen;Zhaocheng Wang

Publication Year: 2022,Page(s):1423 - 1427

[HTML](#)

Statistically Robust Transceiver Design for Multi-RIS Assisted Multi-User MIMO Systems

Kaizhe Xu;Shiqi Gong;Miao Cui;Guangchi Zhang;Shaodan Ma

Publication Year: 2022,Page(s):1428 - 1432

[HTML](#)

A Cooperative D2D Content Sharing Scheme Using NOMA Under Social Ties

Runzhou Li;Peilin Hong;Kaiping Xue;Te Yang

Publication Year: 2022,Page(s):1433 - 1437

Cited by: Papers (1)

[HTML](#)

Adaptive Routing Design for Flying Ad Hoc Networks

Min Zhang;Chao Dong;Peng Yang;Ting Tao;Qihui Wu;Tony Q. S.

Quek

Publication Year: 2022,Page(s):1438 - 1442

[HTML](#)

Fast Finite Frame Length IRSA Optimization Based on Bayesian Optimization

Xinye Shao;Ximu Zhang;Mingchuan Yang;Qing Guo

Publication Year: 2022,Page(s):1443 - 1447

[HTML](#)

**IEEE Communications Society**

Publication Year: 2022,Page(s):C3 - C3

[HTML](#)

# IEEE TRANSACTIONS ON NETWORK AND SERVICE MANAGEMENT

A PUBLICATION OF THE IEEE COMMUNICATIONS SOCIETY



JUNE 2022

VOLUME 19

NUMBER 2

ITNSC4

(ISSN 1932-4537)

## Table of Contents

Publication Year: 2022,Page(s):C1 - 771  
HTML

## ML-Based IDPS Enhancement With Complementary Features for Home IoT Networks

Poulmanogo Illy;Georges Kaddoum;Kuljeet Kaur;Sahil Garg  
Publication Year: 2022,Page(s):772 - 783  
HTML

## CLB: Coarse-Grained Precision Traffic-Aware Weighted Cost Multipath Load Balancing on PISA

Debobroto Das Robin;Javed I. Khan  
Publication Year: 2022,Page(s):784 - 803  
HTML

## A Novel RSCA Scheme for Offline Survivable SDM-EON With Advance Reservation

Joy Halder;Tamaghna Acharya;Uma Bhattacharya  
Publication Year: 2022,Page(s):804 - 817  
HTML

## Theoretical Performance Analysis of Distributed Queue for Massive Machine Type Communications: Throughput, Latency, Energy Consumption

Yaoyao Li;Xin Jian;Keping Yu;Neeraj Kumar;Shaoxiong Cai  
Publication Year: 2022,Page(s):818 - 828  
HTML

## HARS: A High-Available and Resource-Saving Service Function Chain Placement Approach in Data Center Networks

Meng Niu;Qingmian Han;Bo Cheng;Meng Wang;Ziqi Xu;Wenyuan Gu;Shuhao Zhang;Junliang Chen  
Publication Year: 2022,Page(s):829 - 847  
HTML

## Adaptive One Memory Access Bloom Filters

Pedro Reviriego;Alfonso Sánchez-Macián;Ori Rottenstreich;David Larrabeiti  
Publication Year: 2022,Page(s):848 - 859  
HTML

## Comparison of Placement Variants of Virtual Network Functions From Availability and Reliability Perspective

Priyatosh Mandal  
Publication Year: 2022,Page(s):860 - 874  
HTML

## A Multi-Scale Feature Attention Approach to Network Traffic Classification and Its Model Explanation

Yipeng Wang;Xiaochun Yun;Yongzheng Zhang;Chen Zhao;Xin Liu  
Publication Year: 2022,Page(s):875 - 889  
HTML

## Weighted NSFIB Aggregation With Generalized Next Hop of Strict Partial Order

Qing Li;Yichao Wu;Jingpu Duan;Jiahai Yang;Yong Jiang  
Publication Year: 2022,Page(s):890 - 904  
HTML

## Real-Time Analysis of Multiple Root Causes for Anomalies Assisted by Digital Twin in NFV Environment

Weili Wang;Lun Tang;Chenmeng Wang;Qianbin Chen  
Publication Year: 2022,Page(s):905 - 921  
HTML

## DeepLTSC: Long-Tail Service Classification via Integrating Category Attentive Deep Neural Network and Feature Augmentation

Guobing Zou;Song Yang;Shengyu Duan;Bofeng Zhang;Yanglan Gan;Yixin Chen  
Publication Year: 2022,Page(s):922 - 935  
HTML

## Resource Fragmentation-Aware Embedding in Dynamic Network Virtualization Environments

Hancheng Lu;Fangyu Zhang  
Publication Year: 2022,Page(s):936 - 948  
HTML

## Application-Aware Service Degradation in Elastic Optical Networks

Alex S. Santos;Juliana de Santi;Gustavo B. Figueiredo;Biswanath Mukherjee  
Publication Year: 2022,Page(s):949 - 961  
HTML

## Service-Aware Design Policy of End-to-End Network Slicing for 5G Use Cases

Ranyin Wang;Abdol-Hamid Aghvami;Vasilis Friderikos  
Publication Year: 2022,Page(s):962 - 975  
HTML

## Validation of HTTP Response Time From Network Traffic as an Alternative to Web Browser Instrumentation

Carlos López;Daniel Morato;Eduardo Magaña;Mikel Izal  
Publication Year: 2022,Page(s):976 - 990  
HTML

## Datasets

### Dynamic Distributed Multi-Path Aided Load Balancing for Optical Data Center Networks

Fu Wang;Haipeng Yao;Qi Zhang;Jingjing Wang;Ran Gao;Dong Guo;Mohsen Guizani  
Publication Year: 2022,Page(s):991 - 1005

Cited by: Papers (1)

HTML

VNF Embedding and Assignment for Network Function Parallelism  
Kate Ching-Ju Lin;Pei-Ling Chou  
Publication Year: 2022,Page(s):1006 - 1016  
HTML

X-MAN: A Non-Intrusive Power Manager for Energy-Adaptive  
Cloud-Native Network Functions  
Zuo Xiang;Malte Höweler;Dongho You;Martin Reisslein;Frank H. P.  
Fitzek  
Publication Year: 2022,Page(s):1017 - 1035  
HTML

AI-driven, Context-Aware Profiling for 5G and Beyond Networks  
Nikolaos Koursiompas;Sokratis Bampounakis;Ioannis  
Stavarakakis;Nancy Alonistioti  
Publication Year: 2022,Page(s):1036 - 1048  
HTML

DRL-PLink: Deep Reinforcement Learning With Private Link  
Approach for Mix-Flow Scheduling in Software-Defined Data-Center  
Networks  
Wai-Xi Liu;Jinjie Lu;Jun Cai;Yinghao Zhu;Sen Ling;Qingchun Chen  
Publication Year: 2022,Page(s):1049 - 1064  
Cited by: Papers (1)  
HTML

Toward a Trust Aware Network Slice-Based Service Provision in  
Virtualized Infrastructures  
Vijay Varadharajan;Kallol Krishna Karmakar;Uday  
Tupakula;Michael Hitchens  
Publication Year: 2022,Page(s):1065 - 1082  
HTML

Beamer: Stage-Aware Coflow Scheduling to Accelerate Hyper-  
Parameter Tuning in Deep Learning Clusters  
Yihong He;Weibo Cai;Pan Zhou;Gang Sun;Shouxi Luo;Hongfang  
Yu;Mohsen Guizani  
Publication Year: 2022,Page(s):1083 - 1097  
HTML

Resource Allocation Model Against Multiple Failures With  
Workload-Dependent Failure Probability  
Mengfei Zhu;Fujun He;Eiji Oki  
Publication Year: 2022,Page(s):1098 - 1116  
Cited by: Papers (1)  
HTML

Service Function Chain Survivability Provisioning in Fog Networks  
Nazli Siasi;Mohammed A. Jasim;Aysegül Yayimli;Nasir Ghani  
Publication Year: 2022,Page(s):1117 - 1128  
HTML

On Using Raft Over Networks: Improving Leader Election  
Kostas Choumas;Thanasis Korakis  
Publication Year: 2022,Page(s):1129 - 1141  
HTML

Quantitative Comparison of Two Chain-Selection Protocols Under  
Selfish Mining Attack  
Runkai Yang;Xiaolin Chang;Jelena Mišić;Vojislav B. Mišić;Hongyu  
Kang  
Publication Year: 2022,Page(s):1142 - 1158  
HTML

Blockchain on Security and Forensics Management in Edge  
Computing for IoT: A Comprehensive Survey  
Zhuofan Liao;Xiang Pang;Jingyu Zhang;Bing Xiong;Jin Wang  
Publication Year: 2022,Page(s):1159 - 1175  
HTML

Quick Block Transport System for Scalable Hyperledger Fabric  
Blockchain Over D2D-Assisted 5G Networks  
Ryeong Hwan Kim;Hyunmin Noh;Hwangjun Song;Gi Seok Park  
Publication Year: 2022,Page(s):1176 - 1190  
HTML

ESS: An Efficient Storage Scheme for Improving the Scalability of  
Bitcoin Network  
Xiaoqing Wang;Chunping Wang;Kun Zhou;Hongbing Cheng  
Publication Year: 2022,Page(s):1191 - 1202  
HTML

Blockchain-Based Privacy-Preserving Networking Strategy for  
Dynamic Wireless Charging of EVs  
Mahmoud Abouyoussef;Muhammad Ismail  
Publication Year: 2022,Page(s):1203 - 1215  
HTML

Three-Dimensional Tradeoffs for Consensus Algorithms: A Review  
Linhui Li;Peichang Shi;Xiang Fu;Peng Chen;Tao Zhong;Jinzu  
Kong  
Publication Year: 2022,Page(s):1216 - 1228  
HTML

MPCN-RP: A Routing Protocol for Blockchain-Based Multi-Charge  
Payment Channel Networks  
Yanjiao Chen;Yuyang Ran;Jingyue Zhou;Jian Zhang;Xueluan Gong  
Publication Year: 2022,Page(s):1229 - 1242  
HTML

Virtual Network Function Placement in Satellite Edge Computing  
With a Potential Game Approach  
Xiangqiang Gao;Rongke Liu;Aryan Kaushik  
Publication Year: 2022,Page(s):1243 - 1259  
HTML

Improve the Energy Efficiency of Datacenters With the Awareness  
of Workload Variability  
Cheng Hu;Yingya Guo;Yuhui Deng;Longya Lang  
Publication Year: 2022,Page(s):1260 - 1273  
HTML

On the Bilevel Optimization for Remapping Virtual Networks in an  
HOE-DCN  
Hao Yang;Xiaoqin Pan;Sicheng Zhao;Binjie Ge;Hang Yu;Zuqing  
Zhu  
Publication Year: 2022,Page(s):1274 - 1286  
HTML

Analysis of Scaling Policies for NFV Providing 5G/6G Reliability  
Levels With Fallible Servers  
Jorge Ortin;Pablo Serrano;Jaime Garcia-Reinoso;Albert Banchs  
Publication Year: 2022,Page(s):1287 - 1305  
HTML

Joint Emergency Data and Service Evacuation in Cloud Data  
Centers Against Early Warning Disasters  
Lisheng Ma;Wei Su;Bin Wu;Bin Yang;Xiaohong Jiang  
Publication Year: 2022,Page(s):1306 - 1320  
HTML

Automated Concept Drift Handling for Fault Prediction in Edge  
Clouds Using Reinforcement Learning  
Behshid Shayesteh;Chunyan Fu;Amin Ebrahimzadeh;Roch H.  
Glitho  
Publication Year: 2022,Page(s):1321 - 1335  
HTML

Cloud Computing as a Platform for Monetizing Data Services: A Two-Sided Game Business Model  
Ahmed Saleh Bataineh;Jamal Bentahar;Rabeb Mizouni;Omar Abdel Wahab;Gaith Rjoub;May El Barachi  
Publication Year: 2022,Page(s):1336 - 1350  
Cited by: Papers (1)  
HTML

A Comparative Evaluation of Edge Cloud Virtualization Technologies  
Polychronis Valsamas;Lefteris Mamas;Luis Miguel Contreras  
Publication Year: 2022,Page(s):1351 - 1365  
HTML

Evaluating QUIC Performance Over Web, Cloud Storage, and Video Workloads  
Tanya Shreedhar;Rohit Panda;Sergey Podanev;Vaibhav Bajpai  
Publication Year: 2022,Page(s):1366 - 1381  
HTML

Blender: A Container Placement Strategy by Leveraging Zipf-Like Distribution Within Containerized Data Centers  
Zhaorui Wu;Yuhui Deng;Hao Feng;Yi Zhou;Geyong Min;Zhen Zhang  
Publication Year: 2022,Page(s):1382 - 1398  
HTML

CVC: A Collaborative Video Caching Framework Based on Federated Learning at the Edge  
Yijing Li;Shihong Hu;Guanghui Li  
Publication Year: 2022,Page(s):1399 - 1412  
HTML

Deep Learning Model for Content Aware Caching at MEC Servers  
Anirban Lekharu;Mitansh Jain;Arijit Sur;Arnab Sarkar  
Publication Year: 2022,Page(s):1413 - 1425  
HTML

Hybrid Model-Data Driven Network Slice Reconfiguration by Exploiting Prediction Interval and Robust Optimization  
Fengsheng Wei;Shuang Qin;Gang Feng;Yao Sun;Jian Wang;Ying-Chang Liang  
Publication Year: 2022,Page(s):1426 - 1441  
HTML

On Index Coded Video Delivery at the WiFi Edge: Performance and System Design  
Lalhruaizela Chhangte;Nikhil Karamchandani;D. Manjunath;Emanuele Viterbo  
Publication Year: 2022,Page(s):1442 - 1457  
HTML

Migration-Aware Network Services With Edge Computing  
Atri Mukhopadhyay;George Iosifidis;Marco Ruffini  
Publication Year: 2022,Page(s):1458 - 1471  
HTML

Techno-Socio-Economic Impact of Joint Energy Resource Allocation Scheme in FiWi Network  
Akshita Gupta;Vivek Ashok Bohara;Anand Srivastava  
Publication Year: 2022,Page(s):1472 - 1488  
HTML

Monitoring Platform Evolution Toward Serverless Computing for 5G and Beyond Systems  
Ramon Perez;Priscilla Benedetti;Matteo Pergolesi;Jaime Garcia-Reinoso;Aitor Zabala;Pablo Serrano;Mauro Femminella;Gianluca Reali;Kris Steenhaut;Albert Banchs  
Publication Year: 2022,Page(s):1489 - 1504  
HTML

Human Mobility Support for Personalized Data Offloading  
Emanuel Lima;Ana Aguiar;Paulo Carvalho;Aline Carneiro Viana  
Publication Year: 2022,Page(s):1505 - 1520  
HTML

Experimental V2X Evaluation for C-V2X and ITS-G5 Technologies in a Real-Life Highway Environment  
Vasilis Maglogiannis;Dries Naudts;Seilendria Hadiwardoyo;Daniel van den Akker;Johann Marquez-Barja;Ingrid Moerman  
Publication Year: 2022,Page(s):1521 - 1538  
HTML

Joint Computation Offloading and Resource Allocation Under Task-Overflowed Situations in Mobile-Edge Computing  
Huijun Tang;Huaming Wu;Yubin Zhao;Ruidong Li  
Publication Year: 2022,Page(s):1539 - 1553  
HTML

A Reinforcement Learning-Based Green Resource Allocation for Heterogeneous Services in Cooperative Cognitive Radio Networks  
Amandeep Kaur;Krishan Kumar  
Publication Year: 2022,Page(s):1554 - 1566  
HTML

Network Services Anomalies in NFV: Survey, Taxonomy, and Verification Methods  
Moubarak Zoure;Toufik Ahmed;Laurent Réveillère  
Publication Year: 2022,Page(s):1567 - 1584  
HTML

TSSM: Time-Sharing Switch Migration to Balance Loads of Distributed SDN Controllers  
Wei-Kuang Lai;You-Chiun Wang;Yi-Chien Chen;Zong-Ting Tsai  
Publication Year: 2022,Page(s):1585 - 1597  
HTML

Minimizing Update Makespan in SDNs Without TCAM Overhead  
Mahdi Dolati;Ahmad Khonsari;Majid Ghaderi  
Publication Year: 2022,Page(s):1598 - 1613  
HTML

On Efficient Service Function Chaining in Hybrid Software Defined Networks  
Cheng Ren;Hao Li;Yaxin Li;Yu Wang;Haiyun Xiang;Xuxiang Chen  
Publication Year: 2022,Page(s):1614 - 1628  
Cited by: Papers (1)  
HTML

Service Chain Provisioning With Sub-Chain-Enabled Coordinated Protection to Satisfy Availability Requirements  
Yuncan Zhang;Fujun He;Eiji Oki  
Publication Year: 2022,Page(s):1629 - 1649  
HTML

EOMCSR: An Energy Optimized Multi-Constrained Sustainable Routing Model for SDWSN  
Rohit Kumar;U. Venkanna;Vivek Tiwari  
Publication Year: 2022,Page(s):1650 - 1661  
HTML

Hybrid Incremental Deployment of HSDN Devices  
Pedro Pablo Cespedes-Sanchez;Bader Maluff;Diego P. Pinto-Roa;Horacio Legal-Ayala  
Publication Year: 2022,Page(s):1662 - 1678  
HTML

An Online Entropy-Based DDoS Flooding Attack Detection System With Dynamic Threshold  
Loïc D. Tsobdjou;Samuel Pierre;Alejandro Quintero  
Publication Year: 2022,Page(s):1679 - 1689  
HTML

Preventing DDoS Flooding Attacks With Cryptographic Path Identifiers in Future Internet  
Hongbin Luo;Zhoubiao Liu;Shan Zhang  
Publication Year: 2022,Page(s):1690 - 1704  
HTML

Federated Anomaly Detection on System Logs for the Internet of Things: A Customizable and Communication-Efficient Approach  
Beibei Li;Shang Ma;Ruiling Deng;Kim-Kwang Raymond Choo;Jin Yang  
Publication Year: 2022,Page(s):1705 - 1716  
HTML

ByteloT: A Practical IoT Device Identification System Based on Packet Length Distribution  
Chenxin Duan;Hao Gao;Guanglei Song;Jiahai Yang;Zhiliang Wang  
Publication Year: 2022,Page(s):1717 - 1728  
HTML

Continuous Verification of Network Security Compliance  
Claas Lorenz;Vera Clemens;Max Schrötter;Bettina Schnor  
Publication Year: 2022,Page(s):1729 - 1745  
HTML

LICALITY—Likelihood and Criticality: Vulnerability Risk Prioritization Through Logical Reasoning and Deep Learning  
Zhen Zeng;Zhun Yang;Dijiang Huang;Chun-Jen Chung  
Publication Year: 2022,Page(s):1746 - 1760  
HTML

CSEVP: A Collaborative, Secure, and Efficient Content Validation Protection Framework for Information Centric Networking  
Kaiping Xue;Jiayu Yang;Qiudong Xia;David S. L. Wei;Jian Li;Qibin Sun;Jun Lu  
Publication Year: 2022,Page(s):1761 - 1775  
HTML

Privacy and Transparency in CBDCs: A Regulation-by-Design AML/CFT Scheme  
Nadia Pocher;Andreas Veneris  
Publication Year: 2022,Page(s):1776 - 1788  
HTML

Learning-Based Joint QoE Optimization for Adaptive Video Streaming Based on Smart Edge  
Xiaoteng Ma;Qing Li;Yong Jiang;Gabriel-Miro Muntean;Longhao Zou  
Publication Year: 2022,Page(s):1789 - 1806  
HTML

Dynamic QoS-Aware Traffic Planning for Time-Triggered Flows in the Real-Time Data Plane  
Jonathan Falk;Heiko Geppert;Frank Dürr;Sukanya Bhowmik;Kurt Rothermel  
Publication Year: 2022,Page(s):1807 - 1825

HTML  
An Approximation Algorithm for Joint Caching and Recommendations in Cache Networks  
Dimitra Tsigkari;Thrasyvoulos Spyropoulos  
Publication Year: 2022,Page(s):1826 - 1841  
HTML

DeepQoS: Core-Stateless Hierarchical QoS in Programmable Switches  
Ferenc Fejes;Szilveszter Nádas;Gergő Gombos;Sándor Laki  
Publication Year: 2022,Page(s):1842 - 1861  
HTML

MediaFlow: Multicast Routing and In-Network Monitoring for Professional Media Production  
Ammar Latif;Rahul Parameswaran;Sachin Vishwarupe;Abdallah Khreishah;Yaser Jararweh;Ali H. Alenezi  
Publication Year: 2022,Page(s):1862 - 1875  
HTML

On Sustained Zero Trust Conceptualization Security for Mobile Core Networks in 5G and Beyond  
Yahuza Bello;Ahmed Refaey Hussein;Mehmet Ulema;Juanita Koilpillai  
Publication Year: 2022,Page(s):1876 - 1889  
HTML

**Estimating Video on Demand QoE From Network QoS Through ICMP Probes**  
Gilson Miranda;Daniel Fernandes Macedo;Johann M. Marquez-Barja  
Publication Year: 2022,Page(s):1890 - 1902  
HTML

**Improving Quality-of-Service in Cluster-Based UAV-Assisted Edge Networks**  
Tushar Bose;Aala Suresh;Om Jee Pandey;Linga Reddy Cenkeramaddi;Rajesh M. Hegde  
Publication Year: 2022,Page(s):1903 - 1919  
HTML

**Function Splitting, Isolation, and Placement Trade-Offs in Network Slicing**  
Wesley da Silva Coelho;Amal Benhamiche;Nancy Perrot;Stefano Secci  
Publication Year: 2022,Page(s):1920 - 1936  
HTML

**Corrections to “Fair Scheduling and Rate Control for Service Function Chain in NFV-Enabled Data Center”**  
Jiachen Zu;Guyu Hu;Dongyang Peng;Shengxu Xie;Wenbin Gao  
Publication Year: 2022,Page(s):1937 - 1937



# IEEE TRANSACTIONS ON WIRELESS COMMUNICATIONS

A PUBLICATION OF THE IEEE COMMUNICATIONS SOCIETY AND THE IEEE SIGNAL PROCESSING SOCIETY



**JUNE 2022**

**VOLUME 21**

**NUMBER 6**

**ITWCAX**

**(ISSN 1536-1276)**

## Table of Contents

Publication Year: 2022,Page(s):C1 - C4

[HTML](#)

## IEEE Transactions on Wireless Communications

Publication Year: 2022,Page(s):C2 - C2

[HTML](#)

### Optimal SIC Ordering and Power Allocation in Downlink Multi-Cell NOMA Systems

Sepehr Rezvani;Eduard Axel Jorswieck;Nader Mokari Yamchi;Mohammad Reza Javan

Publication Year: 2022,Page(s):3553 - 3569

Cited by: [Papers \(2\)](#)

[HTML](#)

### Stochastic Analysis of Cooperative Satellite-UAV Communications

Yu Tian;Gaofeng Pan;Mustafa A. Kishk;Mohamed-Slim Alouini

Publication Year: 2022,Page(s):3570 - 3586

Cited by: [Papers \(1\)](#)

[HTML](#)

### 3D On and Off-Grid Dynamic Channel Tracking for Multiple UAVs and Satellite Communications

Jiadong Yu;Xiaolan Liu;Yue Gao;Xuemin Shen

Publication Year: 2022,Page(s):3587 - 3604

[HTML](#)

### Optimization of 16-QAM and 32-QAM Constellations for Mitigating Impairments of Phase Noise in Millimeter-Wave Receivers

R. E. Mvone;C. Hannachi;D. Hammou;E. Moldovan;S. O. Tatu

Publication Year: 2022,Page(s):3605 - 3616

[HTML](#)

### Joint Transmit Precoding and Reflect Beamforming Design for IRS-Assisted MIMO Cognitive Radio Systems

Weiheng Jiang;Yu Zhang;Jun Zhao;Zehui Xiong;Zhiguo Ding

Publication Year: 2022,Page(s):3617 - 3631

Cited by: [Papers \(1\)](#)

[HTML](#)

### The Entanglement-Assisted Communication Capacity Over Quantum Trajectories

Daryus Chandra;Marcello Caleffi;Angela Sara Cacciapuoti

Publication Year: 2022,Page(s):3632 - 3647

[HTML](#)

### Task Offloading in Hybrid Intelligent Reflecting Surface and Massive MIMO Relay Networks

Kunlun Wang;Yong Zhou;Qingqing Wu;Wen Chen;Yang Yang

Publication Year: 2022,Page(s):3648 - 3663

[HTML](#)

### Sum-Rate Maximization in Two-Way MIMO Cooperative Networks With an Energy Harvesting Relay

Ahmad Sirojuddin;Wan-Jen Huang

Publication Year: 2022,Page(s):3664 - 3677

[HTML](#)

### Design and Analysis of MIMO Systems Using Energy Detectors for Sub-THz Applications

Simon Bicaïs;Alexis Falempin;Jean-Baptiste Doré;Valentin Savin

Publication Year: 2022,Page(s):3678 - 3690

[HTML](#)

### Covert Millimeter-Wave Communication: Design Strategies and Performance Analysis

Mohammad Vahid Jamali;Hessam Mahdaviifar

Publication Year: 2022,Page(s):3691 - 3704

Cited by: [Papers \(1\)](#)

[HTML](#)

### Characterizing the Peak-to-Average Power Ratio of OTFS Signals: A Large System Analysis

Peng Wei;Yue Xiao;Wei Feng;Ning Ge;Ming Xiao

Publication Year: 2022,Page(s):3705 - 3720

[HTML](#)

### User Access Control in Open Radio Access Networks: A Federated Deep Reinforcement Learning Approach

Yang Cao;Shao-Yu Lien;Ying-Chang Liang;Kwang-Cheng

Chen;Xuemin Shen

Publication Year: 2022,Page(s):3721 - 3736

[HTML](#)

### A Geometry-Based Game Theoretical Model of Blind and Reactive Underwater Jamming

Alberto Signori;Federico Chiariotti;Filippo Campagnaro;Roberto

Petroccia;Konstantinos Pelekanakis;Pietro Paglierani;João

Alves;Michele Zorzi

Publication Year: 2022,Page(s):3737 - 3751

[HTML](#)

### Learning-Based Branch-and-Bound for Non-Convex Complex Modulus Constrained Problems With Applications in Wireless Communications

Zhe Zhang;Meixia Tao

Publication Year: 2022,Page(s):3752 - 3763

[HTML](#)

### Anchor-Assisted Channel Estimation for Intelligent Reflecting Surface Aided Multiuser Communication

Xinrong Guan;Qingqing Wu;Rui Zhang

Publication Year: 2022,Page(s):3764 - 3778

Cited by: [Papers \(8\)](#)

[HTML](#)

Joint Model and Data-Driven Receiver Design for Data-Dependent Superimposed Training Scheme With Imperfect Hardware  
Chaojin Qing;Lei Dong;Li Wang;Jiafan Wang;Chuan Huang  
Publication Year: 2022,Page(s):3779 - 3791  
HTML

Universal Performance Bounds for Joint Self-Interference Cancellation and Data Detection in Full-Duplex Communications  
Meng He;Chuan Huang  
Publication Year: 2022,Page(s):3792 - 3803  
HTML

Deep Learning-Based Frequency-Selective Channel Estimation for Hybrid mmWave MIMO Systems  
Asmaa Abdallah;Abdulkadir Celik;Mohammad M. Mansour;Ahmed M. Eltawil  
Publication Year: 2022,Page(s):3804 - 3821  
HTML

IRS-Enabled Beam-Space Channel  
Musab Alayasa;Hüseyin Arslan  
Publication Year: 2022,Page(s):3822 - 3835  
Cited by: Papers (1)  
HTML

Federated Learning-Based Content Popularity Prediction in Fog Radio Access Networks  
Yanxiang Jiang;Yuting Wu;Fu-Chun Zheng;Mehdi Bennis;Xiaohu You  
Publication Year: 2022,Page(s):3836 - 3849  
Cited by: Papers (1)  
HTML

Channel Estimation and Data Detection Analysis of Massive MIMO With 1-Bit ADCs  
Italo Atzeni;Antti Tölli  
Publication Year: 2022,Page(s):3850 - 3867  
Cited by: Papers (1)  
HTML

Channel-Aware Adversarial Attacks Against Deep Learning-Based Wireless Signal Classifiers  
Brian Kim;Yalin E. Sagduyu;Kemal Davaslioglu;Tugba Erpek;Sennur Ulukus  
Publication Year: 2022,Page(s):3868 - 3880  
Cited by: Papers (1)  
HTML

Spatial-Spectral Terahertz Networks  
Zheng Lin;Lifeng Wang;Bo Tan;Xiang Li  
Publication Year: 2022,Page(s):3881 - 3892  
HTML

ML and MAP Device Activity Detections for Grant-Free Massive Access in Multi-Cell Networks  
Dongdong Jiang;Ying Cui  
Publication Year: 2022,Page(s):3893 - 3908  
Cited by: Papers (1)  
HTML

Parallelism Versus Latency in Simplified Successive-Cancellation Decoding of Polar Codes  
Seyyed Ali Hashemi;Marco Mondelli;Arman Fazeli;Alexander Vardy;John M. Cioffi;Andrea Goldsmith  
Publication Year: 2022,Page(s):3909 - 3920  
Cited by: Papers (1)  
HTML

Diagnosis of Intelligent Reflecting Surface in Millimeter-Wave Communication Systems  
Rui Sun;Weidong Wang;Li Chen;Guo Wei;Wenyi Zhang  
Publication Year: 2022,Page(s):3921 - 3934  
Cited by: Papers (1)  
HTML

Dynamical Link Budget in Satellite Communications at Ka-Band: Testing Radiometeorological Forecasts With Hayabusa2 Deep-Space Mission Support Data  
M. Biscarini;K. De Sanctis;S. Di Fabio;M. Montagna;L. Milani;Y. Tsuda;F. S. Marzano  
Publication Year: 2022,Page(s):3935 - 3950  
HTML

Federated Edge Learning With Misaligned Over-the-Air Computation  
Yulin Shao;Deniz Gündüz;Soung Chang Liew  
Publication Year: 2022,Page(s):3951 - 3964  
HTML

Adaptive Waveform Design for Communication-Enabled Automotive Radars  
Ceyhun D. Ozkaptan;Eylem Ekici;Onur Altıntaş  
Publication Year: 2022,Page(s):3965 - 3978  
Cited by: Papers (1)  
HTML

Optimal Discrete Constellation Inputs for Aggregated LiFi-WiFi Networks  
Shuai Ma;Fan Zhang;Songtao Lu;Hang Li;Ruixin Yang;Sihua Shao;Jiaheng Wang;Shiyin Li  
Publication Year: 2022,Page(s):3979 - 3993  
HTML

Dynamic Multichannel Access via Multi-Agent Reinforcement Learning: Throughput and Fairness Guarantees  
Muhammad Sohaib;Jongjin Jeong;Sang-Woon Jeon  
Publication Year: 2022,Page(s):3994 - 4008  
HTML

Cooperative Multigroup Broadcast 360° Video Delivery Network: A Hierarchical Federated Deep Reinforcement Learning Approach  
Fenghe Hu;Yansha Deng;A. Hamid Aghvami  
Publication Year: 2022,Page(s):4009 - 4024  
HTML

Matched-Filter Detector With Quadrature Interference Cancellation for Coded Uplink Multiuser MIMO Systems With Massive IoT Devices  
Yuto Hama;Hideki Ochiai  
Publication Year: 2022,Page(s):4025 - 4038  
HTML

Communicating With Extremely Large-Scale Array/Surface: Unified Modeling and Performance Analysis  
Haiquan Lu;Yong Zeng  
Publication Year: 2022,Page(s):4039 - 4053  
Cited by: Papers (6)  
HTML

On Optimal Power Control for Energy Harvesting Communications With Lookahead  
Ali Zibaeenejad;Shengtian Yang;Jun Chen  
Publication Year: 2022,Page(s):4054 - 4067  
HTML

Joint Channel Estimation and Data Detection in Cell-Free Massive MU-MIMO Systems

Haochuan Song;Tom Goldstein;Xiaohu You;Chuan Zhang;Olav Tirkkonen;Christoph Studer

Publication Year: 2022,Page(s):4068 - 4084

Cited by: Papers (1)

[HTML](#)

Optimal User Pairing and Power Allocation in 5G Satellite Random Access Networks

Bo Zhao;Xiaodai Dong;Guangliang Ren;Jiajia Liu

Publication Year: 2022,Page(s):4085 - 4097

[HTML](#)

Target Localization in Asynchronous Distributed MIMO Radar Systems With a Cooperative Target

Gongjian Wen;Haibo Song;Feng Gao;Yuanyuan Liang;Lingxiao Zhu

Publication Year: 2022,Page(s):4098 - 4113

[HTML](#)

Throughput Maximization for Asynchronous RIS-Aided Hybrid Powered Communication Networks

Shiqi Gong;Shaodan Ma;Ziyi Yang;Chengwen Xing;Jianping An

Publication Year: 2022,Page(s):4114 - 4132

[HTML](#)

Robust Design for Intelligent Reflecting Surface-Assisted Secrecy SWIPT Network

Hehao Niu;Zheng Chu;Fuhui Zhou;Zhengyu Zhu;Li Zhen;Kai-Kit Wong

Publication Year: 2022,Page(s):4133 - 4149

Cited by: Papers (3)

[HTML](#)

Communication Efficient Decentralized Learning Over Bipartite Graphs

Chaouki Ben Issaid;Anis Elgabli;Jihong Park;Mehdi Bennis;Mérrouane Debbah

Publication Year: 2022,Page(s):4150 - 4167

[HTML](#)

Buffer-Aware Scheduling and Power Allocation for CoMP Transmission With Large-Scale Antennas

Yuanrui Liu;Joohyun Lee;Wei Chen

Publication Year: 2022,Page(s):4168 - 4182

[HTML](#)

Design and Analysis of Wideband In-Band-Full-Duplex FR2-IAB Networks

Junkai Zhang;Haifeng Luo;Navneet Garg;Abhijeet Bishnu;Mark Holm;Tharmalingam Ratnarajah

Publication Year: 2022,Page(s):4183 - 4196

Cited by: Papers (2)

[HTML](#)

Multi-User Massive MIMO Visible Light Communications With Limited Pilot Transmission

Omer Narmanlioglu;Murat Uysal

Publication Year: 2022,Page(s):4197 - 4211

[HTML](#)

Real-Time Status Updates in Wireless HARQ With Imperfect Feedback Channel

Shirin Rezasoltani;Chadi Assi

Publication Year: 2022,Page(s):4212 - 4226

[HTML](#)

Satisfaction-Maximized Secure Computation Offloading in Multi-Eavesdropper MEC Networks

Shumei Liu;Yao Yu;Lei Guo;Phee Lep Yeoh;Branka Vucetic;Yonghui Li;Trung Q. Duong

Publication Year: 2022,Page(s):4227 - 4241

[HTML](#)

Pulse Jamming in Aperture-Averaged FSO Receiver Over Exponentiated Weibull Fading Channel

Pratiti Paul;Manav R. Bhatnagar;Jamel Nebhen

Publication Year: 2022,Page(s):4242 - 4254

[HTML](#)

Federated Learning for Channel Estimation in Conventional and RIS-Assisted Massive MIMO

Ahmet M. Elbir;Sinem Coleri

Publication Year: 2022,Page(s):4255 - 4268

[HTML](#)

Robust Localization in Cellular Networks via Reinforced Iterative M-Estimation and Fuzzy Adaptation

Tan-Jan Ho

Publication Year: 2022,Page(s):4269 - 4281

[HTML](#)

LOS/NLOS Near-Field Localization With a Large Reconfigurable Intelligent Surface

Davide Dardari;Nicoló Decarli;Anna Guerra;Francesco Guidi

Publication Year: 2022,Page(s):4282 - 4294

[HTML](#)

Resource Allocation for IRS-Aided JP-CoMP Downlink Cellular Networks With Underlying D2D Communications

Wenhao Wang;Lei Yang;Anqi Meng;Yueying Zhan;Derrick Wing Kwan Ng

Publication Year: 2022,Page(s):4295 - 4309

[HTML](#)

Pricing-Based Deep Reinforcement Learning for Live Video Streaming With Joint User Association and Resource Management in Mobile Edge Computing

Po-Yu Chou;Wei-Yu Chen;Chih-Yu Wang;Ren-Hung Hwang;Wen-Tsuen Chen

Publication Year: 2022,Page(s):4310 - 4324

[HTML](#)

A Non-Stationary 3D Model for 6G Massive MIMO mmWave UAV Channels

Lu Bai;Ziwei Huang;Xi Zhang;Xiang Cheng

Publication Year: 2022,Page(s):4325 - 4339

[HTML](#)

Forgery Attack Detection in Surveillance Video Streams Using Wi-Fi Channel State Information

Yong Huang;Xiang Li;Wei Wang;Tao Jiang;Qian Zhang

Publication Year: 2022,Page(s):4340 - 4349

[HTML](#)

Learning-Based UAV Trajectory Optimization With Collision Avoidance and Connectivity Constraints

Xueyuan Wang;M. Cenk Gursoy

Publication Year: 2022,Page(s):4350 - 4363

[HTML](#)

Unified Performance Analysis of Antenna Selection Schemes for Cooperative MIMO-NOMA With Practical Impairments

Mahmoud Aldababsa;Eray Güven;M. Akif Durmaz;Caner Göztepe;Güneş Karabulut Kurt;Oğuz Kucur

Publication Year: 2022,Page(s):4364 - 4378

[HTML](#)

Full-Duplex Cooperative Rate-Splitting for Multigroup Multicast With SWIPT  
Tiantian Li;Haixia Zhang;Xiaotian Zhou;Dongfeng Yuan  
Publication Year: 2022,Page(s):4379 - 4393  
HTML

Robust Optimization of Instantaneous Beamforming and Quasi-Static Phase Shifts in an IRS-Assisted Multi-Cell Network  
Yuhang Jia;Ying Cui;Wuyang Jiang  
Publication Year: 2022,Page(s):4394 - 4409  
Cited by: Papers (1)  
HTML

OTFS vs. OFDM in the Presence of Sparsity: A Fair Comparison  
Lorenzo Gaudio;Giulio Colavolpe;Giuseppe Caire  
Publication Year: 2022,Page(s):4410 - 4423  
HTML

Sliding Network Coding for URLLC  
Jinho Choi  
Publication Year: 2022,Page(s):4424 - 4433  
Cited by: Papers (1)  
HTML

Joint Optimization of Communications and Federated Learning Over the Air  
Xin Fan;Yue Wang;Yan Huo;Zhi Tian  
Publication Year: 2022,Page(s):4434 - 4449  
Cited by: Papers (3)  
HTML

Adaptive Finite Blocklength for Ultra-Low Latency in Wireless Communications  
Wenchi Cheng;Yuquan Xiao;Shishi Zhang;Jiangzhou Wang  
Publication Year: 2022,Page(s):4450 - 4463  
Cited by: Papers (4)  
HTML

On the Coverage of UAV-Assisted SWIPT Networks With Nonlinear EH Model  
Ruihong Jiang;Ke Xiong;Hong-Chuan Yang;Pingyi Fan;Zhangdui Zhong;Khaled Ben Letaief  
Publication Year: 2022,Page(s):4464 - 4481  
HTML

Differential Modulation in Massive MIMO With Low-Resolution ADCs  
Don-Roberts Emenonye;Carl Dietrich;R. Michael Buehrer  
Publication Year: 2022,Page(s):4482 - 4496  
HTML

Data Sensing and Offloading in Edge Computing Networks: TDMA or NOMA?  
Zezu Liang;Hanbiao Chen;Yuan Liu;Fangjiong Chen  
Publication Year: 2022,Page(s):4497 - 4508  
Cited by: Papers (1)  
HTML

An Irregular Tiled Array Technique for Massive MIMO Systems  
Yankai Ma;Feng Yang;Kejin Chen;Shiwen Yang;Yikai Chen;Shiwei Qu;Jun Hu  
Publication Year: 2022,Page(s):4509 - 4521  
HTML

Joint Power Control and Computation Offloading for Energy-Efficient Mobile Edge Networks  
Fan Wu;Supeng Leng;Sabita Maharjan;Xiaoyan Huang;Yan Zhang  
Publication Year: 2022,Page(s):4522 - 4534  
HTML

Compressive Sensing-Based Power Allocation Optimization for Energy Harvesting IoT Nodes  
Jun Zhang;Guangfei Xie;Guojun Han;Zhu Liang Yu;Zhenghui Gu;Yuanqing Li  
Publication Year: 2022,Page(s):4535 - 4548  
HTML

Performance Analysis and Optimization of Multihop MIMO Relay Networks in Short-Packet Communications  
Ngo Hoang Tu;Kyungchun Lee  
Publication Year: 2022,Page(s):4549 - 4562  
HTML

Message-Passing Receiver Design for Multiuser Multi-Backscatter-Device Symbiotic Radio Communications  
Xiaoyan Kuai;Xiaojun Yuan;Ying-Chang Liang  
Publication Year: 2022,Page(s):4563 - 4578  
HTML

3D Trajectory Optimization for Energy-Efficient UAV Communication: A Control Design Perspective  
Bin Li;Qingliang Li;Yong Zeng;Yue Rong;Rui Zhang  
Publication Year: 2022,Page(s):4579 - 4593  
Cited by: Papers (1)  
HTML

Transceiver Optimization for Wireless Powered Time-Division Duplex MU-MIMO Systems: Non-Robust and Robust Designs  
Bin Li;Meiying Zhang;Yue Rong;Zhu Han  
Publication Year: 2022,Page(s):4594 - 4607  
Cited by: Papers (1)  
HTML

Start of Packet Detection and Synchronization for LoraWAN Modulated Signals  
Lorenzo Vangelista;Alessandro Cattapan  
Publication Year: 2022,Page(s):4608 - 4621  
HTML

Federated Learning Over Multihop Wireless Networks With In-Network Aggregation  
Xianhao Chen;Guangyu Zhu;Yiqin Deng;Yuguang Fang  
Publication Year: 2022,Page(s):4622 - 4634  
HTML

IEEE Communications Society  
Publication Year: 2022,Page(s):C3 - C3  
HTML

# IEEE WIRELESS COMMUNICATIONS LETTERS

A PUBLICATION OF THE IEEE COMMUNICATIONS SOCIETY, THE IEEE SIGNAL PROCESSING SOCIETY, AND THE IEEE VEHICULAR TECHNOLOGY SOCIETY



JUNE 2022

VOLUME 11

NUMBER 6

IWCLAF

ISSN (2162-2345)

## Table of Contents

Publication Year: 2022,Page(s):C1 - C4  
HTML

IEEE Wireless Communications Letters  
Publication Year: 2022,Page(s):C2 - C2  
HTML

Max-Min Energy-Efficient Optimization for Cognitive Heterogeneous Networks With Spectrum Sensing Errors and Channel Uncertainties  
Yongjun Xu;Meng Yang;Yang Yang;Yinghui Ye;Rose Qingyang Hu;Dong Li  
Publication Year: 2022,Page(s):1113 - 1117  
HTML

Heterogeneous Markov Decision Process Model for Joint Resource Allocation and Task Scheduling in Network Slicing Enabled Internet of Vehicles  
Wenjun Wu;Junyu Dong;Yang Sun;Fei Richard Yu  
Publication Year: 2022,Page(s):1118 - 1122  
HTML

An ADMM-Based Optimization Method for URLLC-Enabled UAV Relay System  
Renhai Feng;Zeping Li;Qing Wang;Jianli Huang  
Publication Year: 2022,Page(s):1123 - 1127  
HTML

An Adaptive Network Slice Combination Algorithm Based on Multistep Temporal-Difference Learning  
Guomin Wu;Guoping Tan  
Publication Year: 2022,Page(s):1128 - 1132  
HTML

Reducing Computational Complexity for the 3GPP TR 38.901 MIMO Channel Model  
Egor Endovitskiy;Aleksey Kureev;Evgeny Khorov  
Publication Year: 2022,Page(s):1133 - 1136  
HTML

CSI Fingerprinting for Device-Free Localization: Phase Calibration and SSIM-Based Augmentation  
Wu Wei;Jun Yan;Xiaofu Wu;Chen Wang;Gengxin Zhang  
Publication Year: 2022,Page(s):1137 - 1141  
HTML

6LoWPAN Over Optical Wireless Communications for IPv6 Transport in Internet of Things Networks  
Cheol-Min Kim;Sang-Kyu Lim;Jin-Doo Jeong;Younghwan Choi;Seok-Joo Koh  
Publication Year: 2022,Page(s):1142 - 1145  
HTML

Iterative Pyramidal Filtering Method for Improved Signal Recognition in Radio Spectrograms  
Miguel López-Benítez  
Publication Year: 2022,Page(s):1146 - 1150  
HTML

Spectrum Access Allocation in Vehicular Networks With Intermittently Interrupted Channels  
Thanh-Dat Le;Georges Kaddoum  
Publication Year: 2022,Page(s):1151 - 1155  
HTML

A Novel OTFS System Based on DFrFT-OFDM  
Renikunta Mallaiah;V. V. Mani  
Publication Year: 2022,Page(s):1156 - 1160  
HTML

A Hybrid Training-Time and Run-Time Defense Against Adversarial Attacks in Modulation Classification  
Lu Zhang;Sangarapillai Lambotharan;Gan Zheng;Guisheng Liao;Ambra Demontis;Fabio Roli  
Publication Year: 2022,Page(s):1161 - 1165  
HTML

Interference Exploitation for Ambient Backscatter Communication Networks via Symbol Level Precoding  
Guangyuan Zheng;Miaowen Wen;Yingyang Chen;Shancheng Zhao;Huiqin Du  
Publication Year: 2022,Page(s):1166 - 1170  
HTML

Extended Space Index Modulation  
Fuchun Huang;Dong Li  
Publication Year: 2022,Page(s):1171 - 1175  
HTML

A Generalized DFT Precoded Filter Bank System  
Rogério Pereira Junior;Carlos A. F. da Rocha;Bruno S. Chang;Didier Le Ruyet  
Publication Year: 2022,Page(s):1176 - 1180  
HTML



Leakage Suppression in Pulse-Shaped OTFS Delay-Doppler-Pilot Channel Estimation  
Andreas Pfadler;Tom Szollmann;Peter Jung;Slawomir Stanczak  
Publication Year: 2022,Page(s):1181 - 1185  
HTML

Adaptive Bit/Power Allocation With Beamforming for Dual-Function Radar-Communication  
Tuanwei Tian;Guchong Li;Hao Deng;Jianhua Lu  
Publication Year: 2022,Page(s):1186 - 1190  
HTML

Artificial Noise Aided Secure NOMA Communications in STAR-RIS Networks  
Yi Han;Na Li;Yuanwei Liu;Tong Zhang;Xiaofeng Tao  
Publication Year: 2022,Page(s):1191 - 1195  
HTML

Impacts of User Association and Power Control on Aol in Multi-Tier Cellular-Based IoT Networks  
Hongguang Sun;Huanhuan Shen;Howard H. Yang;Xijun Wang;Jingmin Liu;Shuqin Li;Tony Q. S. Quek  
Publication Year: 2022,Page(s):1196 - 1200  
HTML

Blind Multiple Measurement Vector AMP Based on Expectation Maximization for Grant-Free NOMA  
Takanori Hara;Koji Ishibashi  
Publication Year: 2022,Page(s):1201 - 1205  
HTML

Optimal Constant-Envelope Jamming Waveform Design Against M-QAM Modulation  
Bai Shi;Huaizong Shao;Jingran Lin;Wei Zhang  
Publication Year: 2022,Page(s):1206 - 1210  
HTML

UAV Trajectory and Beamforming Optimization for Integrated Periodic Sensing and Communication  
Kaitao Meng;Qingqing Wu;Shaodan Ma;Wen Chen;Tony Q. S. Quek  
Publication Year: 2022,Page(s):1211 - 1215  
HTML

Spectrum Transaction Games for UAV Assisted Communications  
Dan Wang;Jianhao Huang;Meng He;Chuan Huang  
Publication Year: 2022,Page(s):1216 - 1219  
HTML

Channel Randomness-Based Adaptive Cyclic Prefix Selection for Secure OFDM System  
Sanaz Naderi;Daniel Benevides da Costa;Hüseyin Arslan  
Publication Year: 2022,Page(s):1220 - 1224  
HTML

A Multipath-Aided Localization Method for MIMO-OFDM Systems via Tensor Decomposition  
Yubing Gong;Hanying Zhao;Keke Hu;Qianxi Lu;Yuan Shen  
Publication Year: 2022,Page(s):1225 - 1228  
HTML

Energy-Efficient Resource Allocation and Antenna Selection for IRS-Assisted Multicell Downlink Networks  
Atefeh Rezaei;Ata Khalili;Jalal Jalali;Hossein Shafiei;Qingqing Wu  
Publication Year: 2022,Page(s):1229 - 1233  
HTML

A Novel Hybrid Modulation Scheme for Molecular Communication: Performance Analysis  
Gokul M. Karthiik;Sandeep Joshi  
Publication Year: 2022,Page(s):1234 - 1238  
HTML

A Wireless Power Transfer Assisted NOMA Transmission Scheme for 5G and Beyond mMTC  
Muhammed Burak Goktas;Zhiguo Ding  
Publication Year: 2022,Page(s):1239 - 1242  
HTML

RanNet: Learning Residual-Attention Structure in CNNs for Automatic Modulation Classification  
Thien Huynh-The;Quoc-Viet Pham;Toan-Van Nguyen;Thanh Thi Nguyen;Daniel Benevides da Costa;Dong-Seong Kim  
Publication Year: 2022,Page(s):1243 - 1247  
HTML

Intelligent Passive Eavesdropping in Massive MIMO-OFDM Systems via Reinforcement Learning  
Jiawei Wang;Peng Zhang;Lan Tang;Yechao Bai;Lvxi Yang  
Publication Year: 2022,Page(s):1248 - 1252  
HTML

Covert Threat Region Analysis of 3-D Location-Based Beamforming in Rician Channel  
Yuda Lin;Liang Jin;Kaizhi Huang;Zhou Zhong;Qian Han  
Publication Year: 2022,Page(s):1253 - 1257  
HTML

Compressed Channel Estimation for IRS-Assisted Millimeter Wave OFDM Systems: A Low-Rank Tensor Decomposition-Based Approach  
Xi Zheng;Peilan Wang;Jun Fang;Hongbin Li  
Publication Year: 2022,Page(s):1258 - 1262  
HTML

Machine Learning-Based Vision-Aided Beam Selection for mmWave Multiuser MISO System  
Hyemin Ahn;Igbafe Orikumhi;Jeongwan Kang;Hyunwoo Park;Hyeokyoung Jwa;Jeehyeon Na;Sunwoo Kim  
Publication Year: 2022,Page(s):1263 - 1267  
HTML

A Novel Multitask Learning Empowered Codebook Design for Downlink SCMA Networks  
Qu Luo;Zilong Liu;Gaojie Chen;Yi Ma;Pei Xiao  
Publication Year: 2022,Page(s):1268 - 1272  
HTML

Device Free Localization Using Prior Correction-Based Logistic Regression  
Kyunghyun Lee;Hyeongki Ahn;Kwanho You  
Publication Year: 2022,Page(s):1273 - 1277  
HTML

Robust Beamforming for Localization-Aided Millimeter Wave Communication Systems  
Junchang Sun;Shuai Ma;Shiyin Li;Ruixin Yang;Minghui Min;Gonzalo Seco-Granados  
Publication Year: 2022,Page(s):1278 - 1282  
HTML



Reconfigurable Intelligent Surface With Energy Harvesting Assisted  
Cooperative Ambient Backscatter Communications  
Hui Ma;Haijun Zhang;Ning Zhang;Jianquan Wang;Ning  
Wang;Victor C. M. Leung  
Publication Year: 2022,Page(s):1283 - 1287  
Cited by: Papers (1)  
[HTML](#)

UAV-Assisted Data Collection for Dynamic and Heterogeneous  
Wireless Sensor Networks  
Jie Chen;Jianhua Tang  
Publication Year: 2022,Page(s):1288 - 1292  
[HTML](#)

Energy Aware Multiarmed Bandit for Millimeter Wave-Based UAV  
Mounted RIS Networks  
Ehab Mahmoud Mohamed;Sherief Hashima;Kohei Hatano  
Publication Year: 2022,Page(s):1293 - 1297  
[HTML](#)

A Wasserstein GAN Autoencoder for SCMA Networks  
Luciano Miuccio;Daniela Panno;Salvatore Riolo  
Publication Year: 2022,Page(s):1298 - 1302  
[HTML](#)

VQ-CSMA: Throughput-Optimal Low-Delay Random Access  
Qian Xia;Wei Wang;Lin Chen;Zhaoyang Zhang  
Publication Year: 2022,Page(s):1303 - 1307  
[HTML](#)

IEEE Communications Society Information  
Publication Year: 2022,Page(s):C3 - C3  
[HTML](#)

# IEEE TRANSACTIONS ON MOBILE COMPUTING

A joint publication of the



IEEE Computer Society



IEEE Circuits and Systems Society



IEEE Signal  
Processing Society



IEEE Communications Society

Indexed in ISI

## June 2022

A Force-Directed Approach to Seeking Route Recommendation in Ride-on-Demand Service Using Multi-Source Urban Data  
Suiming Guo;Chao Chen;Jingyuan Wang;Yan Ding;Yaxiao Liu;Ke Xu;Zhiwen Yu;Daqing Zhang  
Publication Year: 2022,Page(s):1909 - 1926  
Cited by: Papers (3)  
HTML

Adaptive Hybrid Model-Enabled Sensing System (HMSS) for Mobile Fine-Grained Air Pollution Estimation  
Xinlei Chen;Susu Xu;Xinyu Liu;Xiangxiang Xu;Hae Young Noh;Lin Zhang;Pei Zhang  
Publication Year: 2022,Page(s):1927 - 1944  
HTML

Beam Learning in MmWave/THz-Band Drone Networks Under In-Flight Mobility Uncertainties  
Sabarish Krishna Moorthy;Zhangyu Guan  
Publication Year: 2022,Page(s):1945 - 1957  
Cited by: Papers (2)  
HTML

Covert Communications in Multi-Channel Slotted ALOHA Systems  
Azadeh Sheikholeslami;Majid Ghaderi;Dennis Goeckel  
Publication Year: 2022,Page(s):1958 - 1971  
Cited by: Papers (1)  
HTML

Data Aggregation Scheduling in Battery-Free Wireless Sensor Networks  
Tongxin Zhu;Jianzhong Li;Hong Gao;Yingshu Li  
Publication Year: 2022,Page(s):1972 - 1984  
HTML

Deep Reinforcement Learning for Task Offloading in Mobile Edge Computing Systems  
Ming Tang;Vincent W.S. Wong  
Publication Year: 2022,Page(s):1985 - 1997  
Cited by: Papers (16)  
HTML

Exploiting big.LITTLE Batteries for Software Defined Management on Mobile Devices  
Zichen Xu;Jie Zhou;Wenli Zheng;Yuhao Wang;Minyi Guo  
Publication Year: 2022,Page(s):1998 - 2012  
HTML

Game Theoretic Multihop D2D Content Sharing: Joint Participants Selection, Routing, and Pricing  
Di Zhang;Yujian Fang;Yuezhi Zhou;Junyi He;Yaoxue Zhang  
Publication Year: 2022,Page(s):2013 - 2028  
HTML

Joint Radio Resource Allocation and Cooperative Caching in PD-NOMA-Based HetNets  
Maryam Moghimi;Abolfazl Zakeri;Mohammad Reza Javan;Nader Mokari;Derrick Wing Kwan Ng  
Publication Year: 2022,Page(s):2029 - 2044  
Cited by: Papers (1)  
HTML

LoRadar: Enabling Concurrent Radar Sensing and LoRa Communication  
Qianyi Huang;Zhiqing Luo;Jin Zhang;Wei Wang;Qian Zhang  
Publication Year: 2022,Page(s):2045 - 2057  
HTML

Multi-Leader Multi-Follower Stackelberg Game in Mobile Blockchain Mining  
Suhan Jiang;Xinyi Li;Jie Wu  
Publication Year: 2022,Page(s):2058 - 2071  
Cited by: Papers (2)  
HTML

Network Localization and Navigation With Scalable Inference and Efficient Operation  
Bryan Teague;Zhenyu Liu;Florian Meyer;Andrea Conti;Moe Z. Win  
Publication Year: 2022,Page(s):2072 - 2087  
Cited by: Papers (3)  
HTML

On Designing Strategy-Proof Budget Feasible Online Mechanisms for Mobile Crowdsensing With Time-Discounting Values  
Zhenzhe Zheng;Shuo Yang;Jiapeng Xie;Fan Wu;Xiaofeng Gao;Guihai Chen  
Publication Year: 2022,Page(s):2088 - 2102  
HTML

Online Task Offloading for 5G Small Cell Networks  
Ruiting Zhou;Xueying Zhang;Shixin Qin;John C.S. Lui;Zhi Zhou;Hao Huang;Zongpeng Li  
Publication Year: 2022,Page(s):2103 - 2115  
Cited by: Papers (1)  
HTML

Online User-AP Association With Predictive Scheduling in Wireless Caching Networks  
Xi Huang;Shuang Zhao;Xin Gao;Ziyu Shao;Hua Qian;Yang Yang  
Publication Year: 2022,Page(s):2116 - 2129  
HTML

Optimized Content Caching and User Association for Edge Computing in Densely Deployed Heterogeneous Networks  
Yun Li;Hui Ma;Lei Wang;Shiwen Mao;Guoyin Wang  
Publication Year: 2022,Page(s):2130 - 2142  
Cited by: Papers (1)  
HTML

Power Adaptation for Enhancing Spectral Efficiency and Energy Efficiency in Multi-Hop Full Duplex Cognitive Wireless Relay Networks  
Poornima S.;A. V. Babu  
Publication Year: 2022,Page(s):2143 - 2157  
HTML

Power Distribution of Device-to-Device Communications Under Nakagami Fading Channel  
Adil Boumaalif;Ouadoudi Zytoune  
Publication Year: 2022,Page(s):2158 - 2167  
HTML

Robust Low-Overhead RF-Based Localization for Realistic Environments  
Rizanne Elbakly;Moustafa Youssef  
Publication Year: 2022,Page(s):2168 - 2179  
HTML

ROSE: Robustly Safe Charging for Wireless Power Transfer  
Haipeng Dai;Yun Xu;Guihai Chen;Wanchun Dou;Chen Tian;Xiaobing Wu;Tian He  
Publication Year: 2022,Page(s):2180 - 2197  
HTML

Simultaneous Energy Harvesting and Gait Recognition Using Piezoelectric Energy Harvester  
Dong Ma;Guohao Lan;Weitao Xu;Mahbub Hassan;Wen Hu  
Publication Year: 2022,Page(s):2198 - 2209  
Cited by: Papers (1)  
HTML

SpeedTalker: Automobile Speed Estimation via Mobile Phones  
Xinran Lu;Lei Xie;Yafeng Yin;Wei Wang;Yanling Bu;Qing Guo;Sanglu Lu  
Publication Year: 2022,Page(s):2210 - 2227  
HTML

STMARL: A Spatio-Temporal Multi-Agent Reinforcement Learning Approach for Cooperative Traffic Light Control  
Yanan Wang;Tong Xu;Xin Niu;Chang Tan;Enhong Chen;Hui Xiong  
Publication Year: 2022,Page(s):2228 - 2242  
Cited by: Papers (3)  
HTML

Trace-Driven Optimization on Bitrate Adaptation for Mobile Video Streaming  
Chunyu Qiao;Gen Li;Qiang Ma;Jiliang Wang;Yunhao Liu  
Publication Year: 2022,Page(s):2243 - 2256  
HTML

Using Truth Detection to Incentivize Workers in Mobile Crowdsourcing  
Chao Huang;Haoran Yu;Randall A Berry;Jianwei Huang  
Publication Year: 2022,Page(s):2257 - 2270  
Cited by: Papers (1)  
HTML

Wireless Powered Mobile Edge Computing: Dynamic Resource Allocation and Throughput Maximization  
Xiumei Deng;Jun Li;Long Shi;Zhiqiang Wei;Xiaobo Zhou;Jinhong Yuan  
Publication Year: 2022,Page(s):2271 - 2288  
Cited by: Papers (7)  
HTML

# Networking

**Table of Contents**

Publication Year: 2022,Page(s):C1 - C4  
HTML

**IEEE/ACM Transactions on Networking Publication Information**

Publication Year: 2022,Page(s):C2 - C2  
HTML

**Accelerating Reads With In-Network Consistency-Aware Load Balancing**

Ibrahim Kettaneh;Ahmed Alquraan;Hatem Takruri;Ali José Mashtizadeh;Samer Al-Kiswany  
Publication Year: 2022,Page(s):954 - 968  
HTML

**Maintaining Control Resiliency and Flow Programmability in Software-Defined WANs During Controller Failures**

Zehua Guo;Songshi Dou;Sen Liu;Wendi Feng;Wenchao Jiang;Yang Xu;Zhi-Li Zhang  
Publication Year: 2022,Page(s):969 - 984  
HTML

**Optimal Weighted Load Balancing in TCAMs**

Yaniv Sadeh;Ori Rottenstreich;Haim Kaplan  
Publication Year: 2022,Page(s):985 - 998  
HTML

**NetKernel: Making Network Stack Part of the Virtualized Infrastructure**

Zhixiong Niu;Qiang Su;Peng Cheng;Yongqiang Xiong;Dongsu Han;Keith Winstein;Chun Jason Xue;Hong Xu  
Publication Year: 2022,Page(s):999 - 1013  
HTML

**CoShare: An Efficient Approach for Redundancy Allocation in NFV**

Yordanos Tibebe Woldeyohannes;Besmir Tola;Yuming Jiang;K. K. Ramakrishnan  
Publication Year: 2022,Page(s):1014 - 1028  
HTML

**PPVC: Online Learning Toward Optimized Video Content Caching**

Zhengkai Shi;Yipeng Zhou;Di Wu;Chen Wang  
Publication Year: 2022,Page(s):1029 - 1044  
HTML

**On Packet Reordering in Time-Sensitive Networks**

Ehsan Mohammadpour;Jean-Yves Le Boudec  
Publication Year: 2022,Page(s):1045 - 1057  
HTML

**DECO: Joint Computation Scheduling, Caching, and Communication in Data-Intensive Computing Networks**

Khashayar Kamran;Edmund Yeh;Qian Ma  
Publication Year: 2022,Page(s):1058 - 1072  
HTML

**A Computational Approach to Packet Classification**

Alon Rashelbach;Ori Rottenstreich;Mark Silberstein  
Publication Year: 2022,Page(s):1073 - 1087  
HTML

**Compiling Cross-Language Network Programs Into Hybrid Data Plane**

Hao Li;Peng Zhang;Guangda Sun;Wanyue Cao;Chengchen Hu;Danfeng Shan;Tian Pan;Qiang Fu  
Publication Year: 2022,Page(s):1088 - 1103  
HTML

**Combating Packet Collisions Using Non-Stationary Signal Scaling in LPWANs**

Shuai Tong;Jiliang Wang;Yunhao Liu  
Publication Year: 2022,Page(s):1104 - 1117  
HTML

**Time-Efficient Range Detection in Commodity RFID Systems**

Jia Liu;Xi Yu;Xuan Liu;Xingyu Chen;Haisong Liu;Yanyan Wang;Lijun Chen  
Publication Year: 2022,Page(s):1118 - 1131  
HTML

**Optimal Caching for Low Latency in Distributed Coded Storage Systems**

Kaiyang Liu;Jun Peng;Jingrong Wang;Jianping Pan  
Publication Year: 2022,Page(s):1132 - 1145  
HTML

**A Robust Service Mapping Scheme for Multi-Tenant Clouds**

Jingzhou Wang;Gongming Zhao;Hongli Xu;Yutong Zhai;Qianyu Zhang;He Huang;Yongqiang Yang  
Publication Year: 2022,Page(s):1146 - 1161  
HTML

**Network Traffic Shaping for Enhancing Privacy in IoT Systems**

Sijie Xiong;Anand D. Sarwate;Narayan B. Mandayam  
Publication Year: 2022,Page(s):1162 - 1177  
Cited by: Papers (1)  
HTML

**Towards Automatic Root Cause Diagnosis of Persistent Packet Loss in Cloud Overlay Network**

Chongrong Fang;Haoyu Liu;Mao Miao;Jie Ye;Lei Wang;Wansheng Zhang;Daxiang Kang;Biao Lyu;Shunmin Zhu;Peng Cheng;Jiming Chen  
Publication Year: 2022,Page(s):1178 - 1192  
HTML

**Downlink Transmission Scheduling With Data Sharing**

Hehuan Shi;Lin Chen  
Publication Year: 2022,Page(s):1193 - 1202  
HTML

**Minimizing Aol With Throughput Requirements in Multi-Path Network Communication**

Qingyu Liu;Haibo Zeng;Minghua Chen  
Publication Year: 2022,Page(s):1203 - 1216  
HTML

Leveraging a Probabilistic PCA Model to Understand the Multivariate Statistical Network Monitoring Framework for Network Security Anomaly Detection  
Fernando Pérez-Bueno;Luz García;Gabriel Maciá-Fernández;Rafael Molina  
Publication Year: 2022,Page(s):1217 - 1229  
HTML

A Robustness-Aware Real-Time SFC Routing Update Scheme in Multi-Tenant Clouds  
Huaqing Tu;Gongming Zhao;Hongli Xu;Yangming Zhao;Yutong Zhai  
Publication Year: 2022,Page(s):1230 - 1244  
HTML

From Spectrum Bonding to Contiguous-Resource Batching Task Scheduling  
Hehuan Shi;Lin Chen  
Publication Year: 2022,Page(s):1245 - 1254  
HTML

Deep Transfer Learning Across Cities for Mobile Traffic Prediction  
Qiong Wu;Kaiwen He;Xu Chen;Shuai Yu;Junshan Zhang  
Publication Year: 2022,Page(s):1255 - 1267  
HTML

Hybrid NOMA in Multi-Cell Networks: From a Centralized Analysis to Practical Schemes  
Abdalla Hussein;Catherine Rosenberg;Patrick Mitran  
Publication Year: 2022,Page(s):1268 - 1282  
HTML

Event-Triggered Control for Network-Based Switched Systems With Switching Signals Subject to Dual-Terminal DoS Attacks  
Yiwen Qi;Wenke Yu;Xudong Zhao;Xindi Xu  
Publication Year: 2022,Page(s):1283 - 1293  
HTML

Adversarial Attacks Against Deep Learning-Based Network Intrusion Detection Systems and Defense Mechanisms  
Chaoyun Zhang;Xavier Costa-Pérez;Paul Patras  
Publication Year: 2022,Page(s):1294 - 1311  
HTML

Privacy-Aware Online Social Networking With Targeted Advertisement  
Guocheng Liao;Xu Chen;Jianwei Huang  
Publication Year: 2022,Page(s):1312 - 1327  
HTML

Quantum Network: Security Assessment and Key Management  
Hongyi Zhou;Kefan Lv;Longbo Huang;Xiongfeng Ma  
Publication Year: 2022,Page(s):1328 - 1339  
HTML

Privacy-Aware Participant Recruitment in Opportunistic Device to Device Networks  
Yanyan Han;Hongyi Wu  
Publication Year: 2022,Page(s):1340 - 1351  
HTML

PPQC: A Blockchain-Based Privacy-Preserving Quality Control Mechanism in Crowdsensing Applications  
Jian An;Zhenxing Wang;Xin He;Xiaolin Gui;Jindong Cheng;Ruowei Gui  
Publication Year: 2022,Page(s):1352 - 1367  
HTML

Approximate and Deployable Shortest Remaining Processing Time Scheduler  
Zhiyuan Wang;Jiancheng Ye;Dong Lin;Yipei Chen;John C. S. Lui  
Publication Year: 2022,Page(s):1368 - 1381  
HTML

On Cost-Efficient Learning of Data Dependency  
Hyeryung Jang;Hyungseok Song;Yung Yi  
Publication Year: 2022,Page(s):1382 - 1394  
HTML

TurboNet: Faithfully Emulating Networks With Programmable Switches  
Jiamin Cao;Ying Liu;Yu Zhou;Lin He;Mingwei Xu  
Publication Year: 2022,Page(s):1395 - 1409  
HTML

A Framework for Policy Inconsistency Detection in Software-Defined Networks  
Seungsoo Lee;Seungwon Woo;Jinwoo Kim;Jaehyun Nam;Vinod Yegneswaran;Phillip Porras;Seungwon Shin  
Publication Year: 2022,Page(s):1410 - 1423  
HTML

Continuous Network Update With Consistency Guaranteed in Software-Defined Networks  
Xin He;Jiaqi Zheng;Haipeng Dai;Chong Zhang;Geng Li;Wanchun Dou;Wajid Rafique;Qiang Ni;Guihai Chen  
Publication Year: 2022,Page(s):1424 - 1438  
HTML

IEEE/ACM Transactions on Networking Information for Authors  
Publication Year: 2022,Page(s):1439 - 1439  
HTML

Publication Year: 2022,Page(s):C3 - C3  
HTML

# JOURNAL OF Optical Communications and Networking

## Front Cover

Publication Year: 2022,Page(s):C1 - C1

## Inside Front Cover

Publication Year: 2022,Page(s):C2 - C2

## Contents

Publication Year: 2022,Page(s):1 - 1

## Introduction to the ECOC 2021 Special Issue

Jean-Pierre Hamaide;Christian Lermiaux;Philippe Chanclou;Pierre Sillard

Publication Year: 2022,Page(s):ECOC1 - ECOC1

## Toward higher-radix switches with co-packaged optics for improved network locality in data center and HPC networks [Invited]

Pavlos Maniotis;Laurent Schares;Daniel M. Kuchta;Bengi Karacali

Publication Year: 2022,Page(s):C1 - C10

## Operator view on optical transport network automation in a multi-vendor context [Invited]

Esther Le Rouzic;Olivier Renais;Julien Meuric;Thierry Marcot;Christophe Betoule;Gilles Thouenon;Ahmed Triki;Maxime Laye;Nicolas Pelloquin;Yannick Lagadec;Emmanuelle Delfour;Matthias Ermel;Jens Dost;Stefan Turk

Publication Year: 2022,Page(s):C11 - C22

## Advances in SDN control and telemetry for beyond 100G disaggregated optical networks [Invited]

Ramon Casellas;Ricardo Martinez;Ricard Vilalta;Raul Munoz;Alfredo Gonzalez-Muniz;Oscar Gonzalez de Dios;Juan-Pedro Fernandez-Palacios

Publication Year: 2022,Page(s):C23 - C37

## Disaggregation and cloudification of metropolitan area networks: enabling technologies and impact on architecture, cost, and power consumption [Invited]

Marco Quagliotti;Laura Serra;Annachiara Pagano;Panos Groumas;Paraskevas Bakopoulos;Hercules Avramopoulos

Publication Year: 2022,Page(s):C38 - C49

## Benefits of quasi-continuous symbol rate tunability in links constrained by ROADM filtering

Steven Searcy;Thomas Richter;Sergey Burtsev;Sorin Tibuleac

Publication Year: 2022,Page(s):C50 - C56

## Optical access evolutions towards SDN and disaggregated hardware: an operator perspective [Invited]

Gael Simon;Philippe Chanclou;Minqi Wang;Daniel Abgrall;David Minodier

Publication Year: 2022,Page(s):C57 - C69

## Deep learning-based real-time analysis of lightpath optical constellations [Invited]

M. Ruiz;D. Sequeira;L. Velasco

Publication Year: 2022,Page(s):C70 - C81

## FLCS-PON—an opportunistic 100 Gbit/s flexible PON prototype with probabilistic shaping and soft-input FEC: operator trial and ODN case studies

Robert Borkowski;Yannick Lefevre;Amitkumar Mahadevan;Doutje van Veen;Michael Straub;Ralph Kaptur;Bjorn Czerwinski;Bruno Cornaglia;Vincent Houtsma;Werner Coomans;Rene Bonk;Jochen Maes

Publication Year: 2022,Page(s):C82 - C91

## GNPy model of the physical layer for open and disaggregated optical networking [Invited]

Vittorio Curri

Publication Year: 2022,Page(s):C92 - C104

## Outage probability analysis of a vertical underwater wireless optical link subject to oceanic turbulence and pointing errors

Ikenna Chinazaekpere Ijeh;Mohammad Ali Khalighi;Mohammed Elamassie;Steve Hranilovic;Murat Uysal

Publication Year: 2022,Page(s):439 - 453

## Performance trade-offs in reconfigurable networks for HPC

Min Yee Teh;Zhenguo Wu;Madeleine Glick;Sebastien Rumley;Manya Ghobadi;Keren Bergman

Publication Year: 2022,Page(s):454 - 468

## Supervised graph convolution networks for OSNR and power estimation in optical mesh networks

Anurag Prakash;Subrat Kar

Publication Year: 2022,Page(s):469 - 480

## Colorless, partially directionless, and contentionless architecture for high-degree ROADMs

Yongcheng Li;Jieming Lin;Liangjia Zong;Sanjay K. Bose;Biswanath Mukherjee;Gangxiang Shen

Publication Year: 2022,Page(s):481 - 492

## Advanced architectures for high-performance quantum networking

Muneer Alshowkan;Philip G. Evans;Brian P. Williams;Nageswara S. V. Rao;Claire E. Marvinney;Yun-Yi Pai;Benjamin J. Lawrie;Nicholas A. Peters;Joseph M. Lukens

Publication Year: 2022,Page(s):493 - 499



Networks and  
Switching

Systems and  
Subsystems

Optical Waveguides  
and Components

# Journal of Lightwave Technology

*This Print Collection Contains the Following Issues:*

May	1, 2022	Volume 40	Number 9	JLTEDG
May	15, 2022	Volume 40	Number 10	
June	1, 2022	Volume 40	Number 11	
June	15, 2022	Volume 40	Number 12	

## May 1

Frontcover

Publication Year: 2022,Page(s):C1 - C1  
HTML

Journal of Lightwave Technology

Publication Year: 2022,Page(s):C2 - C2  
HTML

Table of Contents

Publication Year: 2022,Page(s):2681 - 2683  
HTML

A Meta-Learning-Assisted Training Framework for Physical Layer Modeling in Optical Networks

Xiaomin Liu;Huazhi Lun;Lei Liu;Yihao Zhang;Yichen Liu;Lilin Yi;Weisheng Hu;Qunbi Zhuge

Publication Year: 2022,Page(s):2684 - 2695  
HTML

Integrated Tunable Sideband Suppressor for Optical Carrier Reuse in Millimeter-Wave Radio-Over-Fiber Transmission

Yi-Hsuan Chen;Kuan-Heng Chen;Jih-Heng Yan;The Anh Nguyen;Kai-Ming Feng;Ming-Chang M. Lee

Publication Year: 2022,Page(s):2696 - 2702  
HTML

Scalar Superposed Coded Modulation in the Multiple-Input-Single-Output Visible Light Communication System

Yiheng Zhao;Peng Zou;Fangchen Hu;Junwen Zhang;Shaohua Yu;Nan Chi

Publication Year: 2022,Page(s):2703 - 2709  
HTML

Novel Phase and CFO Estimation DSP for Photonics-Based Sub-Thz Communication

Hae Young Rha;Sang-Rok Moon;Joon Ki Lee;Seung-Hyun Cho

Publication Year: 2022,Page(s):2710 - 2716

HTML

Robust Photonic Terahertz Vector Imaging Scheme Using an Optical Frequency Comb

Zuomin Yang;Lu Zhang;Zijie Lu;Hongqi Zhang;Shiwei Wang;Le Zhang;Xianbin Yu

Publication Year: 2022,Page(s):2717 - 2723

HTML

Microwave Phase Detector Based on Optical Frequency Translation and Downconversion

Chongjia Huang;Erwin H. W. Chan

Publication Year: 2022,Page(s):2724 - 2730

HTML

Integrated High-Resolution Radar and Long-Distance Communication Based-on Photonic in Terahertz Band

Yanyi Wang;Weiping Li;Junjie Ding;Jiao Zhang;Min Zhu;Feng Zhao;Mingxu Wang;Jianjun Yu

Publication Year: 2022,Page(s):2731 - 2738

HTML

Synchronized Laser Modules With Frequency Offset up to 50 GHz for Ultra-Accurate Long-Distance Fiber Optic Time Transfer Links

Łukasz Śliwaczyński;Przemysław Krehlik;Łukasz Buczek;Harald Schnatz

Publication Year: 2022,Page(s):2739 - 2747

HTML

Photonic Microwave Frequency Measurement With High Accuracy and Sub-MHz Resolution

Karanveer Singh;Stefan Preußler;Arijit Misra;Linjie Zhou;Thomas Schneider

Publication Year: 2022,Page(s):2748 - 2753

HTML

Injection Locking of Optoelectronic Oscillators With Large Delay  
Mehedi Hasan;Abhijit Banerjee;Trevor James Hall  
Publication Year: 2022,Page(s):2754 - 2762  
HTML

Fully Integrated FMCW LiDAR Optical Engine on a Single Silicon Chip  
Keyvan Sayyah;Raymond Sarkissian;Pamela Patterson;Biqin Huang;Oleg Efimov;Danny Kim;Ken Elliott;Louis Yang;David Hammon  
Publication Year: 2022,Page(s):2763 - 2772  
HTML

Complementary Polarization-Diversity Coherent Receiver for Self-Coherent Homodyne Detection With Rapid Polarization Tracking  
Honglin Ji;Jingchi Li;Xingfeng Li;Shuangyu Dong;Zhaopeng Xu;Yikai Su;William Shieh  
Publication Year: 2022,Page(s):2773 - 2779  
Cited by: Papers (1)  
HTML

An SNR-improved Transmitter of Delta-sigma Modulation Supported Ultra-High-Order QAM Signal for Fronthaul/WiFi Applications  
Linsheng Zhong;Yang Zou;Shenmao Zhang;Xiaoxiao Dai;Jing Zhang;Mengfan Cheng;Lei Deng;Qi Yang;Deming Liu  
Publication Year: 2022,Page(s):2780 - 2790  
HTML

Complex-Valued 2D-CNN Equalization for OFDM Signals in a Photonics-Aided MMW Communication System at the D-Band  
Kaihui Wang;Chen Wang;Weiping Li;Yanyi Wang;Junjie Ding;Cuiwei Liu;Miao Kong;Feng Wang;Wen Zhou;Feng Zhao;Jianjun Yu  
Publication Year: 2022,Page(s):2791 - 2798  
HTML

Non-Orthogonal DMT Enabled by Iterative ICI Cancellation Algorithm for Bandwidth-Limited IM/DD Optical Systems  
Shuangyue Liu;Ji Zhou;Haide Wang;Xizi Tang;Mengqi Guo;Han Cui;Yueming Lu;Yaojun Qiao  
Publication Year: 2022,Page(s):2799 - 2806  
HTML

End-to-End Deep Learning for Long-haul Fiber Transmission Using Differentiable Surrogate Channel  
Zekun Niu;Hang Yang;Haochen Zhao;Chenhao Dai;Weisheng Hu;Lilin Yi  
Publication Year: 2022,Page(s):2807 - 2822  
HTML

Characterization of Burst-Mode Links for Optical Circuit Switching  
Jason Kelley;Alex Forencich;George C. Papen;William M. Mellette  
Publication Year: 2022,Page(s):2823 - 2829  
HTML

800-Gb/s/carrier WDM Coherent Transmission Over 2000 km Based on Truncated PS-64QAM Utilizing MIMO Volterra Equalizer  
Miao Kong;Junting Shi;Bohan Sang;Junjie Ding;Kaihui Wang;Weiping Li;Feng Wang;Cuiwei Liu;Yanyi Wang;Yiran Wei;Bowen Zhu;Li Zhao;Wen Zhou;Jianjun Yu  
Publication Year: 2022,Page(s):2830 - 2839  
HTML

Modified Gerchberg-Saxton Algorithm Based Electrical Dispersion Pre-Compensation for Intensity-modulation and Direct-detection Systems  
Dongdong Zou;Fan Li;Wei Wang;Mingzhu Yin;Qi Sui;Zhaohui Li  
Publication Year: 2022,Page(s):2840 - 2849  
HTML

XPM Efficiency Versus Symbol Rate  
Arthur J. Lowery;Liang B. Y. Du  
Publication Year: 2022,Page(s):2850 - 2861  
HTML

An RF-Source-Free Reconfigurable Microwave Photonic Radar With High-Resolution and Fast Detection Capability  
Pei Zhou;Renheng Zhang;Nianqiang Li;Zhidong Jiang;Shilong Pan  
Publication Year: 2022,Page(s):2862 - 2869  
Cited by: Papers (1)  
HTML

Multi-Dimensional Distribution Matching With Bit-Level Shaping for Probabilistically Shaped High Order Modulation Formats  
Mengfan Fu;Qiaoya Liu;Yicheng Xu;Hexun Jiang;Xiaobo Zeng;Yiwen Wu;Lilin Yi;Weisheng Hu;Qunbi Zhuge  
Publication Year: 2022,Page(s):2870 - 2879  
HTML

Convolutional Neural Network-Aided DP-64 QAM Coherent Optical Communication Systems  
Chao Li;Yongjun Wang;Jingjing Wang;Haipeng Yao;Xinyu Liu;Ran Gao;Leijing Yang;Hui Xu;Qi Zhang;Pengjie Ma;Xiangjun Xin  
Publication Year: 2022,Page(s):2880 - 2889  
HTML

Low Complexity Neural Network Equalization Based on Multi-Symbol Output Technique for 200+ Gbps IM/DD Short Reach Optical System  
Bohan Sang;Wen Zhou;Yuxuan Tan;Miao Kong;Chen Wang;Mingxu Wang;Li Zhao;Jiao Zhang;Jianjun Yu  
Publication Year: 2022,Page(s):2890 - 2900  
HTML

Photonic Spiking Neural Networks and Graphene-on-Silicon Spiking Neurons  
Aashu Jha;Chaoran Huang;Hsuan-Tung Peng;Bhavin Shastri;Paul R. Prucnal  
Publication Year: 2022,Page(s):2901 - 2914  
HTML

Fabrication of Y-Branched GI Core Polymer Waveguide and its Application to CWDM MUX Device for Multimode Fiber  
Ryosuke Hatai;Fukino Nakazaki;Tomoki Nakayama;Takaaki Ishigure  
Publication Year: 2022,Page(s):2915 - 2925  
HTML

Inverse Design of High-Dimensional Nanostructured 2x2 Optical Processors Based On Deep Convolutional Neural Networks  
Simei Mao;Lirong Cheng;Fasial Nadeem Khan;Zihan Geng;Qian Li;H. Y. Fu  
Publication Year: 2022,Page(s):2926 - 2932  
HTML

Stable Lateral Far Field of Highly Dense Arrays of Uncoupled Narrow Stripe Ridge Waveguide 1060 nm Lasers  
Sergey O. Slipchenko;Ilya S. Shashkin;Dmitry A. Veselov;Vladislav A. Kriychkov;Alyona E. Kazakova;Andrey Yu Leshko;Viktor V. Shamakhov;Dmitry N. Nikolaev;Nikita A. Pikhtin  
Publication Year: 2022,Page(s):2933 - 2938  
HTML

Low Driving Voltage and Low Optical Loss Electro-Optic Modulators Based on Lead Zirconate Titanate Thin Film on Silicon Substrate  
Dasai Ban;Guolei Liu;Hongyan Yu;Yingchun Wu;Feng Qiu  
Publication Year: 2022,Page(s):2939 - 2943  
HTML

A Modified Equivalent Circuit Model for High-Speed InGaAs/InAlAs Avalanche Photodiodes  
Rui Wang; Xiaohong Yang; Hui Wang; Tingting He; Yongsheng Tang  
Publication Year: 2022, Page(s): 2944 - 2951  
[HTML](#)

Low Threshold GaN-Based Microdisk Lasers on Silicon With High Q Factor  
Yang Mei; Minchao Xie; Hao Long; Leiying Ying; Baoping Zhang  
Publication Year: 2022, Page(s): 2952 - 2958  
[HTML](#)

Efficient Second-Harmonic Generation in Si-GaP Asymmetric Coupled-Quantum-Well Waveguides  
Francesco De Leonardis; Richard A. Soref  
Publication Year: 2022, Page(s): 2959 - 2964  
[HTML](#)

Difference-Frequency Generation of Random Fiber Lasers for Broadly Tunable Mid-Infrared Continuous-Wave Random Lasing Generation  
Han Wu; Weizhe Wang; Yang Li; Chunxiao Li; Jiyong Yao; Zinan Wang; Houkun Liang  
Publication Year: 2022, Page(s): 2965 - 2970  
Cited by: Papers (1)  
[HTML](#)

Tunable Narrow-Linewidth Fiber Laser Based on the Acoustically Controlled Polarization Conversion in Dispersion Compensation Fiber  
Yujia Li; Laiyang Dang; Ligang Huang; Tianyi Lan; Haonan Han; Lei Gao; Yulong Cao; Fuhui Li; Lidan Jiang; Guolu Yin; Paul Ikehukwu Iroegbu; Tao Zhu  
Publication Year: 2022, Page(s): 2971 - 2979  
[HTML](#)

Fast Multi Step-Index Mode Solver for Analysis and Optimization of Optical Fiber Performance  
Pavel S. Anisimov; Vasily S. Motolygin; Viacheslav V. Zemlyakov; Jiexing Gao  
Publication Year: 2022, Page(s): 2980 - 2987  
[HTML](#)

Stabilized Narrow-Linewidth Brillouin Random Fiber Laser With a Double-Coupler Fiber Ring Resonator  
Yuxi Pang; Yanping Xu; Xian Zhao; Zengguang Qin; Zhaojun Liu  
Publication Year: 2022, Page(s): 2988 - 2995  
[HTML](#)

Dynamic Demodulation of Low-Finesse Fabry-Perot Sensors Based on Instantaneous Frequency Analysis  
Yuru Chen; Xiaohua Lei; Peng Zhang; Xianming Liu; Wei Zhang; Bin Shao; Hao Liu  
Publication Year: 2022, Page(s): 2996 - 3002  
[HTML](#)

Comparison Between Time Shifting Deviation and Cross-Correlation Methods  
Zhongwang Pang; Guan Wang; Bo Wang; Lijun Wang  
Publication Year: 2022, Page(s): 3003 - 3009  
[HTML](#)

Optical Fiber Thermal Anemometer With Light Source-Heated Fabry-Perot Interferometer  
Jiarui Zhang; Xinyong Dong; Pengbai Xu; Dajuan Lv; Jun Yang; Yuwen Qin  
Publication Year: 2022, Page(s): 3010 - 3015  
[HTML](#)

Modulator Coefficient Tracking Method of Resonant Integrated Optical Gyroscope Based on Novel Four-State Modulation  
Fei Guo; Rui Zhao; Hui Li; Changkun Feng; Chen Wen; Lishuang Feng  
Publication Year: 2022, Page(s): 3016 - 3021  
[HTML](#)

MI-SI Based Distributed Optical Fiber Sensor for No-Blind Zone Location and Pattern Recognition  
Yixiao Ma; Yuchen Song; Qiuhe Song; Qian Xiao; Bo Jia  
Publication Year: 2022, Page(s): 3022 - 3030  
[HTML](#)

Through Over-Clad Inscription of FBG in CYTOP Optical Fiber Using Phase Mask Technique and 400 nm Femtosecond Pulsed Laser  
Ying-Gang Nan; Ivan Chapalo; Karima Chah; Xuehao Hu; Patrice Mégret  
Publication Year: 2022, Page(s): 3031 - 3037  
Cited by: Papers (1)  
[HTML](#)

Dynamic Range Enlargement of Distributed Acoustic Sensing Based on Temporal Differential and Weighted-Gauge Approach  
Yichang Wu; Zihan Cao; Shengqi Zhang; Zhengyong Liu; Chengkun Yang; Qi Sui; Zhaohui Li  
Publication Year: 2022, Page(s): 3038 - 3045  
[HTML](#)

Machine Learning Approach to Data Processing of TFBG-Assisted SPR Sensors  
Eugeny D. Chubchev; Kirill A. Tomyshev; Igor A. Nechepurenko; Alexander V. Dorofeenko; Oleg V. Butov  
Publication Year: 2022, Page(s): 3046 - 3054  
[HTML](#)

Highly Sensitive Integrated Photonic Sensor and Interrogator Using Cascaded Silicon Microring Resonators  
Fan Yang; Wenjia Zhang; Yue Jiang; Jifang Tao; Zuyuan He  
Publication Year: 2022, Page(s): 3055 - 3061  
[HTML](#)

Ultra-Low-Noise MIMO Distributed Acoustic Sensor Using Few-Mode Optical Fibers  
Bin Lu; Jinfeng Gu; Zhaoyong Wang; Lei Ye; Yifan Liu; Junqi Yang; Bingyan Wu; Qing Ye; Ronghui Qu; Haiwen Cai  
Publication Year: 2022, Page(s): 3062 - 3071  
[HTML](#)

Improved Generalization in Signal Identification With Unsupervised Spiking Neuron Networks for Fiber-Optic Distributed Acoustic Sensor  
Huijuan Wu; Dengke Gan; Chenrui Xu; Yimeng Liu; Xinyu Liu; Yuanfeng Song; Yunjiang Rao  
Publication Year: 2022, Page(s): 3072 - 3083  
[HTML](#)

Ultra-Compact Full-Angle-Range Direction-Distinguishable Tilt Sensor Based on Fiber in-Line Polymer Microcavity  
Changpeng Lang; Jiandong Zhu; Yi Liu; Yan Li; Shiliang Qu  
Publication Year: 2022, Page(s): 3084 - 3089  
[HTML](#)

Experimental Study on Dual-Parameter Sensing Based on Cascaded Sagnac Interferometers With Two PANDA Fibers  
Yundong Liu; Hailiang Chen; Qiang Chen; Baocheng Li; Shuguang Li  
Publication Year: 2022, Page(s): 3090 - 3097  
[HTML](#)

A Differential Intensity-Modulated Refractive Index Sensor Using a Droplet-Like Fiber Cascaded With FBGs  
Haoran Wang; Jian Luo; Weiyu Dai; Sijie Chen; Hongyan Fu  
Publication Year: 2022, Page(s): 3098 - 3103  
[HTML](#)

Wideband Remote-Sensing Based on Random Fiber Laser  
Shengtao Lin; Zinan Wang; Yifei Qi; Bing Han; Han Wu; Yunjiang Rao  
Publication Year: 2022, Page(s): 3104 - 3110  
Cited by: [Papers \(1\)](#)  
[HTML](#)

Corrections to "Integrated Solutions for Deployment of 6G Mobile Networks" [Jan 22 346-357]  
T. Sizer; D. Samardzija; H. Viswanathan; S. T. Le; S. Bidkar; P. Dom; E. Harstead; Th. Pfeiffer  
Publication Year: 2022, Page(s): 3111 - 3111  
[HTML](#)

Announcing an Issue  
Publication Year: 2022, Page(s): 3112 - 3112  
[HTML](#)

TechRxiv: Share Your Preprint Research with the World!  
Publication Year: 2022, Page(s): 3113 - 3113  
[HTML](#)

Information for Authors  
Publication Year: 2022, Page(s): C3 - C3  
[HTML](#)

Blank page  
Publication Year: 2022, Page(s): C4 - C4  
[HTML](#)

## May 15

Frontcover  
Publication Year: 2022, Page(s): C1 - C1  
[HTML](#)

Journal of Lightwave Technology  
Publication Year: 2022, Page(s): C2 - C2  
[HTML](#)

Table of Contents  
Publication Year: 2022, Page(s): 3112 - 3113  
[HTML](#)

Editorial ECOC2021 – JLT Special Issue  
Jean-Pierre Hamaide; Christian Lermiaux; Philippe Chanclou; Pierre Sillard  
Publication Year: 2022, Page(s): 3114 - 3114  
[HTML](#)

Machine-Learning-Based Lightpath QoT Estimation and Forecasting  
Stéphanie Allogba; Sandra Aladin; Christine Tremblay  
Publication Year: 2022, Page(s): 3115 - 3127  
[HTML](#)

Progresses of Pilot Tone Based Optical Performance Monitoring in Coherent Systems  
Zhiping Jiang; Xuefeng Tang; Simin Wang; Ge Gao; Dajiang Jin; Jianfeng Wang; Minggang Si  
Publication Year: 2022, Page(s): 3128 - 3136  
Cited by: [Papers \(1\)](#)  
[HTML](#)

Bulk-Si Platform: Born for DRAM, Upgraded With On-Chip Lasers, and Transplanted to LiDAR  
Dongjae Shin; Hyunil Byun; Dongshik Shim; Jungho Cha; Yonghwaek Shin; Changg Yun Shin; Changbum Lee; Eunkyung Lee; Bongyong Jang; Jisan Lee; Inoh Hwang; Kyunghyun Son; Yongchul Cho; Tatsuhiro Otsuka; Hyuck Choo; Kyoungho Ha  
Publication Year: 2022, Page(s): 3137 - 3148  
[HTML](#)

Bridging the Terahertz Gap: Photonics-Assisted Free-Space Communications From the Submillimeter-Wave to the Mid-Infrared  
Xiaodan Pang; Oskars Ozolins; Shi Jia; Lu Zhang; Richard Schatz; Aleksejs Udalcovs; Vjaceslavs Bobrovs; Hao Hu; Toshio Morioka; Yan-Ting Sun; Jiajia Chen; Sebastian Lourduodoss; Leif Katsuo Oxenløwe; Sergei Popov; Xianbin Yu  
Publication Year: 2022, Page(s): 3149 - 3162  
[HTML](#)

Characterization, Measurement and Specification of Device Imperfections in Optical Coherent Transceivers  
Zhenning Tao; Yangyang Fan; Xiaoqi Su; Ke Zhang; Chengwu Yang; Tong Ye; Jingnan Li; Hisao Nakashima; Takeshi Hoshida  
Publication Year: 2022, Page(s): 3163 - 3172  
[HTML](#)

Coherent Free-Space Optical Communications: Opportunities and Challenges  
Fernando P. Guimar; Marco A. Fernandes; José Leonardo Nascimento; Vera Rodrigues; Paulo P. Monteiro  
Publication Year: 2022, Page(s): 3173 - 3186  
[HTML](#)

Power-Over-Fiber Using Double-Clad Fibers  
Motoharu Matsuura  
Publication Year: 2022, Page(s): 3187 - 3196  
[HTML](#)

New Lower Bounds on the Capacity of Optical Fiber Channels via Optimized Shaping and Detection  
Marco Secondini; Stella Civelli; Enrico Forestieri; Lareb Zar Khan  
Publication Year: 2022, Page(s): 3197 - 3209  
[HTML](#)

Silicon Photonic Integrated Circuits for Soliton Based Long Haul Optical Communication  
Alvaro Moscoso-Mártir; Jonas Koch; Olaf Schulz; Juliana Müller; Ali Tabatabaei Mashayekh; Arka D. Das; Florian Merget; Stephan Pachnicke; Jeremy Witzens  
Publication Year: 2022, Page(s): 3210 - 3222  
[HTML](#)

Brillouin Amplification for Enhanced Coherent Communication Applications  
Mark Pelusi; Takayuki Kurosu; Takashi Inoue; Shu Namiki  
Publication Year: 2022, Page(s): 3223 - 3242  
[HTML](#)

Neuromorphic Silicon Photonics and Hardware-Aware Deep Learning for High-Speed Inference  
Miltiadis Moralis-Pegios; George Mourgias-Alexandris; Apostolos Tsakyridis; George Giamougiannis; Angelina Totovic; George Dabos; Nikolaos Passalis; Manos Kirtas; T. Rutirawut; F. Y. Gardes; Anastasios Tefas; Nikos Pleros  
Publication Year: 2022, Page(s): 3243 - 3254  
[HTML](#)

Amplified Transmission Beyond C- and L- Bands: Bismuth Doped Fiber Amplifier for O-Band Transmission  
Vitaly Mikhailov; Jiawei Luo; Daryl Inniss; Man F. Yan; Yingzhi Sun; Gabriel S. Puc; Robert S. Windeler; Paul S. Westbrook; Yuriy Dulashko; David J. DiGiovanni  
Publication Year: 2022, Page(s): 3255 - 3262  
HTML

The Ergodic GN Model for Space-Division Multiplexing With Strong Mode Coupling  
Paolo Serena; Chiara Lasagni; Alberto Bononi; Cristian Antonelli; Antonio Mecozzi  
Publication Year: 2022, Page(s): 3263 - 3276  
HTML

Experimental Demonstration of a 100-Gbit/s 16-QAM Free-Space Optical Link Using a Structured Optical "Bottle Beam" to Circumvent Obstructions  
Huibin Zhou; Nanzhe Hu; Xinzhou Su; Runzhou Zhang; Haoqian Song; Hao Song; Kai Pang; Kaiheng Zou; Amir Minoofar; Brittany Lynn; Moshe Tur; Alan E. Willner  
Publication Year: 2022, Page(s): 3277 - 3284  
HTML

Experimental Demonstration of Sub-THz Wireless Communications Using Multiplexing of Laguerre-Gaussian Beams When Varying two Different Modal Indices  
Amir Minoofar; Xinzhou Su; Huibin Zhou; Runzhou Zhang; Fatemeh Alishahi; Kaiheng Zou; Hao Song; Kai Pang; Shlomo Zach; Moshe Tur; Andreas F. Molisch; Hirofumi Sasaki; Doohwan Lee; Alan E. Willner  
Publication Year: 2022, Page(s): 3285 - 3292  
HTML

Light Scattering Mechanisms in Few-Mode Fibers  
Maroun Bsaibes; Yves Quiquempois; Stéphane Plus; Adrien Masselot; Guillaume Labroille; Marianne Bigot; Jean-Baptiste Trinel; Pierre Sillard; Laurent Bigot  
Publication Year: 2022, Page(s): 3293 - 3298  
HTML

60 GHz Bandwidth Directly Modulated Membrane III-V Lasers on SiO<sub>2</sub>/Si  
Nikolaos-Panteleimon Diamantopoulos; Takuro Fujii; Suguru Yamaoka; Hidetaka Nishi; Koji Takeda; Tai Tsuchizawa; Toru Segawa; Takaaki Kakitsuka; Shinji Matsuo  
Publication Year: 2022, Page(s): 3299 - 3306  
HTML

Wavelength & mm-Wave Flexible Converged Optical Fronthaul With a Low Noise Si-Based Integrated Dual Laser Source  
Devika Dass; Amol Delmade; Liam Barry; Chris G. H. Roeloffzen; Douwe Geuzebroek; Colm Browning  
Publication Year: 2022, Page(s): 3307 - 3315  
HTML

End-to-End Learning of a Constellation Shape Robust to Channel Condition Uncertainties  
Ognjen Jovanovic; Metodi P. Yankov; Francesco Da Ros; Darko Zibar  
Publication Year: 2022, Page(s): 3316 - 3324  
HTML

Co-Packaged Optics With Multimode Fiber Interface Employing 2-D VCSEL Matrix  
Chenhui Li; Haoshuo Chen; Nicolas K. Fontaine; Bob Farah; Cristian Bolle; Roland Ryf; Mikael Mazur; Oded Raz; Christian Neumeier; Juan Carlos Alvarado; Rodrigo Amezcua-Correa; Marianne Bigot-Astruc; Pierre Sillard; David T. Neilson  
Publication Year: 2022, Page(s): 3325 - 3330  
HTML

Multiband Silicon Photonic ePIC Coherent Receiver for 64 GBd QPSK  
Pascal M. Seiler; Karsten Voigt; Anna Peczek; Galina Georgieva; Stefan Lischke; Andrea Malignaggi; Lars Zimmermann  
Publication Year: 2022, Page(s): 3331 - 3337  
HTML

Ultrahigh-Net-Bitrate 363 Gbit/s PAM-8 and 279 Gbit/s Polybinary Optical Transmission Using Plasmonic Mach-Zehnder Modulator  
Qian Hu; Robert Borkowski; Yannick Lefevre; Junho Cho; Fred Buchali; René Bonk; Karsten Schuh; Eva De Leo; Patrick Habegger; Marcel Destrax; Nino Del Medico; Hamit Duran; Valentino Tedaldi; Christian Funck; Yuriy Fedoryshyn; Juerg Leuthold; Wolfgang Heni; Benedikt Baeuerle; Claudia Hoessbacher  
Publication Year: 2022, Page(s): 3338 - 3346  
HTML

Higher-Order Modulation vs Faster-Than-Nyquist PAM-4 for Datacenter IM-DD Optics: An AIR Comparison Under Practical Bandwidth Limits  
Di Che; Xi Chen  
Publication Year: 2022, Page(s): 3347 - 3357  
HTML

Announcing an Issue  
Publication Year: 2022, Page(s): 3358 - 3358  
HTML

TechRxiv: Share Your Preprint Research with the World!  
Publication Year: 2022, Page(s): 3359 - 3359  
HTML

Information for Authors  
Publication Year: 2022, Page(s): C3 - C3  
HTML

Blank page  
Publication Year: 2022, Page(s): C4 - C4  
HTML

## June 1

Frontcover  
Publication Year: 2022, Page(s): C1 - C1  
HTML

Journal of Lightwave Technology  
Publication Year: 2022, Page(s): C2 - C2  
HTML

Table of Contents  
Publication Year: 2022, Page(s): 3358 - 3359  
HTML

Guest Editorial: Multi-Band Optical Networks  
Nicola Sambo; Vittorio Curri; Gangxiang Shen; Mattia Cantono; Joao Pedro; Erwan Pincemin  
Publication Year: 2022, Page(s): 3360 - 3363  
HTML



On-Chip Waveguide Amplifiers for Multi-Band Optical Communications: A Review and Challenge  
Zhenshi Chen;Lei Wan;Shecheng Gao;Kun Zhu;Mingjie Zhang;Yan Li;Xiangxin Huang;Zhaohui Li  
Publication Year: 2022,Page(s):3364 - 3373  
HTML

PPLN-Based Optical Parametric Amplification for Wideband WDM Transmission  
Shimpei Shimizu;Takayuki Kobayashi;Takushi Kazama;Takeshi Umeki;Masanori Nakamura;Koji Enbutsu;Takahiro Kashiwazaki;Ryoichi Kasahara;Kei Watanabe;Yutaka Miyamoto  
Publication Year: 2022,Page(s):3374 - 3384  
Cited by: Papers (1)  
HTML

Challenges and Enabling Technologies for Multi-Band WDM Optical Networks  
Ning Deng;Liangjia Zong;Hengyun Jiang;Yuhua Duan;Kai Zhang  
Publication Year: 2022,Page(s):3385 - 3394  
HTML

DSP-Based Link Tomography for Amplifier Gain Estimation and Anomaly Detection in C+L-Band Systems  
Matheus Sena;Robert Emmerich;Behnam Shariati;Caio Santos;Antonio Napoli;Johannes K. Fischer;Ronald Freund  
Publication Year: 2022,Page(s):3395 - 3405  
HTML

Solving for Scalability From Multi-Band to Multi-Rail Core Networks  
Rene Schmogrow  
Publication Year: 2022,Page(s):3406 - 3414  
HTML

Optical Layer Impairments and Their Mitigation in C+L+S+E+O Multi-Band Optical Networks With G.652 and Loss-Minimized G.654 Fibers  
Chengliang Zhang;Xiang Liu;Junjie Li;Anxu Zhang;Hao Liu;Lipeng Feng;Kai Lv;Shenghui Liao;Zeshan Chang;Jian Zhang  
Publication Year: 2022,Page(s):3415 - 3424  
HTML

Multi-Band Operation of Flat-Top Supercontinuum Laser Sources With Programmable Repetition Rate up to 50 GHz  
Minje Song;Hyunjong Choi;Gyudong Choi;Sang-Pil Han;Seungyoung Lim;Taehyun Lee;Minhyup Song  
Publication Year: 2022,Page(s):3425 - 3431  
HTML

Ultrawide-band Low Polarization Sensitivity 3- $\mu$ m SOI Arrayed Waveguide Gratings  
Yu Wang;Srivathsa Bhat;Netsanet Tessema;Rafael Kraemer;Antonio Napoli;Giovanni Delrosso;Nicola Calabretta  
Publication Year: 2022,Page(s):3432 - 3441  
HTML

Survivable Routing, Spectrum, Core and Band Assignment in Multi-Band Space Division Multiplexing Elastic Optical Networks  
Zhihuan Luo;Shan Yin;Ligang Zhao;Zhenhao Wang;Wenchao Zhang;Liyong Jiang;Shanguo Huang  
Publication Year: 2022,Page(s):3442 - 3455  
HTML

SNR Re-Verification-Based Routing, Band, Modulation, and Spectrum Assignment in Hybrid C-C+L Optical Networks  
Qiuyan Yao;Hui Yang;Bowen Bao;Jie Zhang;Hanning Wang;Dawei Ge;Sheng Liu;Dong Wang;Yunbo Li;Dechao Zhang;Han Li  
Publication Year: 2022,Page(s):3456 - 3469  
HTML

Characterization, Monitoring, and Mitigation of the I/Q Imbalance in Standard C-Band Transceivers in Multi-Band Systems  
Gabriele Di Rosa;Robert Emmerich;Matheus Sena;Johannes K. Fischer;Colja Schubert;Ronald Freund;André Richter  
Publication Year: 2022,Page(s):3470 - 3478  
HTML

SDN-Enabled Multi-Band S-BVT Within Disaggregated Optical Networks  
Laia Nadal;Michela Svaluto Moreolo;Josep M. Fàbrega;F. Javier Vilchez  
Publication Year: 2022,Page(s):3479 - 3485  
HTML

Transparent vs Translucent Multi-Band Optical Networking: Capacity and Energy Analyses  
Rasoul Sadeghi;Bruno Correia;André Souza;Nelson Costa;João Pedro;Antonio Napoli;Vittorio Curri  
Publication Year: 2022,Page(s):3486 - 3498  
HTML

Scalable and Disaggregated GGN Approximation Applied to a C+L+S Optical Network  
Andrea D'Amico;Bruno Correia;Elliot London;Emanuele Virgillito;Giacomo Borraccini;Antonio Napoli;Vittorio Curri  
Publication Year: 2022,Page(s):3499 - 3511  
HTML

Announcing an Issue  
Publication Year: 2022,Page(s):3512 - 3512  
HTML

TechRxiv: Share Your Preprint Research with the World!  
Publication Year: 2022,Page(s):3513 - 3513  
HTML

Information for Authors  
Publication Year: 2022,Page(s):C3 - C3  
HTML

Blank page  
Publication Year: 2022,Page(s):C4 - C4  
HTML

## June 15

Frontcover  
Publication Year: 2022,Page(s):C1 - C1  
HTML

Publication Year: 2022,Page(s):C2 - C2  
HTML

Table of Contents  
Publication Year: 2022,Page(s):3512 - 3514  
HTML

Virtual Optical Network Mapping Approaches in Space-Division-Multiplexing Elastic Optical Data Center Networks  
Qi Chen;Bowen Chen;Wenwen Zheng;Yunfei Jiang;Jinbing Wu;Hong Chen;Mingyi Gao;Weidong Shao;Pin-Han Ho  
Publication Year: 2022,Page(s):3515 - 3529  
HTML



Secret-Key Provisioning With Collaborative Routing in Partially-  
Trusted-Relay-based Quantum-Key-Distribution-Secured Optical  
Networks

Xiaosong Yu;Yuhang Liu;Xingyu Zou;Yuan Cao;Yongli  
Zhao;Avishek Nag;Jie Zhang

Publication Year: 2022,Page(s):3530 - 3545

HTML

Spectral and Spatial Power Evolution Design With Machine  
Learning-Enabled Raman Amplification

Mehran Soltani;Francesco Da Ros;Andrea Carena;Darko Zibar

Publication Year: 2022,Page(s):3546 - 3556

HTML

Hybrid Laser-LED Transmitter With Closed-Loop Beam-Steering  
Control for Indoor Optical Wireless Communication

Faheem Ahmad;R. N. Sathisha;Konkada Manattayil

Jyothsna;Varun Raghunathan

Publication Year: 2022,Page(s):3557 - 3566

HTML

A Physical Layer Security-Enhanced Scheme in CO-OFDM System  
Based on CIJS Encryption and 3D-LSCM Chaos

Xianfeng Tang;Zeyu Xu;Fan Li;Zibin Li;Le Liu;Changqing

Yang;Hongbing Huang;Longyong Chen;Xiaoguang Zhang

Publication Year: 2022,Page(s):3567 - 3575

HTML

Approaches to Array-Type Optical IRSs: Schemes and  
Comparative Analysis

Haibo Wang;Zaichen Zhang;Bingcheng Zhu;Jian Dang;Liang

Wu;Yidi Zhang

Publication Year: 2022,Page(s):3576 - 3591

HTML

Intelligent Optical Performance Monitoring Based on Intensity and  
Differential-Phase Features for Digital Coherent Receivers

Jiacheng Feng;Lin Jiang;Lianshan Yan;Anlin Yi;Wei Pan;Bin Luo

Publication Year: 2022,Page(s):3592 - 3601

HTML

Achievable Rates for Short-Reach Fiber-Optic Channels With Direct  
Detection

Daniel Plabst;Tobias Prinz;Thomas Wiegart;Talha

Rahman;Nebojša Stojanović;Stefano Calabrò;Norbert

Hanik;Gerhard Kramer

Publication Year: 2022,Page(s):3602 - 3613

HTML

RF Self-Interference Cancellation and Frequency Downconversion  
With Immunity to Power Fading Based on Optoelectronic Oscillation

Xiao Jie Fan;Jin Feng Du;Guo Zheng Li;Ming Li;Ning Hua Zhu;Wei

Li

Publication Year: 2022,Page(s):3614 - 3621

HTML

Least Angle Regression-Based Modified Volterra Nonlinear  
Equalizer for Optical Interconnection System

Yunfeng Gao;Chuanchuan Yang;Jiaxing Wang;Cheng

Zhang;Xiaoyu Zhang;Haipeng Guo;Xin Qin;Chih-Chiang

Shen;Hongbin Li;Zhangyuan Chen;Constance J. Chang-Hasnain

Publication Year: 2022,Page(s):3622 - 3632

HTML

A Security Detection Scheme Based on TTD for NG-PON2 Fiber  
Links

Xiaokai Ye;Tao Lv;Yu Zheng;Shaokai Wang;Hehong Fan;Zhiqun

Ge;Zhengying Xu;Xiaohan Sun

Publication Year: 2022,Page(s):3633 - 3639

HTML

An Anisotropic Sparse Adaptive Polynomial Chaos Method for the  
Uncertainty Quantification of Resonant Gratings-Performance

Aristeides D. Papadopoulos;Theodoros Zygiridis;Yannis

Kopsinis;Elias N. Glytsis

Publication Year: 2022,Page(s):3640 - 3646

HTML

A Novel Deep-Learning Model for RDTS Signal Denoising Based  
on Down-Sampling and Convolutional Neural Network

Honghui Wang;Yuhang Wang;Xiang Wang;Sibo Wang;Tong Liu

Publication Year: 2022,Page(s):3647 - 3653

HTML

Design and Implementation of More Than 50m Real-Time  
Underwater Wireless Optical Communication System

Hongyu Zhou;Minglun Zhang;Xiaozheng Wang;Xiaomin Ren

Publication Year: 2022,Page(s):3654 - 3668

HTML

Performance Investigation of Error-Feedback Noise Shaping in  
Low-Resolution High-Speed IM/DD and Coherent Transmission  
Systems

Liang Shu;Zhenming Yu;Kaixuan Sun;Hongyu Huang;Zhiquan

Wan;Kun Xu

Publication Year: 2022,Page(s):3669 - 3680

HTML

A 130 nm CMOS Receiver for Visible Light Communication

Rifat Kisacik;Muhammed Yaser Yagan;Murat Uysal;Ali Emre

Pusane;Tuncer Baykas;Gunhan Dundar;Arda Deniz Yalcinkaya

Publication Year: 2022,Page(s):3681 - 3687

HTML

Design of Probabilistic Shaping 4D Ultra High Order Modulation  
Format With 8APSK Pilot Aided Carrier Phase Recovery

Feng Tian;Tianze Wu;Yiqing Ji;Chuxuan Wang;Qi Zhang;Ran

Gao;Zhipei Li;Qinghua Tian;Xiangjun Xin

Publication Year: 2022,Page(s):3688 - 3697

HTML

Broadband Optical Heterodyne Millimeter-Wave-over-Fiber  
Wireless Links Based on a Quantum Dash Dual-Wavelength DFB  
Laser

Khan Zeb;Zhenguo Lu;Jiaren Liu;Youxin Mao;Guocheng Liu;Philip

J. Poole;Mohamed Rahim;Grzegorz Pakulski;Pedro Barrios;Martin

Vachon;Daniel Poitras;Weihong Jiang;John Weber;Xiupu

Zhang;Jianping Yao

Publication Year: 2022,Page(s):3698 - 3708

HTML

Rectangular Orthogonal Digital Filter Banks Based on Extended  
Gaussian Functions

W. Jin;Z. Q. Zhong;S. Jiang;J. X. He;D. Chang;Y. H. Hong;R. P.

Giddings;X. Q. Jin;M. O'Sullivan;T. Durrant;J. Trewern;G. Mariani;J.

M. Tang

Publication Year: 2022,Page(s):3709 - 3722

HTML

Demonstration of 50 Km Fiber-Optic Two-Way Quantum Clock  
Synchronization

Huibo Hong;Runai Quan;Xiao Xiang;Wenxiang Xue;Honglei

Quan;Wenyu Zhao;Yuting Liu;Mingtao Cao;Tao Liu;Shougang

Zhang;Ruifang Dong

Publication Year: 2022,Page(s):3723 - 3728

HTML

Successive Interference Cancellation on Frequency-Selective Channels With Mode-Dependent Gain

Elaine S. Chou;Joseph M. Kahn

Publication Year: 2022,Page(s):3729 - 3738

HTML

On the Kurtosis of Modulation Formats for Characterizing the Nonlinear Fiber Propagation

Junho Cho;Robert Tkach

Publication Year: 2022,Page(s):3739 - 3748

HTML

Security Enhancement in Coherent OFDM Optical Transmission With Chaotic Three-Dimensional Constellation Scrambling

Yiqun Zhang;Ning Jiang;Anke Zhao;Shiqin Liu;Jiafa Peng;Lu

Chen;Martin P. J. Lavery;Hasan T Abbas;Kun Qiu

Publication Year: 2022,Page(s):3749 - 3760

HTML

Linear Response Modeling of High Luminous Flux Phosphor-Coated White LEDs for VLC

Pau Salvador;Javier Valls;Juan Luis Corral;Vicenç Almenar;Maria

Jose Canet

Publication Year: 2022,Page(s):3761 - 3767

HTML

Comparison of Adaptive Equalization Methods for Improving Indoor Optical Wireless Communications Employing Few-Mode Based Uniform Beam Shaping

Jianghao Li;Christina Lim;Ampalavanapillai Nirmalathas

Publication Year: 2022,Page(s):3768 - 3776

HTML

Patterns Quantization With Noise Using Gaussian Features and Bayesian Learning in VLC Systems

Xingyu Lu;Yuanyuan Liu;Junjie Chen;Yulin Ran;Yunpeng

Xiao;Yanbing Liu

Publication Year: 2022,Page(s):3777 - 3785

HTML

A Code Rate-Compatible High-Throughput Hardware

Implementation Scheme for QKD Information Reconciliation

Ming Zhu;Ke Cui;Simeng Li;Lei Kong;Shibiao Tang;Jian Sun

Publication Year: 2022,Page(s):3786 - 3793

Cited by: Papers (1)

HTML

High-Speed Silicon Integrated Polarization Stabilizer Assisted By a Polarimeter

Wei Liu;Jiawen Liao;Hongjun Cai;Yu Yu;Xinliang Zhang

Publication Year: 2022,Page(s):3794 - 3801

HTML

Single Sideband Suppressed Carrier Modulation With Spatiotemporal Metasurfaces at Near-Infrared Spectral Regime

Raana Sabri;Mohammad Mahdi Salary;Hossein Mosallaei

Publication Year: 2022,Page(s):3802 - 3813

HTML

All-Solid-State Terahertz Phased Array Based on Graphene Metasurface for Ultra-Wide-Angle Beam Steering

Yue Wang;Dajian Cui;Yu Wang;Guohui Yang;Bin Zhang;Yu

Zhang;Chunhui Wang

Publication Year: 2022,Page(s):3814 - 3822

HTML

PHz Electronic Device Design and Simulation for Waveguide-Integrated Carrier-Envelope Phase Detection

Dario Cattozzo Mor;Yujia Yang;Felix Ritzkowski;Franz X.

Kärtner;Karl K. Berggren;Neetesh Kumar Singh;Phillip D. Keathley

Publication Year: 2022,Page(s):3823 - 3831

HTML

High Performance InGaAs/InP Single-Photon Avalanche Diode

Using DBR-Metal Reflector and Backside Micro-Lens

Bojian Zhang;Shunzheng Yin;Yingjian Liu;Zhongjun Jiang;Wei

He;Qingwei Li;Jiawen Hao;Liang Wang

Publication Year: 2022,Page(s):3832 - 3838

HTML

SmartPrint Single-Mode Flexible Polymer Optical Interconnect for High Density Integrated Photonics

L. Jiang;A. Nishant;J. Frish;T. S. Kleine;L. Brusberg;R.

Himmelhuber;K.-J. Kim;J. Pyun;S. Pau;R. A. Norwood;T. L. Koch

Publication Year: 2022,Page(s):3839 - 3844

HTML

Low-Noise, Single-Polarized, and High-Speed Vertical-Cavity Surface-Emitting Lasers for Very Short Reach Data Communication

Yen-Yu Huang;Yung-Hao Chang;Yaung-Cheng Zhao;Zuhaib

Khan;Zohaiddin Ahmad;Chia-Hung Lee;Jui-Sheng Chang;Cheng-

Yi Liu;Jin-Wei Shi

Publication Year: 2022,Page(s):3845 - 3854

HTML

Infrared Al<sub>0.15</sub>InAsSb Digital Alloy *Nbn* Photodetectors

Renjie Wang;J. Andrew McArthur;Seth R. Bank;Joe C. Campbell

Publication Year: 2022,Page(s):3855 - 3863

HTML

Valley-Dependent Topological Photonic Crystals With

Heterogeneous Bearded Interfaces for SOI-Based Integrated

Optical Devices

Zhipeng Qi;Guohua Hu;Chunyu Deng;Hao Sun;Bo Liu;Xiumin

Song;Yu Sun;Yiping Cui

Publication Year: 2022,Page(s):3864 - 3871

HTML

A 50-GHz Bandwidth Traveling-Wave Mach-Zehnder Modulator

With Built-In Feedback Equalization

Jing Gao;Kehan Zhu;Hui Wu

Publication Year: 2022,Page(s):3872 - 3881

HTML

Tunable In-series Laser Array With Duplex Distributed Feedback

Sections

Zijiang Yang;Zhenxing Sun;Rulei Xiao;Gen Lv;Yunshan

Zhang;Yuechun Shi;Yi-Jen Chiu;Xiangfei Chen

Publication Year: 2022,Page(s):3882 - 3890

HTML

Modeling of Relative Intensity Noise in QD-VCSEL

Gholamreza Babaabasi;Ali Mir;Mohammad Hasan Yavari

Publication Year: 2022,Page(s):3891 - 3899

HTML

Tunable, Continuous-Wave, Deep-Ultraviolet Laser Generation by

Intracavity Frequency Doubling of Visible Fiber Lasers

Jinhai Zou;Jin Li;Tianran Li;Yizhong Huang;Qiujun Ruan;Yanbo

Dou;Zhengqian Luo

Publication Year: 2022,Page(s):3900 - 3906

HTML

6.85 kW Ytterbium-Raman Fiber Amplifier Based on Adjustable Raman Threshold Method  
Tiancheng Qi;Dan Li;Zehui Wang;Lele Wang;Weilong Yu;Ping Yan;Mali Gong;Qirong Xiao  
Publication Year: 2022,Page(s):3907 - 3915  
HTML

Reaching Long-Term Stability in CP- $\phi$ OTDR  
Regina Magalhães;Tiago Neves;Lorenzo Scherino;Sonia Martin-Lopez;Hugo F. Martins  
Publication Year: 2022,Page(s):3916 - 3922  
HTML

Ultra-Stable Fiber Laser Based on Intracavity Dual Mode Self-Reference Mechanism  
Kang Ying;Dijun Chen;Haoyang Pi;Zhaoyong Wang;Xuan Li;Yanguang Sun;Fang Wei;Fei Yang;Nan Cheng;Qing Ye;Haiwen Cai  
Publication Year: 2022,Page(s):3923 - 3929  
HTML

High Power Ultranarrow Linewidth Picosecond Laser System Based on Tapered Fiber Amplifier and Gain-Switched DFB Laser Diode  
Andrey B. Petrov;Grigory A. Mikhailovsky;Alexander V. Gorbachev;Maxim A. Odnoblyudov;Joonas Rissanen;Valery N. Filippov;Regina V. Gumenyuk  
Publication Year: 2022,Page(s):3930 - 3934  
HTML

Lateral Force Sensing Based on Sagnac Interferometry Realized by a High-Birefringence Suspended-Core Fiber  
Shengqi Zhang;Zihan Cao;Titi Xia;Chengkun Yang;Zhengyong Liu;Zhaohui Li  
Publication Year: 2022,Page(s):3935 - 3941  
HTML

Robust 1.69  $\mu\text{m}$  Random Fiber Laser With High Spectral Purity Based on Ordinary Fibers  
Rui Ma;Xin Quan;Ting Zhao;Dian Yuan Fan;Jun Liu  
Publication Year: 2022,Page(s):3942 - 3946  
HTML

Nanostructured Large Mode Area Fiber for Laser Applications  
Alicja Anuszkiewicz;Marcin Franczyk;Dariusz Pysz;Filip Włodarczyk;Adam Filipkowski;Ryszard Buczynski;Tomasz Osuch  
Publication Year: 2022,Page(s):3947 - 3953  
HTML

Ultrashort Pulse Generation in Modeless Laser Cavity  
Dan Cheng;Yujun Feng;Meng Ding;Debasis Pal;Johan Nilsson  
Publication Year: 2022,Page(s):3954 - 3967  
HTML

Fiber End-Facet Integrated Non-Volatile Optical Switch Based On  $\text{Ge}_2\text{Sb}_2\text{Te}_5$   
Zhihai Liu;Xiang Li;Yu Zhang;Wei Jin;Yaxun Zhang;Siyang Cheng;Yaru Li;Libo Yuan  
Publication Year: 2022,Page(s):3968 - 3973  
HTML

Truncated Conical-Tip Fiber Probe for Common-Path Optical Coherence Tomography With Optimal Sensitivity  
Wei Wang;Jun Ma;Bai-Ou Guan  
Publication Year: 2022,Page(s):3974 - 3979  
HTML

Deep Learning Piston Aberration Control of Fiber Laser Phased Array By Spiral Phase Modulation  
Jing Zuo;Haolong Jia;Chao Geng;Qiliang Bao;Fan Zou;Ziqiang Li;Jing Jiang;Feng Li;Bincheng Li;Xinyang Li  
Publication Year: 2022,Page(s):3980 - 3991  
HTML

Signal Pick-Up Technique for Sapphire Fiber External Fabry-Perot Interferometer Using Tapered Multimode Fibers  
Xinxing Feng;Yi Jiang;Shangran Xie;Yang Cui;Yutong Zhang  
Publication Year: 2022,Page(s):3992 - 3996  
HTML

Investigation on the Dependence of Directional Torsion Measurement on Multimode Fiber Geometry  
Ruoning Wang;Ke Tian;Meng Zhang;Mingyuan Zhang;Gerald Farrell;Elfed Lewis;Libo Yuan;Pengfei Wang  
Publication Year: 2022,Page(s):3997 - 4002  
HTML

Microstructured Fiber Sensor Based On Resonance Coupling Between Cladding Mode and Surface Plasmon Mode for Sucrose Determination  
Ying Guo;Lei Zhang;Xiaojuan Meng;Jianshe Li;Shuguang Li  
Publication Year: 2022,Page(s):4003 - 4010  
HTML

Asymmetric Reflection Spectrum of Fabry-Perot Interferometer and the Application in Pressure Sensing  
Luo Wang;Rui Zhou;Min Li;Ming-Yu Li;Xiaoyan Wen;Haifei Lu  
Publication Year: 2022,Page(s):4011 - 4019  
HTML

Hyperelastic Polymer Fiber Fabry-Pérot Interferometer for Nanoforce Measurement  
Weijia Bao;Xingyong Li;Fengyi Chen;Ruohui Wang;Xueguang Qiao  
Publication Year: 2022,Page(s):4020 - 4026  
HTML

Integrated Optical Phased Array Based on a Binary Splitter Tree With Reduced Number of Control Voltages  
Daivid Fowler;Sylvain Guerber;Jonathan Faugier-Tovar;Nicola A. Tyler;Bertrand Szlag  
Publication Year: 2022,Page(s):4027 - 4032  
HTML

Broadband Fiber-Optic Acoustic Sensors  
Heming Wei;Zhe Gong;Wenjing Wu;Jiawei Che;Liang Zhang;Fufei Pang;Tingyun Wang  
Publication Year: 2022,Page(s):4033 - 4041  
HTML

High-Spatial-Resolution Strain and Vibration Dual-Parameter Sensor Based on Ultra-Short FBG  
Chengang Lyu;Jiachen Tian;Bo Yang;Yi Deng;Yanping Xiao;Jie Jin;Chunfeng Ge  
Publication Year: 2022,Page(s):4042 - 4049  
HTML

High Sensing Accuracy Realisation With Millimetre/Sub-Millimetre Resolution in Optical Frequency Domain Reflectometer  
Zhen Guo;Jize Yan;Gaoce Han;David Greenwood;James Marco;Yifei Yu  
Publication Year: 2022,Page(s):4050 - 4056  
HTML

Correction to "Dual-Hop RF/FSO Systems Over k-m Shadowed and Fisher-Snedecor F Fading Channels With Non-Zero Boresight Pointing Errors"  
Junrong Ding; Xiaolong Xie; Liying Tan; Jing Ma; Dongpeng Kang  
Publication Year: 2022, Page(s): 4057 - 4057  
[HTML](#)

Correction to "Broadband Light Amplitude Tuning Characteristics of SnSe<sub>2</sub> Coated Microfiber"  
Heyuan Guan; Hanguang Li; Jingyuan Ming; Jiyu Hong; Jiangli Dong; Wentao Qiu; Wenguo Zhu; Jianhui Yu; Zhe Chen; Gangding Peng; Huihui Lu  
Publication Year: 2022, Page(s): 4058 - 4058  
[HTML](#)

Announcing an Issue  
Publication Year: 2022, Page(s): 4059 - 4059  
[HTML](#)

TechRxiv: Share Your Preprint Research with the World!  
Publication Year: 2022, Page(s): 4060 - 4060  
[HTML](#)

Information for Authors  
Publication Year: 2022, Page(s): C3 - C3  
[HTML](#)

Blank page  
Publication Year: 2022, Page(s): C4 - C4  
[HTML](#)

# IEEE TRANSACTIONS ON *MULTIMEDIA*

A PUBLICATION OF  
THE IEEE CIRCUITS AND SYSTEMS SOCIETY  
THE IEEE SIGNAL PROCESSING SOCIETY  
THE IEEE COMMUNICATIONS SOCIETY  
THE IEEE COMPUTER SOCIETY



<http://www.signalprocessingsociety.org/tmm/>

2022

Quality Assessment for Omnidirectional Video: A Spatio-Temporal Distortion Modeling Approach  
Pan Gao;Pengwei Zhang;Aljosa Smolic  
Publication Year: 2022,Page(s):1 - 16  
Cited by: Papers (2)  
HTML

Joint Contrast Enhancement and Noise Reduction of Low Light Images Via JND Transform  
Haonan Su;Long Yu;Cheolkon Jung  
Publication Year: 2022,Page(s):17 - 32  
HTML

LensCast: Robust Wireless Video Transmission Over MmWave MIMO With Lens Antenna Array  
Yongqiang Gui;Hancheng Lu;Feng Wu;Chang Wen Chen  
Publication Year: 2022,Page(s):33 - 48  
HTML

Correlation Graph Convolutional Network for Pedestrian Attribute Recognition  
Haonan Fan;Hai-Miao Hu;Shuailing Liu;Weiqing Lu;Shiliang Pu  
Publication Year: 2022,Page(s):49 - 60  
Cited by: Papers (1)  
HTML

Raw Image Deblurring  
Chih-Hung Liang;Yu-An Chen;Yueh-Cheng Liu;Winston H. Hsu  
Publication Year: 2022,Page(s):61 - 72  
HTML

Deeper Look at Image Salient Object Detection: Bi-Stream Network With a Small Training Dataset  
Zhenyu Wu;Shuai Li;Chenglizhao Chen;Aimin Hao;Hong Qin  
Publication Year: 2022,Page(s):73 - 86  
Cited by: Papers (3)  
HTML

Building and Using Personal Knowledge Graph to Improve Suicidal Ideation Detection on Social Media  
Lei Cao;Huijun Zhang;Ling Feng  
Publication Year: 2022,Page(s):87 - 102  
Cited by: Papers (1)  
HTML

Focus Your Attention: A Focal Attention for Multimodal Learning  
Chunxiao Liu;Zhendong Mao;Tianzhu Zhang;An-An Liu;Bin Wang;Yongdong Zhang  
Publication Year: 2022,Page(s):103 - 115  
HTML

Attribute Restoration Framework for Anomaly Detection  
Fei Ye;Chaoqin Huang;Jinkun Cao;Maosen Li;Ya Zhang;Cewu Lu  
Publication Year: 2022,Page(s):116 - 127  
Cited by: Papers (5)  
HTML

Deep Domain Adaptation Based Multi-Spectral Salient Object Detection  
Shaoyue Song;Zhenjiang Miao;Hongkai Yu;Jianwu Fang;Kang Zheng;Cong Ma;Song Wang  
Publication Year: 2022,Page(s):128 - 140  
HTML

Amorphous Region Context Modeling for Scene Recognition  
Haitao Zeng;Xinhang Song;Gongwei Chen;Shuqiang Jiang  
Publication Year: 2022,Page(s):141 - 151  
HTML

Low Bitrate Light Field Compression With Geometry and Content Consistency  
Xinpeng Huang;Ping An;Yilei Chen;Deyang Liu;Liquan Shen  
Publication Year: 2022,Page(s):152 - 165  
HTML

Differentiable Spatial Regression: A Novel Method for 3D Hand Pose Estimation  
Xingyuan Zhang;Fuhai Zhang  
Publication Year: 2022,Page(s):166 - 176  
HTML

Generalized Zero-Shot Learning Via Multi-Modal Aggregated Posterior Aligning Neural Network  
Xingyu Chen;Jin Li;Xuguang Lan;Nanning Zheng  
Publication Year: 2022,Page(s):177 - 187  
HTML

Learning the Global Descriptor for 3-D Object Recognition Based on Multiple Views Decomposition  
Jingjia Huang;Wei Yan;Thomas Li;Shan Liu;Ge Li  
Publication Year: 2022,Page(s):188 - 201  
HTML

- Cross Parallax Attention Network for Stereo Image Super-Resolution  
Canqiang Chen;Chunmei Qing;Xiangmin Xu;Patrick Dickinson  
Publication Year: 2022,Page(s):202 - 216  
Cited by: Papers (1)  
HTML
- LAG-Net: Multi-Granularity Network for Person Re-Identification via Local Attention System  
Xun Gong;Zu Yao;Xin Li;Yueqiao Fan;Bin Luo;Jianfeng Fan;Boji Lao  
Publication Year: 2022,Page(s):217 - 229  
Cited by: Papers (1)  
HTML
- SmsNet: A New Deep Convolutional Neural Network Model for Adversarial Example Detection  
Jinwei Wang;Junjie Zhao;Qilin Yin;Xiangyang Luo;Yuhui Zheng;Yun-Qing Shi;Sunil Kr. Jha  
Publication Year: 2022,Page(s):230 - 244  
HTML
- Region-Based Dehazing via Dual-Supervised Triple-Convolutional Network  
Joongchol Shin;Hasil Park;Joonki Paik  
Publication Year: 2022,Page(s):245 - 260  
HTML
- Spatiotemporal Dilated Convolution With Uncertain Matching for Video-Based Crowd Estimation  
Yu-Jen Ma;Hong-Han Shuai;Wen-Huang Cheng  
Publication Year: 2022,Page(s):261 - 273  
Cited by: Papers (1)  
HTML
- Exploiting Informative Video Segments for Temporal Action Localization  
Che Sun;Hao Song;Xinxiao Wu;Yunde Jia;Jiebo Luo  
Publication Year: 2022,Page(s):274 - 287  
Cited by: Papers (1)  
HTML
- Infrared Action Detection in the Dark via Cross-Stream Attention Mechanism  
Xu Chen;Chenqiang Gao;Chaoyu Li;Yi Yang;Deyu Meng  
Publication Year: 2022,Page(s):288 - 300  
Cited by: Papers (1)  
HTML
- Robust Visual Object Tracking Via Adaptive Attribute-Aware Discriminative Correlation Filters  
Xue-Feng Zhu;Xiao-Jun Wu;Tianyang Xu;Zhen-Hua Feng;Josef Kittler  
Publication Year: 2022,Page(s):301 - 312  
Cited by: Papers (1)  
HTML
- SAM: Modeling Scene, Object and Action With Semantics Attention Modules for Video Recognition  
Xing Zhang;Zuxuan Wu;Yu-Gang Jiang  
Publication Year: 2022,Page(s):313 - 322  
HTML
- Improving Robustness of DASH Against Unpredictable Network Variations  
Bo Wang;Mingwei Xu;Fengyuan Ren;Jianping Wu  
Publication Year: 2022,Page(s):323 - 337  
HTML
- Adversarial-Metric Learning for Audio-Visual Cross-Modal Matching  
Aihua Zheng;Menglan Hu;Bo Jiang;Yan Huang;Yan Yan;Bin Luo  
Publication Year: 2022,Page(s):338 - 351  
Cited by: Papers (1)  
HTML
- Reinforcement Learning for Logic Recipe Generation: Bridging Gaps From Images to Plans  
Mengyang Zhang;Guohui Tian;Ying Zhang;Peng Duan  
Publication Year: 2022,Page(s):352 - 365  
HTML
- Interaction Relational Network for Mutual Action Recognition  
Mauricio Perez;Jun Liu;Alex C. Kot  
Publication Year: 2022,Page(s):366 - 376  
Cited by: Papers (4)  
HTML
- Self-Supervised Face Image Manipulation by Conditioning GAN on Face Decomposition  
Lê Minh Ngô;Sezer Karaoğlu;Theo Gevers  
Publication Year: 2022,Page(s):377 - 385  
HTML
- Viewport-Aware Deep Reinforcement Learning Approach for 360° Video Caching  
Pantelis Maniotis;Nikolaos Thomos  
Publication Year: 2022,Page(s):386 - 399  
Cited by: Papers (2)  
HTML
- Fast Intra Mode Decision Algorithm for Versatile Video Coding  
Xinchao Dong;Liquan Shen;Mei Yu;Hao Yang  
Publication Year: 2022,Page(s):400 - 414  
Cited by: Papers (4)  
HTML
- Intra-Domain Consistency Enhancement for Unsupervised Person Re-Identification  
Yaoyu Li;Hantao Yao;Changsheng Xu  
Publication Year: 2022,Page(s):415 - 425  
Cited by: Papers (2)  
HTML
- Video Frame Interpolation via Generalized Deformable Convolution  
Zhihao Shi;Xiaohong Liu;Kangdi Shi;Linhui Dai;Jun Chen  
Publication Year: 2022,Page(s):426 - 439  
HTML
- Affinity Fusion Graph-Based Framework for Natural Image Segmentation  
Yang Zhang;Moyun Liu;Jingwu He;Fei Pan;Yanwen Guo  
Publication Year: 2022,Page(s):440 - 450  
Cited by: Papers (1)  
HTML
- Deep View Synthesis via Self-Consistent Generative Network  
Zhuoman Liu;Wei Jia;Ming Yang;Peiyao Luo;Yong Guo;Mingkuo Tan  
Publication Year: 2022,Page(s):451 - 465  
Cited by: Papers (2)  
HTML
- Aggregation-Based Graph Convolutional Hashing for Unsupervised Cross-Modal Retrieval  
Peng-Fei Zhang;Yang Li;Zi Huang;Xin-Shun Xu  
Publication Year: 2022,Page(s):466 - 479  
HTML



One-Shot Image-to-Image Translation via Part-Global Learning With a Multi-Adversarial Framework  
Ziqiang Zheng;Zhibin Yu;Haiyong Zheng;Yang Yang;Heng Tao Shen  
Publication Year: 2022,Page(s):480 - 491  
HTML

Image Co-Saliency Detection and Instance Co-Segmentation Using Attention Graph Clustering Based Graph Convolutional Network  
Tengpeng Li;Kaihua Zhang;Shiwen Shen;Bo Liu;Qingshan Liu;Zhu Li  
Publication Year: 2022,Page(s):492 - 505  
HTML

E-Commerce Storytelling Recommendation Using Attentional Domain-Transfer Network and Adversarial Pre-Training  
Xusong Chen;Chenyi Lei;Dong Liu;Guoxin Wang;Haihong Tang;Zheng-Jun Zha;Houqiang Li  
Publication Year: 2022,Page(s):506 - 518  
HTML

MIEGAN: Mobile Image Enhancement via a Multi-Module Cascade Neural Network  
Zhaoqing Pan;Feng Yuan;Jianjun Lei;Wanqing Li;Nam Ling;Sam Kwong  
Publication Year: 2022,Page(s):519 - 533  
Cited by: Papers (6)  
HTML

IDHashGAN: Deep Hashing With Generative Adversarial Nets for Incomplete Data Retrieval  
Liming Xu;Xianhua Zeng;Weisheng Li;Ling Bai  
Publication Year: 2022,Page(s):534 - 545  
HTML

Exploiting Web Images for Fine-Grained Visual Recognition by Eliminating Open-Set Noise and Utilizing Hard Examples  
Huafeng Liu;Chuanyi Zhang;Yazhou Yao;Xiu-Shen Wei;Fumin Shen;Zhenmin Tang;Jian Zhang  
Publication Year: 2022,Page(s):546 - 557  
Cited by: Papers (2)  
HTML

Generate and Purify: Efficient Person Data Generation for Re-Identification  
Jianjie Lu;Weidong Zhang;Haibing Yin  
Publication Year: 2022,Page(s):558 - 566  
HTML

Multimodal Cross-Layer Bilinear Pooling for RGBT Tracking  
Qin Xu;Yiming Mei;Jinpei Liu;Chenglong Li  
Publication Year: 2022,Page(s):567 - 580  
Cited by: Papers (3)  
HTML

Global-Local Label Correlation for Partial Multi-Label Learning  
Lijuan Sun;Songhe Feng;Jun Liu;Gengyu Lyu;Congyan Lang  
Publication Year: 2022,Page(s):581 - 593  
Cited by: Papers (1)  
HTML

AVN: An Adversarial Variation Network Model for Handwritten Signature Verification  
Huan Li;Ping Wei;Ping Hu  
Publication Year: 2022,Page(s):594 - 608  
HTML

Drift-Proof Tracking With Deep Reinforcement Learning  
Zhongze Chen;Jing Li;Jia Wu;Jun Chang;Yafu Xiao;Xiaoting Wang  
Publication Year: 2022,Page(s):609 - 624  
HTML

Spatial-Temporal Action Localization With Hierarchical Self-Attention  
Rizard Renanda Adhi Pramono;Yie-Tarnng Chen;Wen-Hsien Fang  
Publication Year: 2022,Page(s):625 - 639  
HTML

Signal-Dependent Noise Estimation for a Real-Camera Model via Weight and Shape Constraints  
Heng Yao;Mian Zou;Chuan Qin;Xinpeng Zhang  
Publication Year: 2022,Page(s):640 - 654  
HTML

Multi-Focus Image Fusion Based on Multi-Scale Gradients and Image Matting  
Jun Chen;Xuejiao Li;Linbo Luo;Jiayi Ma  
Publication Year: 2022,Page(s):655 - 667  
Cited by: Papers (1)  
HTML

Temporal Cross-Layer Correlation Mining for Action Recognition  
Linchao Zhu;Hehe Fan;Yawei Luo;Mingliang Xu;Yi Yang  
Publication Year: 2022,Page(s):668 - 676  
Cited by: Papers (7)  
HTML

TWGAN: Twin Discriminator Generative Adversarial Networks  
Zhaoyu Zhang;Mengyan Li;Haonian Xie;Jun Yu;Tongliang Liu;Chang Wen Chen  
Publication Year: 2022,Page(s):677 - 688  
HTML

Human Action Recognition by Discriminative Feature Pooling and Video Segment Attention Model  
Md Moniruzzaman;Zhaozheng Yin;Zhihai He;Ruwen Qin;Ming C Leu  
Publication Year: 2022,Page(s):689 - 701  
Cited by: Papers (2)  
HTML

Low-Light Image Restoration With Short- and Long-Exposure Raw Pairs  
Meng Chang;Huajun Feng;Zhihai Xu;Qi Li  
Publication Year: 2022,Page(s):702 - 714  
Cited by: Papers (2)  
HTML

Emotion Expression With Fact Transfer for Video Description  
Hanli Wang;Pengjie Tang;Qinyu Li;Meng Cheng  
Publication Year: 2022,Page(s):715 - 727  
HTML

Unreliable-to-Reliable Instance Translation for Semi-Supervised Pedestrian Detection  
Sihao Lin;Wenhao Wu;Si Wu;Yong Xu;Hau-San Wong  
Publication Year: 2022,Page(s):728 - 739  
HTML

Probability-Based Framework to Fuse Temporal Consistency and Semantic Information for Background Segmentation  
Zhi Zeng;Ting Wang;Fulei Ma;Liang Zhang;Peiyi Shen;Syed Afaq Ali Shah;Mohammed Bennamoun  
Publication Year: 2022,Page(s):740 - 754  
HTML

- Deep RGB-D Saliency Detection Without Depth  
Yuan-fang Zhang;Jiangbin Zheng;Wenjing Jia;Wenfeng Huang;Long Li;Nian Liu;Fei Li;Xiangjian He  
Publication Year: 2022,Page(s):755 - 767  
Cited by: Papers (1)  
HTML
- Spatial-Temporal Multi-Cue Network for Sign Language Recognition and Translation  
Hao Zhou;Wengang Zhou;Yun Zhou;Houqiang Li  
Publication Year: 2022,Page(s):768 - 779  
Cited by: Papers (5)  
HTML
- Dynamic Emotion Modeling With Learnable Graphs and Graph Inception Network  
Amir Shirian;Subarna Tripathi;Tanaya Guha  
Publication Year: 2022,Page(s):780 - 790  
HTML
- AgeGAN++: Face Aging and Rejuvenation With Dual Conditional GANs  
Jingkuan Song;Jingqiu Zhang;Lianli Gao;Zhou Zhao;Heng Tao Shen  
Publication Year: 2022,Page(s):791 - 804  
Cited by: Papers (2)  
HTML
- Heterogeneous Hierarchical Feature Aggregation Network for Personalized Micro-Video Recommendation  
Desheng Cai;Shengsheng Qian;Quan Fang;Changsheng Xu  
Publication Year: 2022,Page(s):805 - 818  
HTML
- $\$A^3\$$ -FKG: Attentive Attribute-Aware Fashion Knowledge Graph for Outfit Preference Prediction  
Huijing Zhan;Jie Lin;Kenan Emir Ak;Boxin Shi;Ling-Yu Duan;Alex C. Kot  
Publication Year: 2022,Page(s):819 - 831  
Cited by: Papers (2)  
HTML
- Cross-Modal Semantic Matching Generative Adversarial Networks for Text-to-Image Synthesis  
Hongchen Tan;Xiuping Liu;Baocai Yin;Xin Li  
Publication Year: 2022,Page(s):832 - 845  
HTML
- Associated Spatio-Temporal Capsule Network for Gait Recognition  
Aite Zhao;Junyu Dong;Jianbo Li;Lin Qi;Huiyu Zhou  
Publication Year: 2022,Page(s):846 - 860  
Cited by: Papers (4)  
HTML
- CrossNet: Detecting Objects as Crosses  
Jiaxu Leng;Ying Liu;Zhihui Wang;Haibo Hu;Xinbo Gao  
Publication Year: 2022,Page(s):861 - 875  
Cited by: Papers (1)  
HTML
- V-SVR+: Support Vector Regression With Variational Privileged Information  
Yangyang Shu;Qian Li;Chang Xu;Shaowu Liu;Guandong Xu  
Publication Year: 2022,Page(s):876 - 889  
HTML
- GPS2Vec: Pre-Trained Semantic Embeddings for Worldwide GPS Coordinates  
Yifang Yin;Ying Zhang;Zhenguang Liu;Sheng Wang;Rajiv Ratn Shah;Roger Zimmermann  
Publication Year: 2022,Page(s):890 - 903  
HTML
- Unpaired Image Captioning With semantic-Constrained Self-Learning  
Huixia Ben;Yingwei Pan;Yehao Li;Ting Yao;Richang Hong;Meng Wang;Tao Mei  
Publication Year: 2022,Page(s):904 - 916  
Cited by: Papers (3)  
HTML
- Fine-Grained Categorization From RGB-D Images  
Yanhao Tan;Mohammad Muntahir Rahman;Yanfu Yan;Jian Xue;Ling Shao;Ke Lu  
Publication Year: 2022,Page(s):917 - 928  
HTML
- Collaborative Learning With a Multi-Branch Framework for Feature Enhancement  
Xiao Luan;Yuanyuan Zhao;Weihua Ou;Linghui Liu;Weisheng Li;Yucheng Shu;Hongmin Geng  
Publication Year: 2022,Page(s):929 - 941  
HTML
- Audio-Visual Tracking of Concurrent Speakers  
Xinyuan Qian;Alessio Brutti;Oswald Lanz;Maurizio Omologo;Andrea Cavallaro  
Publication Year: 2022,Page(s):942 - 954  
Cited by: Papers (1)  
HTML
- TERA: Screen-to-Camera Image Code With Transparency, Efficiency, Robustness and Adaptability  
Han Fang;Dongdong Chen;Feng Wang;Zehua Ma;Honggu Liu;Wenbo Zhou;Weiming Zhang;Nenghai Yu  
Publication Year: 2022,Page(s):955 - 967  
HTML
- Semantically Meaningful Class Prototype Learning for One-Shot Image Segmentation  
Tao Chen;Guo-Sen Xie;Yazhou Yao;Qiong Wang;Fumin Shen;Zhenmin Tang;Jian Zhang  
Publication Year: 2022,Page(s):968 - 980  
Cited by: Papers (2)  
HTML
- Online Residual Quantization Via Streaming Data Correlation Preserving  
Pandeng Li;Hongtao Xie;Shaobo Min;Zheng-Jun Zha;Yongdong Zhang  
Publication Year: 2022,Page(s):981 - 994  
Cited by: Papers (1)  
HTML
- A CRF-Based Framework for Tracklet Inactivation in Online Multi-Object Tracking  
Tianze Gao;Huihui Pan;Zidong Wang;Huijun Gao  
Publication Year: 2022,Page(s):995 - 1007  
HTML
- AdaCrowd: Unlabeled Scene Adaptation for Crowd Counting  
Mahesh Kumar Krishna Reddy;Mrigank Rochan;Yiwei Lu;Yang Wang  
Publication Year: 2022,Page(s):1008 - 1019  
Cited by: Papers (1)  
HTML

Seek Common Ground While Reserving Differences: A Model-Agnostic Module for Noisy Domain Adaptation  
Yukun Zuo;Hantao Yao;Liansheng Zhuang;Changsheng Xu  
Publication Year: 2022,Page(s):1020 - 1030  
[HTML](#)

Inter-Domain Adaptation Label for Data Augmentation in Vehicle Re-Identification  
Qi Wang;Weidong Min;Qing Han;Qian Liu;Cheng Zha;Haoyu Zhao;Zitai Wei  
Publication Year: 2022,Page(s):1031 - 1041  
Cited by: Papers (4)  
[HTML](#)

Enhanced Feature Alignment for Unsupervised Domain Adaptation of Semantic Segmentation  
Tao Chen;Shui-Hua Wang;Qiong Wang;Zheng Zhang;Guo-Sen Xie;Zhenmin Tang  
Publication Year: 2022,Page(s):1042 - 1054  
[HTML](#)

Generalized Large Margin kNN for Partial Label Learning  
Xiuwen Gong;Jiahui Yang;Dong Yuan;Wei Bao  
Publication Year: 2022,Page(s):1055 - 1066  
[HTML](#)

Multi-Modal Variational Graph Auto-Encoder for Recommendation Systems  
Jing Yi;Zhenzhong Chen  
Publication Year: 2022,Page(s):1067 - 1079  
[HTML](#)

LR-SVM+: Learning Using Privileged Information with Noisy Labels  
Zhengning Wu;Xiaobo Xia;Ruxin Wang;Jiatong Li;Jun Yu;Yinian Mao;Tongliang Liu  
Publication Year: 2022,Page(s):1080 - 1092  
[HTML](#)

Co-LDL: A Co-Training-Based Label Distribution Learning Method for Tackling Label Noise  
Zeren Sun;Huafeng Liu;Qiong Wang;Tianfei Zhou;Qi Wu;Zhenmin Tang  
Publication Year: 2022,Page(s):1093 - 1104  
[HTML](#)

Exploiting Web Images for Fine-Grained Visual Recognition via Dynamic Loss Correction and Global Sample Selection  
Huafeng Liu;Haofeng Zhang;Jianfeng Lu;Zhenmin Tang  
Publication Year: 2022,Page(s):1105 - 1115  
[HTML](#)

Deep Co-Image-Label Hashing for Multi-Label Image Retrieval  
Xiaobo Shen;Guohua Dong;Yuhui Zheng;Long Lan;Ivor W. Tsang;Quan-Sen Sun  
Publication Year: 2022,Page(s):1116 - 1126  
[HTML](#)

Ensemble Learning With Manifold-Based Data Splitting for Noisy Label Correction  
Hao-Chiang Shao;Hsin-Chieh Wang;Weng-Tai Su;Chia-Wen Lin  
Publication Year: 2022,Page(s):1127 - 1140  
[HTML](#)

Regularized Two Granularity Loss Function for Weakly Supervised Video Moment Retrieval  
Junya Teng;Xiankai Lu;Yongshun Gong;Xinfang Liu;Xiushan Nie;Yilong Yin  
Publication Year: 2022,Page(s):1141 - 1151  
[HTML](#)

Learning to Recognize Human Actions From Noisy Skeleton Data Via Noise Adaptation  
Sijie Song;Jiaying Liu;Lilang Lin;Zongming Guo  
Publication Year: 2022,Page(s):1152 - 1163  
[HTML](#)

Annealing Genetic GAN for Imbalanced Web Data Learning  
Jingyu Hao;Chengjia Wang;Guang Yang;Zhifan Gao;Jinglin Zhang;Heye Zhang  
Publication Year: 2022,Page(s):1164 - 1174  
Cited by: Papers (1)  
[HTML](#)

Learning From Web Recipe-Image Pairs for Food Recognition: Problem, Baselines and Performance  
Bin Zhu;Chong-Wah Ngo;Wing-Kwong Chan  
Publication Year: 2022,Page(s):1175 - 1185  
[HTML](#)

Dynamic Training Data Dropout for Robust Deep Face Recognition  
Yaoyao Zhong;Weihong Deng;Han Fang;Jiani Hu;Dongyue Zhao;Xian Li;Dongchao Wen  
Publication Year: 2022,Page(s):1186 - 1197  
[HTML](#)

Robust Learning From Noisy Web Images Via Data Purification for Fine-Grained Recognition  
Chuanyi Zhang;Qiong Wang;Guosen Xie;Qi Wu;Fumin Shen;Zhenmin Tang  
Publication Year: 2022,Page(s):1198 - 1209  
[HTML](#)

Active Gradual Domain Adaptation: Dataset and Approach  
Shiji Zhou;Lianzhe Wang;Shanghang Zhang;Zhi Wang;Wenwu Zhu  
Publication Year: 2022,Page(s):1210 - 1220  
[HTML](#)

Cross-Modal Dynamic Networks for Video Moment Retrieval With Text Query  
Gongmian Wang;Xing Xu;Fumin Shen;Huimin Lu;Yanli Ji;Heng Tao Shen  
Publication Year: 2022,Page(s):1221 - 1232  
[HTML](#)

SPG-VTON: Semantic Prediction Guidance for Multi-Pose Virtual Try-on  
Bingwen Hu;Ping Liu;Zhedong Zheng;Mingwu Ren  
Publication Year: 2022,Page(s):1233 - 1246  
[HTML](#)

Guest Editorial: Learning From Noisy Multimedia Data  
Jian Zhang;Alan Hanjalic;Ramesh Jain;Xiansheng Hua;Shin'ichi Satoh;Yazhou Yao;Dan Zeng  
Publication Year: 2022,Page(s):1247 - 1252  
[HTML](#)

Learning to Simulate Complex Scenes for Street Scene Segmentation  
Zhenfeng Xue;Weijie Mao;Liang Zheng  
Publication Year: 2022,Page(s):1253 - 1265  
Cited by: Papers (1)  
[HTML](#)

Align R-CNN: A Pairwise Head Network for Visual Relationship Detection  
Mitra Tajrobehkar;Kaihua Tang;Hanwang Zhang;Joo-Hwee Lim  
Publication Year: 2022,Page(s):1266 - 1276  
[HTML](#)

Tripartite Graph Regularized Latent Low-Rank Representation for Fashion Compatibility Prediction  
Peiguang Jing;Jing Zhang;Liqliang Nie;Shu Ye;Jing Liu;Yuting Su  
Publication Year: 2022,Page(s):1277 - 1287  
HTML

High Capacity Reversible Data Hiding in Encrypted Image Based on Adaptive MSB Prediction  
Yaomin Wang;Wenguang He  
Publication Year: 2022,Page(s):1288 - 1298  
Cited by: Papers (2)  
HTML

Structure-Guided Arbitrary Style Transfer for Artistic Image and Video  
Shiguang Liu;Ting Zhu  
Publication Year: 2022,Page(s):1299 - 1312  
Cited by: Papers (3)  
HTML

Deep Auto-Encoders With Sequential Learning for Multimodal Dimensional Emotion Recognition  
Dung Nguyen;Duc Thanh Nguyen;Rui Zeng;Thanh Thi Nguyen;Son N. Tran;Thin Nguyen;Sridha Sridharan;Clinton Fookes  
Publication Year: 2022,Page(s):1313 - 1324  
Cited by: Papers (2)  
HTML

Alleviating Domain Shift via Discriminative Learning for Generalized Zero-Shot Learning  
Yalan Ye;Yukun He;Tongjie Pan;Jingjing Li;Heng Tao Shen  
Publication Year: 2022,Page(s):1325 - 1337  
Cited by: Papers (5)  
HTML

Frame-Wise Cross-Modal Matching for Video Moment Retrieval  
Haoyu Tang;Jihua Zhu;Meng Liu;Zan Gao;Zhiyong Cheng  
Publication Year: 2022,Page(s):1338 - 1349  
HTML

Zwei: A Self-Play Reinforcement Learning Framework for Video Transmission Services  
Tianchi Huang;Rui-Xiao Zhang;Lifeng Sun  
Publication Year: 2022,Page(s):1350 - 1365  
HTML

COLA-Net: Collaborative Attention Network for Image Restoration  
Chong Mou;Jian Zhang;Xiaopeng Fan;Hangfan Liu;Ronggang Wang  
Publication Year: 2022,Page(s):1366 - 1377  
Cited by: Papers (7)  
HTML

Disentangled Feature Networks for Facial Portrait and Caricature Generation  
Kaihao Zhang;Wenhan Luo;Lin Ma;Wenqi Ren;Hongdong Li  
Publication Year: 2022,Page(s):1378 - 1388  
HTML

Blind Stereoscopic Image Quality Evaluator Based on Binocular Semantic and Quality Channels  
Kyohoon Sim;Jiachen Yang;Wen Lu;Xinbo Gao  
Publication Year: 2022,Page(s):1389 - 1398  
Cited by: Papers (12)  
HTML

Multilevel Anomaly Detection Through Variational Autoencoders and Bayesian Models for Self-Aware Embodied Agents  
Giulia Slavic;Mohamad Baydoun;Damian Campo;Lucio Marcenaro;Carlo Regazzoni  
Publication Year: 2022,Page(s):1399 - 1414  
Cited by: Papers (4)  
HTML

Unsupervised Image and Text Fusion for Travel Information Enhancement  
Lu Zhang;Jingsong Xu;Yongshun Gong;Litao Yu;Jian Zhang;Jialie Shen  
Publication Year: 2022,Page(s):1415 - 1425  
HTML

Show, Price and Negotiate: A Negotiator With Online Value Look-Ahead  
Amin Parvaneh;Ehsan Abbasnejad;Qi Wu;Javen Qinfeng Shi;Anton van den Hengel  
Publication Year: 2022,Page(s):1426 - 1434  
HTML

Unsupervised Image-to-Image Translation via Pre-Trained StyleGAN2 Network  
Jialu Huang;Jing Liao;Sam Kwong  
Publication Year: 2022,Page(s):1435 - 1448  
HTML

Multi-Modal Meta Multi-Task Learning for Social Media Rumor Detection  
Huaiwen Zhang;Shengsheng Qian;Quan Fang;Changsheng Xu  
Publication Year: 2022,Page(s):1449 - 1459  
Cited by: Papers (2)  
HTML

A Total Variation With Joint Norms For Infrared and Visible Image Fusion  
Rencan Nie;Chaozhen Ma;Jinde Cao;Hongwei Ding;Dongming Zhou  
Publication Year: 2022,Page(s):1460 - 1472  
Cited by: Papers (4)  
HTML

Fine-Grained Attention and Feature-Sharing Generative Adversarial Networks for Single Image Super-Resolution  
Yitong Yan;Chuangchuang Liu;Changyou Chen;Xianfang Sun;Longcun Jin;Xinyi Peng;Xiang Zhou  
Publication Year: 2022,Page(s):1473 - 1487  
HTML

Rhythm-Aware Sequence-to-Sequence Learning for Labanotation Generation With Gesture-Sensitive Graph Convolutional Encoding  
Min Li;Zhenjiang Miao;Xiao-Ping Zhang;Wanru Xu;Cong Ma;Ningwei Xie  
Publication Year: 2022,Page(s):1488 - 1502  
Cited by: Papers (1)  
HTML

A Discriminative Vectorial Framework for Multi-Modal Feature Representation  
Lei Gao;Ling Guan  
Publication Year: 2022,Page(s):1503 - 1514  
HTML

Spatiotemporal Saliency Representation Learning for Video Action Recognition  
Yongqiang Kong;Yunhong Wang;Annan Li  
Publication Year: 2022,Page(s):1515 - 1528  
HTML

Design and Analysis of MEC- and Proactive Caching-  
Based 360° Mobile VR Video Streaming  
Qi Cheng;Hangguan Shan;Weihua Zhuang;Lu Yu;Zhaoyang  
Zhang;Tony Q. S. Quek  
Publication Year: 2022,Page(s):1529 - 1544  
Cited by: Papers (2)  
HTML

A Blind Color Separation Model for Faithful Palette-Based Image  
Recoloring  
Qing Zhang;Yongwei Nie;Lei Zhu;Chunxia Xiao;Wei-Shi Zheng  
Publication Year: 2022,Page(s):1545 - 1557  
Cited by: Papers (2)  
HTML

Bal-R2CNN: High Quality Recurrent Object Detection With Balance  
Optimization  
Xiaoyu Chen;Hongliang Li;Qingbo Wu;Fanman Meng;Heqian Qiu  
Publication Year: 2022,Page(s):1558 - 1569  
HTML

Alleviating Modality Bias Training for Infrared-Visible Person Re-  
Identification  
Yan Huang;Qiang Wu;Jingsong Xu;Yi Zhong;Peng  
Zhang;Zhaoxiang Zhang  
Publication Year: 2022,Page(s):1570 - 1582  
Cited by: Papers (1)  
HTML

Multi-Scale Sparse Graph Convolutional Network For the  
Assessment of Parkinsonian Gait  
Rui Guo;Xiangxin Shao;Chencheng Zhang;Xiaohua Qian  
Publication Year: 2022,Page(s):1583 - 1594  
Cited by: Papers (3)  
HTML

List-Wise Rank Learning for Stereoscopic Image Retargeting  
Quality Assessment  
Xuejin Wang;Feng Shao;Qiuping Jiang;Xiongli Chai;Xiangchao  
Meng;Yo-Sung Ho  
Publication Year: 2022,Page(s):1595 - 1608  
HTML

Recurrent Exposure Generation for Low-Light Face Detection  
Jinxu Liang;Jingwen Wang;Yuhui Quan;Tianyi Chen;Jiaying  
Liu;Haibin Ling;Yong Xu  
Publication Year: 2022,Page(s):1609 - 1621  
Cited by: Papers (1)  
HTML

End-to-End Rain Removal Network Based on Progressive Residual  
Detail Supplement  
Yong Yang;Juwei Guan;Shuying Huang;Weiguo Wan;Yating  
Xu;Jiaxiang Liu  
Publication Year: 2022,Page(s):1622 - 1636  
Cited by: Papers (1)  
HTML

Detecting 3D Points of Interest Using Projective Neural Networks  
Zhenyu Shu;Sipeng Yang;Shiqing Xin;Chaoyi Pang;Xiaogang  
Jin;Ladislav Kavan;Ligang Liu  
Publication Year: 2022,Page(s):1637 - 1650  
HTML

Employing Bilinear Fusion and Saliency Prior Information for RGB-  
D Salient Object Detection  
Nianchang Huang;Yang Yang;Dingwen Zhang;Qiang  
Zhang;Jungong Han  
Publication Year: 2022,Page(s):1651 - 1664  
Cited by: Papers (2)  
HTML

Beyond Triplet Loss: Person Re-Identification With Fine-Grained  
Difference-Aware Pairwise Loss  
Cheng Yan;Guansong Pang;Xiao Bai;Changhong Liu;Xin Ning;Lin  
Gu;Jun Zhou  
Publication Year: 2022,Page(s):1665 - 1677  
Cited by: Papers (52)  
HTML

Multi-Localized Sensitive Autoencoder-Attention-LSTM For  
Skeleton-based Action Recognition  
Wing Ng;Mingyang Zhang;Ting Wang  
Publication Year: 2022,Page(s):1678 - 1690  
Cited by: Papers (1)  
HTML

Low-Latency Network-Adaptive Error Control for Interactive  
Streaming  
Salma Emara;Silas L. Fong;Baochun Li;Ashish Khisti;Wai-Tian  
Tan;Xiaoqing Zhu;John Apostolopoulos  
Publication Year: 2022,Page(s):1691 - 1706  
HTML

Visual Perception Based Algorithm for Fast Depth Intra Coding of  
3D-HEVC  
Jie-Ru Lin;Mei-Juan Chen;Chia-Hung Yeh;Yong-Ci Chen;Lih-Jen  
Kau;Chuan-Yu Chang;Min-Hui Lin  
Publication Year: 2022,Page(s):1707 - 1720  
Cited by: Papers (5)  
HTML

Personalized Image Recoloring for Color Vision Deficiency  
Compensation  
Zhenyang Zhu;Masahiro Toyoura;Kentaro Go;Kenji Kashiwagi;Issei  
Fujishiro;Tien-Tsin Wong;Xiaoyang Mao  
Publication Year: 2022,Page(s):1721 - 1734  
Cited by: Papers (2)  
HTML

Deep-IRTARGET: An Automatic Target Detector in Infrared Imagery  
Using Dual-Domain Feature Extraction and Allocation  
Ruiheng Zhang;Lixin Xu;Zhengyu Yu;Ye Shi;Chengpo Mu;Min Xu  
Publication Year: 2022,Page(s):1735 - 1749  
Cited by: Papers (7)  
HTML

A Comprehensive Study on Deep Learning-Based Methods for Sign  
Language Recognition  
Nikolas Adaloglou;Theocharis Chatzis;Ilias Papastratis;Andreas  
Stergioulas;Georgios Th. Papadopoulos;Vassia  
Zacharopoulou;George J. Xydopoulos;Klimnis Atzakas;Dimitris  
Papazachariou;Petros Daras  
Publication Year: 2022,Page(s):1750 - 1762  
Cited by: Papers (6)  
HTML

Disentangled Representation Learning for Cross-Modal Biometric  
Matching  
Hailong Ning;Xiangtao Zheng;Xiaoqiang Lu;Yuan Yuan  
Publication Year: 2022,Page(s):1763 - 1774  
Cited by: Papers (2)  
HTML



Dual Attention on Pyramid Feature Maps for Image Captioning  
Litao Yu;Jian Zhang;Qiang Wu  
Publication Year: 2022,Page(s):1775 - 1786  
Cited by: Papers (3)  
HTML

Decoupled Representation Learning for Character Glyph Synthesis  
Xiyang Liu;Gaofeng Meng;Jianlong Chang;Ruiguang Hu;Shiming Xiang;Chunhong Pan  
Publication Year: 2022,Page(s):1787 - 1799  
Cited by: Papers (2)  
HTML

Weakly-Supervised Facial Expression Recognition in the Wild With Noisy Data  
Feifei Zhang;Mingliang Xu;Changsheng Xu  
Publication Year: 2022,Page(s):1800 - 1814  
HTML

Voxel Structure-Based Mesh Reconstruction From a 3D Point Cloud  
Chenlei Lv;Weisi Lin;Baoquan Zhao  
Publication Year: 2022,Page(s):1815 - 1829  
Cited by: Papers (1)  
HTML

Multimodal Marketing Intent Analysis for Effective Targeted Advertising  
Lu Zhang;Jialie Shen;Jian Zhang;Jingsong Xu;Zhibin Li;Yazhou Yao;Litao Yu  
Publication Year: 2022,Page(s):1830 - 1843  
Cited by: Papers (3)  
HTML

Feature Estimations Based Correlation Distillation for Incremental Image Retrieval  
Wei Chen;Yu Liu;Nan Pu;Weiping Wang;Li Liu;Michael S. Lew  
Publication Year: 2022,Page(s):1844 - 1856  
Cited by: Papers (2)  
HTML

Action Coherence Network for Weakly-Supervised Temporal Action Localization  
Yuanhao Zhai;Le Wang;Wei Tang;Qilin Zhang;Nanning Zheng;Gang Hua  
Publication Year: 2022,Page(s):1857 - 1870  
Cited by: Papers (1)  
HTML

Discriminative Invariant Alignment for Unsupervised Domain Adaptation  
Yuwu Lu;Desheng Li;Wenjing Wang;Zhihui Lai;Jie Zhou;Xuelong Li  
Publication Year: 2022,Page(s):1871 - 1882  
HTML

Accurate Scene Text Detection Via Scale-Aware Data Augmentation and Shape Similarity Constraint  
Pengwen Dai;Yang Li;Hua Zhang;Jingzhi Li;Xiaochun Cao  
Publication Year: 2022,Page(s):1883 - 1895  
Cited by: Papers (1)  
HTML

Zero-Shot Video Event Detection With High-Order Semantic Concept Discovery and Matching  
Yang Jin;Wenhao Jiang;Yi Yang;Yadong Mu  
Publication Year: 2022,Page(s):1896 - 1908  
HTML

Approximate k-NN Graph Construction: A Generic Online Approach  
Wan-Lei Zhao;Hui Wang;Chong-Wah Ngo  
Publication Year: 2022,Page(s):1909 - 1921  
HTML

Structured Attention Network for Referring Image Segmentation  
Liang Lin;Pengxiang Yan;Xiaoqian Xu;Sibe Yang;Kun Zeng;Guanbin Li  
Publication Year: 2022,Page(s):1922 - 1932  
HTML

Attribute-Induced Bias Eliminating for Transductive Zero-Shot Learning  
Hantao Yao;Shaobo Min;Yongdong Zhang;Changsheng Xu  
Publication Year: 2022,Page(s):1933 - 1942  
HTML

Geometric Back-Projection Network for Point Cloud Classification  
Shi Qiu;Saeed Anwar;Nick Barnes  
Publication Year: 2022,Page(s):1943 - 1955  
Cited by: Papers (6)  
HTML

SiamCorners: Siamese Corner Networks for Visual Tracking  
Kai Yang;Zhenyu He;Wenjie Pei;Zikun Zhou;Xin Li;Di Yuan;Haijun Zhang  
Publication Year: 2022,Page(s):1956 - 1967  
Cited by: Papers (7)  
HTML

Extended Feature Pyramid Network for Small Object Detection  
Chunfang Deng;Mengmeng Wang;Liang Liu;Yong Liu;Yunliang Jiang  
Publication Year: 2022,Page(s):1968 - 1979  
Cited by: Papers (13)  
HTML

Underwater Image Quality Assessment: Subjective and Objective Methods  
Pengfei Guo;Lang He;Shuangyin Liu;Delu Zeng;Hantao Liu  
Publication Year: 2022,Page(s):1980 - 1989  
Cited by: Papers (2)  
HTML

Gated SwitchGAN for Multi-Domain Facial Image Translation  
Xiaokang Zhang;Yuanlue Zhu;Wenting Chen;Wenshuang Liu;Linlin Shen  
Publication Year: 2022,Page(s):1990 - 2003  
HTML

Image Difference Captioning With Instance-Level Fine-Grained Feature Representation  
Qingbao Huang;Yu Liang;Jielong Wei;Yi Cai;Hanyu Liang;Ho-fung Leung;Qing Li  
Publication Year: 2022,Page(s):2004 - 2017  
Cited by: Papers (1)  
HTML

Multi-Task Center-of-Pressure Metrics Estimation With Graph Convolutional Network  
Chen Du;Sarah Graham;Colin Depp;Truong Nguyen  
Publication Year: 2022,Page(s):2018 - 2033  
HTML



Mixed Dish Recognition With Contextual Relation and Domain Alignment

Lixi Deng;Jingjing Chen;Chong-Wah Ngo;Qianru Sun;Sheng Tang;Yongdong Zhang;Tat-Seng Chua

Publication Year: 2022,Page(s):2034 - 2045

Cited by: Papers (1)

HTML

A Social Condition-Enhanced Network for Recognizing Power Distance Using Expressive Prosody and Intrinsic Brain Connectivity

Fu-Sheng Tsai;Wei-Wen Chang;Chi-Chun Lee

Publication Year: 2022,Page(s):2046 - 2057

HTML

Deformable Template Network (DTN) for Object Detection

Shuai Wu;Yong Xu;Bob Zhang;Jian Yang;David Zhang

Publication Year: 2022,Page(s):2058 - 2068

Cited by: Papers (1)

HTML

Real-Time and Accurate UAV Pedestrian Detection for Social Distancing Monitoring in COVID-19 Pandemic

Zhenfeng Shao;Gui Cheng;Jiayi Ma;Zhongyuan Wang;Jiaming Wang;Deren Li

Publication Year: 2022,Page(s):2069 - 2083

Cited by: Papers (13)

HTML

A High-Performance CNN-Applied HEVC Steganography Based on Diamond-Coded PU Partition Modes

Jindou Liu;Zhaohong Li;Xinghao Jiang;Zhenzhen Zhang

Publication Year: 2022,Page(s):2084 - 2097

HTML

Bilateral Weighted Regression Ranking Model With Spatial-Temporal Correlation Filter for Visual Tracking

Hu Zhu;Hao Peng;Guoxia Xu;Lizhen Deng;Yueying Cheng;Aiguo Song

Publication Year: 2022,Page(s):2098 - 2111

Cited by: Papers (3)

HTML

Modality Disentangled Discriminator for Text-to-Image Synthesis

Fangxiang Feng;Tianrui Niu;Ruifan Li;Xiaojie Wang

Publication Year: 2022,Page(s):2112 - 2124

HTML

Consolidated Dataset and Metrics for High-Dynamic-Range Image Quality

Aliaksei Mikhailiuk;María Pérez-Ortiz;Dingcheng Yue;Wilson Suen;Rafał K. Mantiuk

Publication Year: 2022,Page(s):2125 - 2138

Cited by: Papers (4)

HTML

3DBodyNet: Fast Reconstruction of 3D Animatable Human Body Shape From a Single Commodity Depth Camera

Pengpeng Hu;Edmond Shu-Lim Ho;Adrian Munteanu

Publication Year: 2022,Page(s):2139 - 2149

Cited by: Papers (4)

HTML

A Reinforcement-Learning-Based Energy-Efficient Framework for Multi-Task Video Analytics Pipeline

Yingying Zhao;Mingzhi Dong;Yujiang Wang;Da Feng;Qin Lv;Robert P. Dick;Dongsheng Li;Tun Lu;Ning Gu;Li Shang

Publication Year: 2022,Page(s):2150 - 2163

Cited by: Papers (2)

HTML

Multiframe-to-Multiframe Network for Video Denoising

Huaian Chen;Yi Jin;Kai Xu;Yuxuan Chen;Changan Zhu

Publication Year: 2022,Page(s):2164 - 2178

Cited by: Papers (2)

HTML

HoloCast+: Hybrid Digital-Analog Transmission for Graceful Point Cloud Delivery With Graph Fourier Transform

Takuya Fujihashi;Toshiaki Koike-Akino;Takashi Watanabe;Philip V. Orlik

Publication Year: 2022,Page(s):2179 - 2191

HTML

CCAFNet: Crossflow and Cross-Scale Adaptive Fusion Network for

Detecting Salient Objects in RGB-D Images

Wujie Zhou;Yun Zhu;Jingsheng Lei;Jian Wan;Lu Yu

Publication Year: 2022,Page(s):2192 - 2204

Cited by: Papers (12)

HTML

Fast Adaptive Meta-Learning for Few-Shot Image Generation

Aniwat Phaphuangwittayakul;Yi Guo;Fangli Ying

Publication Year: 2022,Page(s):2205 - 2217

Cited by: Papers (3)

HTML

Automatic Tagging by Leveraging Visual and Annotated Features in Social Media

Jinpeng Chen;Pinguang Ying;Xiangling Fu;Xiaopeng Luo;Hao Guan;Kaimin Wei

Publication Year: 2022,Page(s):2218 - 2229

HTML

Broad-to-Narrow Registration and Identification of 3D Objects in

Partially Scanned and Cluttered Point Clouds

Gerasimos Arvanitis;Evangelia I. Zacharaki;Libor

Váša;Konstantinos Moustakas

Publication Year: 2022,Page(s):2230 - 2245

HTML

Self-Guided Adaptation: Progressive Representation Alignment for Domain Adaptive Object Detection

Chong Zhang;Zongxian Li;Jingjing Liu;Peixi Peng;Qixiang

Ye;Shijian Lu;Tiejun Huang;Yonghong Tian

Publication Year: 2022,Page(s):2246 - 2258

Cited by: Papers (1)

HTML

Iterative Network for Image Super-Resolution

Yuqing Liu;Shiqi Wang;Jian Zhang;Shanshe Wang;Siwei Ma;Wen

Gao

Publication Year: 2022,Page(s):2259 - 2272

HTML

Holographic Feature Learning of Egocentric-Exocentric Videos for Multi-Domain Action Recognition

Yi Huang;Xiaoshan Yang;Junyun Gao;Changsheng Xu

Publication Year: 2022,Page(s):2273 - 2286

HTML

Leveraging Multiple Relations for Fashion Trend Forecasting Based on Social Media

Yujuan Ding;Yunshan Ma;Lizi Liao;Wai Keung Wong;Tat-Seng

Chua

Publication Year: 2022,Page(s):2287 - 2299

HTML

Catching the Moment With LoL+ in Twitch-Like Low-Latency Live Streaming Platforms  
Abdelhak Bentaleb; Mehmet N. Akcay; May Lim; Ali C. Begen; Roger Zimmermann  
Publication Year: 2022, Page(s): 2300 - 2314  
Cited by: Papers (2)  
[HTML](#)

An FCNN-Based Super-Resolution Mmwave Radar Framework for Contactless Musical Instrument Interface  
Josiah W. Smith; Orges Furxhi; Murat Torlak  
Publication Year: 2022, Page(s): 2315 - 2328  
Cited by: Papers (1)  
[HTML](#)

Push & Pull: Transferable Adversarial Examples With Attentive Attack  
Lianli Gao; Zijie Huang; Jingkuan Song; Yang Yang; Heng Tao Shen  
Publication Year: 2022, Page(s): 2329 - 2338  
[HTML](#)

Zero-Shot Single-Microphone Sound Classification and Localization in a Building Via the Synthesis of Unseen Features  
Seungjun Lee; Haesang Yang; Hwiyoung Choi; Woojae Seong  
Publication Year: 2022, Page(s): 2339 - 2351  
[HTML](#)

Convolutional Neural Network-Based Occupancy Map Accuracy Improvement for Video-Based Point Cloud Compression  
Wei Jia; Li Li; Anique Akhtar; Zhu Li; Shan Liu  
Publication Year: 2022, Page(s): 2352 - 2365  
Cited by: Papers (1)  
[HTML](#)

Towards Fast and Robust Real Image Denoising With Attentive Neural Network and PID Controller  
Ruijun Ma; Shuyi Li; Bob Zhang; Zhengming Li  
Publication Year: 2022, Page(s): 2366 - 2377  
Cited by: Papers (1)  
[HTML](#)

FVV Live: A Real-Time Free-Viewpoint Video System With Consumer Electronics Hardware  
Pablo Carballeira; Carlos Carmona; César Díaz; Daniel Berjón; Daniel Corregidor; Julián Cabrera; Francisco Morán; Carmen Doblado; Sergio Arnaldo; María del Mar Martín; Narciso García  
Publication Year: 2022, Page(s): 2378 - 2391  
[HTML](#)

Scene Recognition Mechanism for Service Robot Adapting Various Families: A CNN-Based Approach Using Multi-Type Cameras  
Shaopeng Liu; Guohui Tian; Ying Zhang; Peng Duan  
Publication Year: 2022, Page(s): 2392 - 2406  
Cited by: Papers (1)  
[HTML](#)

Informative Feature Disentanglement for Unsupervised Domain Adaptation  
Wanxia Deng; Lingjun Zhao; Qing Liao; Deke Guo; Gangyao Kuang; Dewen Hu; Matti Pietikäinen; Li Liu  
Publication Year: 2022, Page(s): 2407 - 2421  
[HTML](#)

Combining Retargeting Quality and Depth Perception Measures for Quality Evaluation of Retargeted Stereopairs  
Xuejin Wang; Feng Shao; Qiuping Jiang; Zhenqi Fu; Xiangchao Meng; Ke Gu; Yo-Sung Ho  
Publication Year: 2022, Page(s): 2422 - 2434  
[HTML](#)

Cross-Modality Fusion and Progressive Integration Network for Saliency Prediction on Stereoscopic 3D Images  
Yudong Mao; Qiuping Jiang; Runmin Cong; Wei Gao; Feng Shao; Sam Kwong  
Publication Year: 2022, Page(s): 2435 - 2448  
[HTML](#)

MFDNet: Collaborative Poses Perception and Matrix Fisher Distribution for Head Pose Estimation  
Hai Liu; Shuai Fang; Zhaoli Zhang; Duantengchuan Li; Ke Lin; Jiazhang Wang  
Publication Year: 2022, Page(s): 2449 - 2460  
Cited by: Papers (4)  
[HTML](#)

Consensus Graph Learning for Multi-View Clustering  
Zhenglai Li; Chang Tang; Xinwang Liu; Xiao Zheng; Wei Zhang; En Zhu  
Publication Year: 2022, Page(s): 2461 - 2472  
[HTML](#)

Graph-Based Visual-Semantic Entanglement Network for Zero-Shot Image Recognition  
Yang Hu; Guihua Wen; Adriane Chapman; Pei Yang; Mingnan Luo; Yingxue Xu; Dan Dai; Wendy Hall  
Publication Year: 2022, Page(s): 2473 - 2487  
[HTML](#)

A Unimodal Representation Learning and Recurrent Decomposition Fusion Structure for Utterance-Level Multimodal Embedding Learning  
Sijie Mai; Haifeng Hu; Songlong Xing  
Publication Year: 2022, Page(s): 2488 - 2501  
Cited by: Papers (1)  
[HTML](#)

Uncertainty-Aware Unsupervised Domain Adaptation in Object Detection  
Dayan Guan; Jiaying Huang; Aoran Xiao; Shijian Lu; Yanpeng Cao  
Publication Year: 2022, Page(s): 2502 - 2514  
Cited by: Papers (7)  
[HTML](#)

Cross-Modal Food Retrieval: Learning a Joint Embedding of Food Images and Recipes With Semantic Consistency and Attention Mechanism  
Hao Wang; Doyen Sahoo; Chenghao Liu; Ke Shu; Palakorn Achananuparp; Ee-peng Lim; Steven C. H. Hoi  
Publication Year: 2022, Page(s): 2515 - 2525  
[HTML](#)

MFFENet: Multiscale Feature Fusion and Enhancement Network For RGB-Thermal Urban Road Scene Parsing  
Wujie Zhou; Xinyang Lin; Jingsheng Lei; Lu Yu; Jenq-Neng Hwang  
Publication Year: 2022, Page(s): 2526 - 2538  
Cited by: Papers (5)  
[HTML](#)

Speaker-Independent Speech Animation Using Perceptual Loss Functions and Synthetic Data  
Danny Websdale; Sarah Taylor; Ben Milner  
Publication Year: 2022, Page(s): 2539 - 2552  
Cited by: Papers (1)  
[HTML](#)

Multi-Level Temporal Dilated Dense Prediction for Action Recognition  
Jinpeng Wang;Yiqi Lin;Manlin Zhang;Yuan Gao;Andy J. Ma  
Publication Year: 2022,Page(s):2553 - 2566  
Cited by: Papers (2)  
HTML

Projective Multiple Kernel Subspace Clustering  
Mengjing Sun;Siwei Wang;Pei Zhang;Xinwang Liu;Xifeng Guo;Sihang Zhou;En Zhu  
Publication Year: 2022,Page(s):2567 - 2579  
Cited by: Papers (1)  
HTML

Instance GNN: A Learning Framework for Joint Symbol Segmentation and Recognition in Online Handwritten Diagrams  
Xiao-Long Yun;Yan-Ming Zhang;Fei Yin;Cheng-Lin Liu  
Publication Year: 2022,Page(s):2580 - 2594  
HTML

Discover Micro-Influencers for Brands via Better Understanding  
Shaokun Wang;Tian Gan;Yuan Liu;Li Zhang;JianLong Wu;Liqiang Nie  
Publication Year: 2022,Page(s):2595 - 2605  
HTML

TaoHighlight: Commodity-Aware Multi-Modal Video Highlight Detection in E-Commerce  
Zhaoyu Guo;Zhou Zhao;WeiKe Jin;Dazhou Wang;Ruitao Liu;Jun Yu  
Publication Year: 2022,Page(s):2606 - 2616  
HTML

Deep-PCAC: An End-to-End Deep Lossy Compression Framework for Point Cloud Attributes  
Xihua Sheng;Li Li;Dong Liu;Zhiwei Xiong;Zhu Li;Feng Wu  
Publication Year: 2022,Page(s):2617 - 2632  
Cited by: Papers (1)  
HTML

Crowd Counting Via Perspective-Guided Fractional-Dilation Convolution  
Zhaoyi Yan;Ruimao Zhang;Hongzhi Zhang;Qingfu Zhang;Wangmeng Zuo  
Publication Year: 2022,Page(s):2633 - 2647  
Cited by: Papers (1)  
HTML

LAGA-Net: Local-and-Global Attention Network for Skeleton Based Action Recognition  
Rongjie Xia;Yanshan Li;Wenhan Luo  
Publication Year: 2022,Page(s):2648 - 2661  
HTML

Conditional Sentence Generation and Cross-Modal Reranking for Sign Language Translation  
Jian Zhao;Weizhen Qi;Wengang Zhou;Nan Duan;Ming Zhou;Houqiang Li  
Publication Year: 2022,Page(s):2662 - 2672  
HTML

CariMe: Unpaired Caricature Generation With Multiple Exaggerations  
Zheng Gu;Chuanqi Dong;Jing Huo;Wenbin Li;Yang Gao  
Publication Year: 2022,Page(s):2673 - 2686  
HTML

Modeling Instant User Intent and Content-Level Transition for Sequential Fashion Recommendation  
Yujuan Ding;Yunshan Ma;Wai Keung Wong;Tat-Seng Chua  
Publication Year: 2022,Page(s):2687 - 2700  
HTML

Hierarchical User Intent Graph Network for Multimedia Recommendation  
Yinwei Wei;Xiang Wang;Xiangnan He;Liqiang Nie;Yong Rui;Tat-Seng Chua  
Publication Year: 2022,Page(s):2701 - 2712  
Cited by: Papers (1)  
HTML

Deep Arbitrary HDRI: Inverse Tone Mapping With Controllable Exposure Changes  
So Yeon Jo;Siyeong Lee;Namhyun Ahn;Suk-Ju Kang  
Publication Year: 2022,Page(s):2713 - 2726  
HTML

Prior-Induced Information Alignment for Image Matting  
Yuhao Liu;Jiake Xie;Yu Qiao;Yong Tang;Xin Yang  
Publication Year: 2022,Page(s):2727 - 2738  
Cited by: Papers (2)  
HTML

ToF and Stereo Data Fusion Using Dynamic Search Range Stereo Matching  
Yong Deng;Jimin Xiao;Steven Zhiying Zhou  
Publication Year: 2022,Page(s):2739 - 2751  
HTML

Exploring Zero-Shot Emotion Recognition in Speech Using Semantic-Embedding Prototypes  
Xinzhou Xu;Jun Deng;Nicholas Cummins;Zixing Zhang;Li Zhao;Björn W. Schuller  
Publication Year: 2022,Page(s):2752 - 2765  
HTML

Discriminative Siamese Complementary Tracker With Flexible Update  
Baojie Fan;Jiandong Tian;Yan Peng;Yandong Tang  
Publication Year: 2022,Page(s):2766 - 2778  
HTML

Deep Enhanced Weakly-Supervised Hashing With Iterative Tag Refinement  
Min Wang;Wengang Zhou;Qi Tian;Houqiang Li  
Publication Year: 2022,Page(s):2779 - 2790  
HTML

Learning Temporal-Correlated and Channel- Decorrelated Siamese Networks for Visual Tracking  
Mao Xi;Wengang Zhou;Ning Wang;Houqiang Li  
Publication Year: 2022,Page(s):2791 - 2803  
HTML

SPGNet: Serial and Parallel Group Network  
Xuan Wang;Shenqi Lai;Zhenhua Chai;Xingjun Zhang;Xueming Qian  
Publication Year: 2022,Page(s):2804 - 2814  
Cited by: Papers (3)  
HTML

A Real-Time Semi-Supervised Deep Tone Mapping Network  
Ning Zhang;Yang Zhao;Chao Wang;Ronggang Wang  
Publication Year: 2022,Page(s):2815 - 2827  
HTML

Disentangling Semantic-to-Visual Confusion for Zero-Shot Learning  
Zihan Ye;Fuyuan Hu;Fan Lyu;Linyan Li;Kaizhu Huang  
Publication Year: 2022,Page(s):2828 - 2840  
HTML

Two Exposure Fusion Using Prior-Aware Generative Adversarial Network  
Jia-Li Yin;Bo-Hao Chen;Yan-Tsung Peng  
Publication Year: 2022,Page(s):2841 - 2851  
Cited by: Papers (1)  
HTML

EFRNet: Efficient Feature Reconstructing Network for Real-Time Scene Parsing  
Xin Li;Fan Yang;Ao Luo;Zhicheng Jiao;Hong Cheng;Zicheng Liu  
Publication Year: 2022,Page(s):2852 - 2865  
HTML

Video-Based Point Cloud Compression Artifact Removal  
Anique Akhtar;Wen Gao;Li Li;Zhu Li;Wei Jia;Shan Liu  
Publication Year: 2022,Page(s):2866 - 2876  
Cited by: Papers (1)  
HTML

SRDRL: A Blind Super-Resolution Framework With Degradation Reconstruction Loss  
Zongyao He;Zhi Jin;Yao Zhao  
Publication Year: 2022,Page(s):2877 - 2889  
HTML

Multi-Scale Grid Network for Image Deblurring With High-Frequency Guidance  
Yang Liu;Faming Fang;Tingting Wang;Juncheng Li;Yun Sheng;Guixu Zhang  
Publication Year: 2022,Page(s):2890 - 2901  
HTML

Learning Scale-Consistent Attention Part Network for Fine-Grained Image Recognition  
Huabin Liu;Jianguo Li;Dian Li;John See;Weiyao Lin  
Publication Year: 2022,Page(s):2902 - 2913  
HTML

Spatial-Temporal Graphs for Cross-Modal Text2Video Retrieval  
Xue Song;Jingjing Chen;Zuxuan Wu;Yu-Gang Jiang  
Publication Year: 2022,Page(s):2914 - 2923  
HTML

Cryptanalysis of Reversible Data Hiding in Encrypted Images by Block Permutation and Co-Modulation  
Lingfeng Qu;Fan Chen;ShanJun Zhang;Hongjie He  
Publication Year: 2022,Page(s):2924 - 2937  
HTML

Unsupervised Monocular Depth Estimation Using Attention and Multi-Warp Reconstruction  
Chuanwu Ling;Xiaogang Zhang;Hua Chen  
Publication Year: 2022,Page(s):2938 - 2949  
Cited by: Papers (1)  
HTML

Multimodal Learning for Temporally Coherent Talking Face Generation With Articulator Synergy  
Lingyun Yu;Hongtao Xie;Yongdong Zhang  
Publication Year: 2022,Page(s):2950 - 2962  
HTML

Total Generate: Cycle in Cycle Generative Adversarial Networks for Generating Human Faces, Hands, Bodies, and Natural Scenes  
Hao Tang;Nicu Sebe  
Publication Year: 2022,Page(s):2963 - 2974  
Cited by: Papers (2)  
HTML

Semantic Regularized Class-Conditional GANs for Semi-Supervised Fine-Grained Image Synthesis  
Tianyi Chen;Si Wu;Xuhui Yang;Yong Xu;Hau-San Wong  
Publication Year: 2022,Page(s):2975 - 2985  
HTML

Explicit Cross-Modal Representation Learning for Visual Commonsense Reasoning  
Xi Zhang;Feifei Zhang;Changsheng Xu  
Publication Year: 2022,Page(s):2986 - 2997  
HTML

The Model May Fit You: User-Generalized Cross-Modal Retrieval  
Xinhong Ma;Xiaoshan Yang;Junyu Gao;Changsheng Xu  
Publication Year: 2022,Page(s):2998 - 3012  
HTML

Enhancing Neural Machine Translation With Dual-Side Multimodal Awareness  
Yuqing Song;Shizhe Chen;Qin Jin;Wei Luo;Jun Xie;Fei Huang  
Publication Year: 2022,Page(s):3013 - 3024  
HTML

Confidence-Based 6D Object Pose Estimation  
Wei-Lun Huang;Chun-Yi Hung;I-Chen Lin  
Publication Year: 2022,Page(s):3025 - 3035  
HTML

Horizontal-to-Vertical Video Conversion  
Tun Zhu;Daixin Zhang;Yao Hu;Tianran Wang;Xiaolong Jiang;Jianke Zhu;Jiawei Li  
Publication Year: 2022,Page(s):3036 - 3048  
Cited by: Papers (1)  
HTML

Jointly Learning the Attributes and Composition of Shots for Boundary Detection in Videos  
Xuekun Jiang;Libiao Jin;Anyi Rao;Linning Xu;Dahua Lin  
Publication Year: 2022,Page(s):3049 - 3059  
HTML

Multi-Modal Context Propagation for Person Re-Identification With Wireless Positioning  
Yiheng Liu;Wengang Zhou;Mao Xi;Sanjing Shen;Houqiang Li  
Publication Year: 2022,Page(s):3060 - 3073  
HTML

Cross View Capture for Stereo Image Super-Resolution  
Xiangyuan Zhu;Kehua Guo;Hui Fang;Liang Chen;Sheng Ren;Bin Hu  
Publication Year: 2022,Page(s):3074 - 3086  
HTML

Subjective Evaluation of Visual Quality and Simulator Sickness of Short 360° Videos: ITU-T Rec. P.919  
Jesús Gutiérrez;Pablo Pérez;Marta Orduna;Ashutosh Singla;Carlos Cortés;Primit Mazumdar;Irene Viola;Kjell Brunnström;Federica Battisti;Natalia Cieplińska;Dawid Juszka;Lucjan Janowski;Mikołaj Leszczuk;Anthony Adeyemi-Ejeye;Yaosi Hu;Zhenzhong Chen;Glenn Van Wallendael;Peter Lambert;César Díaz;John Hedlund;Omar Hamsis;Stephan Fremerey;Frank Hofmeyer;Alexander Raake;Pablo César;Marco Carli;Narciso García  
Publication Year: 2022,Page(s):3087 - 3100  
HTML

Exploring Pairwise Relationships Adaptively From Linguistic Context in Image Captioning  
Zongjian Zhang;Qiang Wu;Yang Wang;Fang Chen  
Publication Year: 2022,Page(s):3101 - 3113  
HTML

Efficient and Accurate Multi-Scale Topological Network for Single Image Dehazing  
Qiaosi Yi;Juncheng Li;Faming Fang;Aiwen Jiang;Guixu Zhang  
Publication Year: 2022,Page(s):3114 - 3128  
Cited by: Papers (2)  
HTML

Boundary-Aware Arbitrary-Shaped Scene Text Detector With Learnable Embedding Network

Mengting Xing;Hongtao Xie;Qingfeng Tan;Shancheng Fang;Yuxin Wang;Zhengjun Zha;Yongdong Zhang  
Publication Year: 2022,Page(s):3129 - 3143  
HTML

Geometry-Constrained Scale Estimation for Monocular Visual Odometry  
Hui Zhang;Xiangwei Wang;Xiaochuan Yin;Mingxiao Du;Chengju Liu;Qijun Chen  
Publication Year: 2022,Page(s):3144 - 3156  
HTML

DBDnet: A Deep Boosting Strategy for Image Denoising  
Jiayi Ma;Chengli Peng;Xin Tian;Junjun Jiang  
Publication Year: 2022,Page(s):3157 - 3168  
Cited by: Papers (2)  
HTML

Towards Analysis-Friendly Face Representation With Scalable Feature and Texture Compression  
Shurun Wang;Shiqi Wang;Wenhan Yang;Xinfeng Zhang;Shanshe Wang;Siwei Ma;Wen Gao  
Publication Year: 2022,Page(s):3169 - 3181  
HTML  
HTML format

# IEEE TRANSACTIONS ON CLOUD COMPUTING

## June 2022

Designing Secure and Efficient Biometric-Based Access Mechanism for Cloud Services  
Gaurang Panchal;Debasis Samanta;Ashok Kumar Das;Neeraj Kumar;Kim-Kwang Raymond Choo  
Publication Year: 2022,Page(s):749 - 761  
Cited by: Papers (1)  
[HTML](#)

Attribute Based Encryption with Privacy Protection and Accountability for CloudIoT  
Jiguo Li;Yichen Zhang;Jianting Ning;Xinyi Huang;Geong Sen Poh;Debang Wang  
Publication Year: 2022,Page(s):762 - 773  
Cited by: Papers (20)  
[HTML](#)

Critical Path Analysis through Hierarchical Distributed Virtualized Environments Using Host Kernel Tracing  
Hani Nemat;Francois Tetreault;Jason Puncher;Michel Dagenais  
Publication Year: 2022,Page(s):774 - 791  
[HTML](#)

RES: Real-Time Video Stream Analytics Using Edge Enhanced Clouds  
Muhammad Ali;Ashiq Anjum;Omer Rana;Ali Reza Zamani;Daniel Balouek-Thomert;Manish Parashar  
Publication Year: 2022,Page(s):792 - 804  
Cited by: Papers (8)  
[HTML](#)

Asynchronous Optical Traffic Offloading of Hybrid Optical/Electrical Data Center Networks  
Tong Ye;Jianke Li;Xiaodan Pan;Tony T. Lee  
Publication Year: 2022,Page(s):805 - 820  
[HTML](#)

Distributed and Collaborative High-Speed Inference Deep Learning for Mobile Edge with Topological Dependencies  
Shagufta Henna;Alan Davy  
Publication Year: 2022,Page(s):821 - 834  
[HTML](#)

Verifiable Searchable Encryption Framework Against Insider Keyword-Guessing Attack in Cloud Storage  
Yinbin Miao;Qiuyun Tong;Robert H. Deng;Kim-Kwang Raymond Choo;Ximeng Liu;Hongwei Li  
Publication Year: 2022,Page(s):835 - 848  
Cited by: Papers (6)  
[HTML](#)

A Queue Waiting Cost-Aware Control Model for Large Scale Heterogeneous Cloud Datacenter  
Weihua Bai;Jiaxian Zhu;Shaowei Huang;Huibing Zhang  
Publication Year: 2022,Page(s):849 - 862  
[HTML](#)

MCDM-Based Parametric Selection of Cloud Deployment Models for an Academic Organization  
Rakesh Garg  
Publication Year: 2022,Page(s):863 - 871  
Cited by: Papers (4)  
[HTML](#)

Praxi: Cloud Software Discovery That Learns From Practice  
Anthony Byrne;Emre Ates;Ata Turk;Vladimir Pchelin;Sastry Duri;Shripad Nadgowda;Canturk Isci;Ayse K. Coskun  
Publication Year: 2022,Page(s):872 - 884  
[HTML](#)

Stream Processing on Clustered Edge Devices  
Rustem Dautov;Salvatore Distefano  
Publication Year: 2022,Page(s):885 - 898  
Cited by: Papers (2)  
[HTML](#)

Multi-Tier Workload Consolidations in the Cloud: Profiling, Modeling and Optimization  
Kejiang Ye;Haiying Shen;Yang Wang;Cheng-Zhong Xu  
Publication Year: 2022,Page(s):899 - 912  
Cited by: Papers (2)  
[HTML](#)

Tight Bound on Incentive Ratio for Sybil Attack in Resource Sharing System  
Zhou Chen;Yukun Cheng;Xiaotie Deng;Qi Qi;Xiang Yan  
Publication Year: 2022,Page(s):913 - 924  
[HTML](#)

Personality-Guided Cloud Pricing via Reinforcement Learning  
Peijin Cong;Junlong Zhou;Mingsong Chen;Tongquan Wei  
Publication Year: 2022,Page(s):925 - 943  
Cited by: Papers (1)  
[HTML](#)

An In-Network Replica Selection Framework for Latency-Critical Distributed Data Stores  
Yi Su;Dan Feng;Yu Hua;Zhan Shi;Tingwei Zhu  
Publication Year: 2022,Page(s):944 - 956  
[HTML](#)

Proactive Fault-Tolerance Technique to Enhance Reliability of Cloud Service in Cloud Federation Environment  
Benay Kumar Ray;Avirup Saha;Sunirmal Khatua;Sarban Roy  
Publication Year: 2022,Page(s):957 - 971  
Cited by: Papers (3)  
[HTML](#)

Infrastructure Aware Heterogeneous-Workloads Scheduling for Data Center Energy Cost Minimization  
Kawsar Haghshenas;Somayyeh Taheri;Maziar Goudarzi;Siamak Mohammadi  
Publication Year: 2022,Page(s):972 - 983  
Cited by: Papers (1)  
[HTML](#)



Autonomic Elasticity Control for Multi-Server Queues Under Generic Workload Surges in Cloud Environments  
Venkat Tadakamalla;Daniel A. Menascé  
Publication Year: 2022,Page(s):984 - 995  
HTML

Distributed Traffic Flow Consolidation for Power Efficiency of Large-Scale Data Center Network  
Kuangyu Zheng;Xiaorui Wang;Jia Liu  
Publication Year: 2022,Page(s):996 - 1007  
Cited by: Papers (2)  
HTML

Efficient IoT Management With Resilience to Unauthorized Access to Cloud Storage  
Changhee Hahn;Jongkil Kim;Hyunsoo Kwon;Junbeom Hur  
Publication Year: 2022,Page(s):1008 - 1020  
Cited by: Papers (2)  
HTML

*Bi-TCCS*: Trustworthy Cloud Collaboration Service Scheme Based on Bilateral Social Feedback  
Chuanyi Liu;Xiaoyong Li;Mingliang Sun;Yali Gao;Jie Yuan;Shaoming Duan  
Publication Year: 2022,Page(s):1021 - 1037  
HTML

APS: Adaptive Packet Spraying to Isolate Mix-Flows in Data Center Network  
Jingling Liu;Jiawei Huang;Wenjun Lv;Jianxin Wang  
Publication Year: 2022,Page(s):1038 - 1051  
Cited by: Papers (8)  
HTML

Privacy-Preserving Efficient Verifiable Deep Packet Inspection for Cloud-Assisted Middlebox  
Hao Ren;Hongwei Li;Dongxiao Liu;Guowen Xu;Nan Cheng;Xuemin Shen  
Publication Year: 2022,Page(s):1052 - 1064  
Cited by: Papers (7)  
HTML

The Effects of Soft Errors and Mitigation Strategies for Virtualization Servers  
Frederico Cerveira;Raul Barbosa;Henrique Madeira;Filipe Araujo  
Publication Year: 2022,Page(s):1065 - 1081  
Cited by: Papers (3)  
HTML

S-Blocks: Lightweight and Trusted Virtual Security Function With SGX  
Juan Wang;Shirong Hao;Hongxin Hu;Bo Zhao;Hongda Li;Wenhui Zhang;Jun Xu;Peng Liu;Jing Ma  
Publication Year: 2022,Page(s):1082 - 1099  
HTML

*Microscaler*: Cost-Effective Scaling for Microservice Applications in the Cloud With an Online Learning Approach  
Guangba Yu;Pengfei Chen;Zibin Zheng  
Publication Year: 2022,Page(s):1100 - 1116  
Cited by: Papers (7)  
HTML

Resource Allocation for Cloud-Based Software Services Using Prediction-Enabled Feedback Control With Reinforcement Learning  
Xing Chen;Fangning Zhu;Zheyi Chen;Geyong Min;Xianghan Zheng;Chunming Rong  
Publication Year: 2022,Page(s):1117 - 1129  
Cited by: Papers (4)  
HTML

Power of Random Choices Made Efficient for Fog Computing  
Roberto Beraldi;Gabriele Proietti Mattia  
Publication Year: 2022,Page(s):1130 - 1141  
Cited by: Papers (5)  
HTML

Similarity Search for Encrypted Images in Secure Cloud Computing  
Yingying Li;Jianfeng Ma;Yinbin Miao;Yue Wang;Ximeng Liu;Kim-Kwang Raymond Choo  
Publication Year: 2022,Page(s):1142 - 1155  
Cited by: Papers (4)  
HTML

Failure Aware Semi-Centralized Virtual Network Embedding in Cloud Computing Fat-Tree Data Center Networks  
Chinmaya Kumar Dehury;Prasan Kumar Sahoo  
Publication Year: 2022,Page(s):1156 - 1172  
Cited by: Papers (1)  
HTML

Energy Aware Virtual Network Migration  
Zhongbao Zhang;Huaifeng Cao;Sen Su;Weitian Li  
Publication Year: 2022,Page(s):1173 - 1189  
Cited by: Papers (3)  
HTML

Bio-Inspired Formal Model for Space/Time Virtual Machine Randomization and Diversification  
Noor Ahmed;Bharat Bhargava  
Publication Year: 2022,Page(s):1190 - 1200  
HTML

Tag-Based Verifiable Delegated Set Intersection Over Outsourced Private Datasets  
Qiang Wang;Fucai Zhou;Jian Xu;Su Peng  
Publication Year: 2022,Page(s):1201 - 1214  
Cited by: Papers (3)  
HTML

Malicious Node Detection Scheme Based on Correlation of Data and Network Topology in Fog Computing-Based VANETs  
Ke Gu;XinYing Dong;WeiJia Jia  
Publication Year: 2022,Page(s):1215 - 1232  
Cited by: Papers (8)  
HTML

DNA Similarity Search With Access Control Over Encrypted Cloud Data  
Guowen Xu;Hongwei Li;Hao Ren;Xiaodong Lin;Xuemin Shen  
Publication Year: 2022,Page(s):1233 - 1252  
Cited by: Papers (3)  
HTML

Flexible Threshold Ring Signature in Chronological Order for Privacy Protection in Edge Computing  
Zhiwei Wang;Jiaxing Fan  
Publication Year: 2022,Page(s):1253 - 1261  
HTML

Towards Intelligent Provisioning of Virtualized Network Functions in Cloud of Things: A Deep Reinforcement Learning Based Approach  
Bo He;Jingyu Wang;Qi Qi;Haifeng Sun;Jianxin Liao  
Publication Year: 2022,Page(s):1262 - 1274  
Cited by: Papers (2)  
HTML

Understanding the Security Implication of Aborting Virtual Machine Live Migration  
Xing Gao;Jidong Xiao;Haining Wang;Angelos Stavrou  
Publication Year: 2022,Page(s):1275 - 1286  
HTML

NetStor: Network and Storage Traffic Management for Ensuring Application QoS in a Hyperconverged Data-Center  
Sumitro Bhaumik;Ravi Bansal;Raja Karmakar;Satish Kumar Mopur;Saikat Mukherjee;Mandar Jagannath Chitale;Sandip Chakraborty  
Publication Year: 2022,Page(s):1287 - 1300  
Cited by: Papers (2)  
HTML

Optimal Resource Allocation of Cloud-Based Spark Applications  
Marco Lattuada;Enrico Barbierato;Eugenio Gianniti;Danilo Ardagna  
Publication Year: 2022,Page(s):1301 - 1316  
HTML

A Dynamic Deep-Learning-Based Virtual Edge Node Placement Scheme for Edge Cloud Systems in Mobile Environment  
Xiaoqun Yuan;Mengting Sun;Wenjing Lou  
Publication Year: 2022,Page(s):1317 - 1328  
Cited by: Papers (1)  
HTML

Guaranteeing Performance SLAs of Cloud Applications Under Resource Storms  
In Kee Kim;Jinho Hwang;Wei Wang;Marty Humphrey  
Publication Year: 2022,Page(s):1329 - 1343  
HTML

When FPGA Meets Cloud: A First Look at Performance  
Xiuxiu Wang;Yipei Niu;Fangming Liu;Zichen Xu  
Publication Year: 2022,Page(s):1344 - 1357  
Cited by: Papers (7)  
HTML

ES2: Building an Efficient and Responsive Event Path for I/O Virtualization  
Xiaokang Hu;Jian Li;Ruhui Ma;Haibing Guan  
Publication Year: 2022,Page(s):1358 - 1372  
Cited by: Papers (1)  
HTML

FPGA-Accelerated Searchable Encrypted Database Management Systems for Cloud Services  
Mitsuhiro Okada;Takayuki Suzuki;Naoya Nishio;Hasitha Muthumala Waidyasooriya;Masanori Hariyama  
Publication Year: 2022,Page(s):1373 - 1385  
Cited by: Papers (1)  
HTML

Real-Time Prediction of Docker Container Resource Load Based on a Hybrid Model of ARIMA and Triple Exponential Smoothing  
Yulai Xie;Minpeng Jin;Zhuping Zou;Gongming Xu;Dan Feng;Wenmao Liu;Darrell Long  
Publication Year: 2022,Page(s):1386 - 1401  
Cited by: Papers (3)  
HTML

Accurate Fault Location using Deep Neural Evolution Network in Cloud Data Center Interconnection  
Hui Yang;Xudong Zhao;Qiuyan Yao;Ao Yu;Jie Zhang;Yuefeng Ji  
Publication Year: 2022,Page(s):1402 - 1412  
Cited by: Papers (13)  
HTML

SecureAD: A Secure Video Anomaly Detection Framework on Convolutional Neural Network in Edge Computing Environment  
Hang Cheng;Ximeng Liu;Huaxiong Wang;Yan Fang;Meiqing Wang;Xiaopeng Zhao  
Publication Year: 2022,Page(s):1413 - 1427  
Cited by: Papers (5)  
HTML

Semi-Synchronized Non-Blocking Concurrent Kernel Cruising  
Donghai Tian;Qiang Zeng;Dinghao Wu;Peng Liu;Changzhen Hu  
Publication Year: 2022,Page(s):1428 - 1444  
HTML

Towards Secure and Efficient Equality Conjunction Search Over Outsourced Databases  
Weipeng Lin;Ke Wang;Zhilin Zhang;Ada Waichee Fu;Raymond Chi-Wing Wong;Cheng Long;Chunyan Miao  
Publication Year: 2022,Page(s):1445 - 1461  
HTML

A Sketching Approach for Obtaining Real-Time Statistics Over Data Streams in Cloud  
Guangjun Wu;Xiaochun Yun;Yong Wang;Shupeng Wang;Binbin Li;Yong Liu  
Publication Year: 2022,Page(s):1462 - 1475  
HTML

PKE-MET: Public-Key Encryption With Multi-Ciphertext Equality Test in Cloud Computing  
Willy Susilo;Fuchun Guo;Zhen Zhao;Ge Wu  
Publication Year: 2022,Page(s):1476 - 1488  
Cited by: Papers (2)  
HTML

# IEEE TRANSACTIONS ON COGNITIVE COMMUNICATIONS AND NETWORKING

A PUBLICATION OF  
THE IEEE COMMUNICATIONS SOCIETY  
THE IEEE SIGNAL PROCESSING SOCIETY



JUNE 2022

VOLUME 8

NUMBER 2

ITCCG7

(ISSN 2332-7731)

## Table of Contents

Publication Year: 2022,Page(s):C1 - 441  
HTML

## IEEE Communications Society

Publication Year: 2022,Page(s):C2 - C2  
HTML

## Deep Learning Aided Physical-Layer Security: The Security Versus Reliability Trade-Off

Tiep M. Hoang;Dong Liu;Thien Van Luong;Jiankang Zhang;Lajos Hanzo  
Publication Year: 2022,Page(s):442 - 453  
HTML

## Knowledge-Driven Machine Learning and Applications in Wireless Communications

Daofeng Li;Yamei Xu;Ming Zhao;Jinkang Zhu;Sihai Zhang  
Publication Year: 2022,Page(s):454 - 467  
HTML

## Random Fourier Feature-Based Deep Learning for Wireless Communications

Rangeet Mitra;Georges Kaddoum  
Publication Year: 2022,Page(s):468 - 479  
Cited by: Papers (1)  
HTML

## Machine Learning in NextG Networks via Generative Adversarial Networks

Ender Ayanoglu;Kemal Davaslioglu;Yalin E. Sagduyu  
Publication Year: 2022,Page(s):480 - 501  
HTML

## Spatio-Temporal Spectrum Load Prediction Using Convolutional Neural Network and ResNet

Xiangyu Ren;Hamed Mosavat-Jahromi;Lin Cai;David Kidston  
Publication Year: 2022,Page(s):502 - 513  
HTML

## Learning-Based Spectrum Sensing and Access in Cognitive Radios via Approximate POMDPs

Bharath Keshavamurthy;Nicolò Michelusi  
Publication Year: 2022,Page(s):514 - 528  
HTML

## SigNet: A Novel Deep Learning Framework for Radio Signal Classification

Zhuangzhi Chen;Hui Cui;Jingyang Xiang;Kunfeng Qiu;Liang Huang;Shilian Zheng;Shichuan Chen;Qi Xuan;Xiaoniu Yang  
Publication Year: 2022,Page(s):529 - 541  
Cited by: Papers (1)  
HTML

## Evolutionary Optimization of Residual Neural Network Architectures for Modulation Classification

Erma Perenda;Sreeraj Rajendran;Gerome Bovet;Sofie Pollin;Mariya Zheleva  
Publication Year: 2022,Page(s):542 - 556  
HTML

## Low-Bitwidth Convolutional Neural Networks for Wireless Interference Identification

Pengyu Wang;Yufan Cheng;Qihang Peng;Binhong Dong;Shaoqian Li  
Publication Year: 2022,Page(s):557 - 569  
HTML

## A Data-Driven Self-Optimization Solution for Inter-Frequency Mobility Parameters in Emerging Networks

Muhammad Umar Bin Farooq;Marvin Manalastas;Waseem Raza;Syed Muhammad Asad Zaidi;Ali Rizwan;Adnan Abu-Dayya;Ali Imran  
Publication Year: 2022,Page(s):570 - 583  
HTML

## OFDM-Guided Deep Joint Source Channel Coding for Wireless Multipath Fading Channels

Mingyu Yang;Chenghong Bian;Hun-Seok Kim  
Publication Year: 2022,Page(s):584 - 599  
HTML

Turbo Detection Aided Autoencoder for Multicarrier Wireless Systems: Integrating Deep Learning Into Channel Coded Systems  
Chao Xu;Thien Van Luong;Luping Xiang;Shinya Sugiura;Robert G. Maunder;Lie-Liang Yang;Lajos Hanzo  
Publication Year: 2022,Page(s):600 - 614  
HTML

A Novel Average Autoencoder-Based Amplify-and-Forward Relay Networks With Hardware Impairments  
Ankit Gupta;Mathini Sellathurai  
Publication Year: 2022,Page(s):615 - 630  
HTML

Residual-Aided End-to-End Learning of Communication System Without Known Channel  
Hao Jiang;Shuangkaisheng Bi;Linglong Dai;Hao Wang;Jiankun Zhang  
Publication Year: 2022,Page(s):631 - 641  
HTML

A Family of Deep Learning Architectures for Channel Estimation and Hybrid Beamforming in Multi-Carrier mm-Wave Massive MIMO  
Ahmet M. Elbir;Kumar Vijay Mishra;M. R. Bhavani Shankar;Björn Ottersten  
Publication Year: 2022,Page(s):642 - 656  
HTML

Deep Neural Network: An Alternative to Traditional Channel Estimators in Massive MIMO Systems  
Antonio Melgar;Alejandro de la Fuente;Leopoldo Carro-Calvo;Óscar Barquero-Pérez;Eduardo Morgado  
Publication Year: 2022,Page(s):657 - 671  
HTML

Fully Convolutional Neural Network-Based CSI Limited Feedback for FDD Massive MIMO Systems  
Guanghui Fan;Jinlong Sun;Guan Gui;Haris Gacanin;Bamidele Adebisi;Tomoaki Ohtsuki  
Publication Year: 2022,Page(s):672 - 682  
Cited by: Papers (1)  
HTML

Deep Learning Empowered MAC Protocol Identification With Squeeze-and-Excitation Networks  
Xutong Zhang;Guoru Ding;Jie Li;Wei Wang;Qihui Wu  
Publication Year: 2022,Page(s):683 - 693  
Cited by: Papers (1)  
HTML

A Robust Deep Learning-Based Beamforming Design for RIS-Assisted Multiuser MISO Communications With Practical Constraints  
Wangyang Xu;Lu Gan;Chongwen Huang  
Publication Year: 2022,Page(s):694 - 706  
HTML

Downlink Power Allocation in Massive MIMO via Deep Learning: Adversarial Attacks and Training  
R. Manoj;Meysam Sadeghi;Erik G. Larsson  
Publication Year: 2022,Page(s):707 - 719  
HTML

Fine Timing and Frequency Synchronization for MIMO-OFDM: An Extreme Learning Approach  
Jun Liu;Kai Mei;Xiaochen Zhang;Des McLernon;Dongtang Ma;Jibo Wei;Syed Ali Raza Zaidi  
Publication Year: 2022,Page(s):720 - 732  
HTML

Cognitive Resource Analyzer for Cellular Network Ecosystems  
Brian W. Stevens;Jacob Ray;Eric Daugherty;Jared S. Everett;Yongwen Yang;Mohamed F. Younis  
Publication Year: 2022,Page(s):733 - 749  
HTML

A Dual-Function Massive MIMO Uplink OFDM Communication and Radar Architecture  
Murat Temiz;Emad Alsusa;Mohammed W. Baidas  
Publication Year: 2022,Page(s):750 - 762  
Cited by: Papers (1)  
HTML

Three-Dimensional RF Sensor Networks for Widespread Spectrum Monitoring  
Nikolaus Kleber;Jonathan D. Chisum;Bertrand Hochwald;J. Nicholas Laneman  
Publication Year: 2022,Page(s):763 - 777  
HTML

Directivity in RF Sensor Networks for Widespread Spectrum Monitoring  
Nikolaus Kleber;Martin Haenggi;Jonathan D. Chisum;Bertrand Hochwald;J. Nicholas Laneman  
Publication Year: 2022,Page(s):778 - 792  
Cited by: Papers (1)  
HTML

Series-Constellation Feature Based Blind Modulation Recognition for Beyond 5G MIMO-OFDM Systems With Channel Fading  
Zeliang An;Tianqi Zhang;Ming Shen;Elisabeth De Carvalho;Baoze Ma;Chen Yi;Tiecheng Song  
Publication Year: 2022,Page(s):793 - 811  
HTML

Performance of Predictive Indoor mmWave Networks With Dynamic Blockers  
Andrea Bonfante;Lorenzo Galati Giordano;Irene Macaluso;Nicola Marchetti  
Publication Year: 2022,Page(s):812 - 827  
HTML

Model and Transfer Spatial-Temporal Knowledge for Fine-Grained Radio Map Reconstruction  
Kehan Li;Chao Li;Baosheng Yu;Zhangchong Shen;Qiming Zhang;Shibo He;Jiming Chen  
Publication Year: 2022,Page(s):828 - 841  
HTML

New Asynchronous Channel-Hopping Sequences for Cognitive-Radio Wireless Networks  
Li-Hsin Yang;Guu-Chang Yang;Wing C. Kwong  
Publication Year: 2022,Page(s):842 - 855  
HTML

Robust Beamforming Optimization for Self-Sustainable Intelligent Reflecting Surface Assisted Wireless Networks  
Yuze Zou;Yusi Long;Shimin Gong;Dinh Thai Hoang;Wei Liu;Wenqing Cheng;Dusit Niyato  
Publication Year: 2022,Page(s):856 - 870  
HTML

Performance of Adaptive Multi-User Underlay NOMA Transmission With Simple User Selection  
Anand Jee;Komal Janghel;Shankar Prakriya  
Publication Year: 2022,Page(s):871 - 887  
HTML

An Emergent Self-Awareness Module for Physical Layer Security in Cognitive UAV Radios  
Ali Krayani;Atm S. Alam;Lucio Marcenaro;Arumugam Nallanathan;Carlo Regazzoni  
Publication Year: 2022,Page(s):888 - 906  
HTML

Energy-Efficient Transmission Range and Duration for Cognitive Radio Sensor Networks  
Mustafa Ozger;Ecehan B. Pehlivanoglu;Ozgur B. Akan  
Publication Year: 2022,Page(s):907 - 918  
HTML

Spectrum Sharing and Power Allocation Optimised Multihop Multipath D2D Video Delivery in Beyond 5G Networks  
Quang-Nhat Tran;Nguyen-Son Vo;Minh-Phung Bui;Thanh-Minh Phan;Quynh-Anh Nguyen;Trung Q. Duong  
Publication Year: 2022,Page(s):919 - 930  
HTML

Secrecy Outage Analysis of CR-SWIPT Networks With Artificial Noise and Spatially Random Secondary Terminals  
Yuanyuan Ma;Tiejun Lv;Han Liu;Tingting Li;Jie Zeng;Gaofeng Pan  
Publication Year: 2022,Page(s):931 - 945  
HTML

Artificial Noise Aided Secure Communications for Cooperative NOMA Networks  
Zhanghua Cao;Xiaodong Ji;Jue Wang;Wei Wang;Kanapathippillai Cumanan;Zhiguo Ding;Octavia A. Dobre  
Publication Year: 2022,Page(s):946 - 963  
HTML

Energy Efficient Power Control for Cognitive Multibeam-Satellite Terrestrial Networks With Poisson Distributed Users  
Yuhan Ruan;Yongzhao Li;Rui Zhang;Lijuan Jiang  
Publication Year: 2022,Page(s):964 - 974  
HTML

Three-Dimensional Resource Matching for Internet of Things Underlying Cognitive Capacity Harvesting Networks  
Baoshan Lu;Shijun Lin;Jianghong Shi  
Publication Year: 2022,Page(s):975 - 988  
HTML

Cognitive Radio Timing Protocol for Interference-Constrained Throughput Maximization  
Arifa Ahmed;Deepak Mishra;Ganesh Prasad;Krishna Lal Baishnab  
Publication Year: 2022,Page(s):989 - 1004  
HTML

A Fair and Cooperative MAC Protocol for Heterogeneous Cognitive Radio Enabled Vehicular Ad-Hoc Networks  
Jahnvi Tiwari;Arun Prakash;Rajeev Tripathi;Kshirasagar Naik  
Publication Year: 2022,Page(s):1005 - 1018  
HTML

Delay Optimization in Mobile Edge Computing: Cognitive UAV-Assisted eMBB and mMTC Services  
Saifur Rahman Sabuj;Derek Kwaku Pobi Asiedu;Kyoung-Jae Lee;Han-Shin Jo  
Publication Year: 2022,Page(s):1019 - 1033  
HTML

Applications of Auction and Mechanism Design in Edge Computing: A Survey  
Houming Qiu;Kun Zhu;Nguyen Cong Luong;Changyan Yi;Dusit Niyato;Dong In Kim  
Publication Year: 2022,Page(s):1034 - 1058  
HTML

QoE-DEER: A QoE-Aware Decentralized Resource Allocation Scheme for Edge Computing  
Songyuan Li;Jiwei Huang;Jia Hu;Bo Cheng  
Publication Year: 2022,Page(s):1059 - 1073  
HTML

Multiuser Scheduling in Centralized Cognitive Radio Networks: A Multi-Armed Bandit Approach  
Amir Alipour-Fanid;Monireh Dabaghchian;Raman Arora;Kai Zeng  
Publication Year: 2022,Page(s):1074 - 1091  
HTML

Cooperative Task Offloading and Content Delivery for Heterogeneous Demands: A Matching Game-Theoretic Approach  
Tao Fang;Dan Wu;Jiaxin Chen;Dianxiong Liu  
Publication Year: 2022,Page(s):1092 - 1103  
HTML

Cooperative Hybrid Nonorthogonal Multiple Access-Based Mobile-Edge Computing in Cognitive Radio Networks  
Dawei Wang;Fuhui Zhou;Wensheng Lin;Zhiguo Ding;Naofal Al-Dhahir  
Publication Year: 2022,Page(s):1104 - 1117  
HTML

A Potential Game Approach for Decentralized Resource Coordination in Coexisting IWNs  
Jialin Zhang;Wei Liang;Bo Yang;Huaguang Shi;Ke Wang;Qi Wang  
Publication Year: 2022,Page(s):1118 - 1130  
HTML

Enabling Cooperative Relay Selection by Transfer Learning for the Industrial Internet of Things  
Sina Shaham;Shuping Dang;Miaowen Wen;Shahid Mumtaz;Varun G. Menon;Chengzhong Li  
Publication Year: 2022,Page(s):1131 - 1146  
HTML

SmartCon: Deep Probabilistic Learning-Based Intelligent Link-Configuration in Narrowband-IoT Toward 5G and B5G  
Raja Karmakar;Georges Kaddoum;Samiran Chattopadhyay  
Publication Year: 2022,Page(s):1147 - 1158  
HTML

Deep Learning-Based Codebook Design for Code-Domain Non-Orthogonal Multiple Access: Approaching Single-User Bit-Error Rate Performance  
Minsig Han;Hanchang Seo;Ameha Tsegaye Abebe;Chung G. Kang  
Publication Year: 2022,Page(s):1159 - 1173  
HTML

Multi-Agent Reinforcement Learning-Based Distributed Dynamic Spectrum Access  
Hasan Albinsaid;Keshav Singh;Sudip Biswas;Chih-Peng Li  
Publication Year: 2022,Page(s):1174 - 1185  
HTML

Distributed Beamforming Techniques for Cell-Free Wireless Networks Using Deep Reinforcement Learning  
Firas Fredj;Yasser Al-Eryani;Setareh Maghsudi;Mohamed Akrouf;Ekram Hossain  
Publication Year: 2022,Page(s):1186 - 1201  
HTML

Real-Time 3-D MIMO Antenna Tuning With Deep Reinforcement Learning  
Yitong Liu;Yubo Shen;Zhe Lyu;Yanping Liang;Wei He;Yuehong Gao;Hongwen Yang;Li Yu  
Publication Year: 2022,Page(s):1202 - 1215  
HTML

Deep Reinforcement Learning Optimal Transmission Algorithm for Cognitive Internet of Things With RF Energy Harvesting  
Shaoai Guo;Xiaohui Zhao  
Publication Year: 2022,Page(s):1216 - 1227  
HTML

Dynamic Topology Design of NFV-Enabled Services Using Deep Reinforcement Learning  
Omar Alhussein;Weihua Zhuang  
Publication Year: 2022,Page(s):1228 - 1238  
HTML

Proactive Content Caching Based on Actor–Critic Reinforcement Learning for Mobile Edge Networks  
Wei Jiang;Daquan Feng;Yao Sun;Gang Feng;Zhenzhong Wang;Xiang-Gen Xia  
Publication Year: 2022,Page(s):1239 - 1252  
HTML

Federated Learning Over Noisy Channels: Convergence Analysis and Design Examples  
Xizixiang Wei;Cong Shen  
Publication Year: 2022,Page(s):1253 - 1268  
Cited by: Papers (1)  
HTML

Intelligent Joint Network Slicing and Routing via GCN-Powered Multi-Task Deep Reinforcement Learning  
Tianjian Dong;Zirui Zhuang;Qi Qi;Jingyu Wang;Haifeng Sun;F. Richard Yu;Tao Sun;Cheng Zhou;Jianxin Liao  
Publication Year: 2022,Page(s):1269 - 1286  
Cited by: Papers (1)  
HTML

Multi-Agent Reinforcement Learning for Network Selection and Resource Allocation in Heterogeneous Multi-RAT Networks  
Mhd Saria Allahham;Alaa Awad Abdellatif;Naram Mhaisen;Amr Mohamed;Aiman Erbad;Mohsen Guizani  
Publication Year: 2022,Page(s):1287 - 1300  
HTML

Multi-Layer Computation Offloading in Distributed Heterogeneous Mobile Edge Computing Networks  
Pengfei Wang;Boya Di;Linyang Song;Nicholas R. Jennings  
Publication Year: 2022,Page(s):1301 - 1315  
Cited by: Papers (1)  
HTML

IEEE Communications Society  
Publication Year: 2022,Page(s):C3 - C3  
HTML



# IEEE TRANSACTIONS ON MOLECULAR, BIOLOGICAL, AND MULTI-SCALE COMMUNICATIONS

A PUBLICATION OF  
THE IEEE COMMUNICATIONS SOCIETY



JUNE 2022

VOLUME 8

NUMBER 2

ITMBDH

ISSN (2332-7804)

Table of Contents

Publication Year: 2022,Page(s):C1 - C1  
HTML

IEEE Transactions on Molecular, Biological, and Multi-Scale  
Communications Publication Information

Publication Year: 2022,Page(s):C2 - C2  
HTML

Experimental System for Molecular Communication in Pipe  
Flow With Magnetic Nanoparticles

Wayan Wicke;Harald Unterweger;Jens Kirchner;Lukas  
Brand;Arman Ahmadzadeh;Doaa Ahmed;Vahid  
Jamali;Christoph Alexiou;Georg Fischer;Robert Schober  
Publication Year: 2022,Page(s):56 - 71  
HTML

An Analytical Propagation Model for Diffusion-Based  
Molecular Communication Systems

Musaab Saeed;Mehdi Maleki;Pedram Mohseni;Hamid Reza  
Bahrami

Publication Year: 2022,Page(s):72 - 81  
HTML

Markov Chain Modeling of the End-to-End Molecular  
Communication System Using Ligand Receiver

Muskan Ahuja;Ankit;Manav R. Bhatnagar  
Publication Year: 2022,Page(s):82 - 106  
HTML

Modeling Self-Assembly of Polymer-Based Wired Nano-  
Communication Channel

Oussama Abderrahmane Dambri;Soumaya Cherkaoui  
Publication Year: 2022,Page(s):107 - 118  
HTML

IEEE Communications Society Information

Publication Year: 2022,Page(s):C3 - C3  
HTML

# IEEE TRANSACTIONS ON **SIGNAL AND INFORMATION PROCESSING OVER NETWORKS**

A PUBLICATION OF  
THE IEEE SIGNAL PROCESSING SOCIETY  
THE IEEE COMMUNICATIONS SOCIETY  
THE IEEE COMPUTER SOCIETY



## 2022

IEEE Signal Processing Society

Publication Year: 2022,Page(s):C2 - C2

HTML

Improved Interval Estimation Method for Cyber-Physical Systems Under Stealthy Deception Attacks

Jianwei Fan;Jun Huang;Xudong Zhao

Publication Year: 2022,Page(s):1 - 11

HTML

Scalable Perception-Action-Communication Loops With Convolutional and Graph Neural Networks

Ting-Kuei Hu;Fernando Gama;Tianlong Chen;Wengqing Zheng;Zhangyang Wang;Alejandro Ribeiro;Brian M. Sadler

Publication Year: 2022,Page(s):12 - 24

HTML

Deterministic and Randomized Diffusion Based Iterative Generalized Hard Thresholding (DiFIGHT) for Distributed Recovery of Sparse Signals

Samrat Mukhopadhyay;Mrityunjoy Chakraborty

Publication Year: 2022,Page(s):25 - 36

HTML

Protocol-Based Fusion Estimator Design for State-Saturated Systems With Dead-Zone-Like Censoring Under Deception Attacks

Hang Geng;Zidong Wang;Fuad E. Alsaadi;Khalid H. Alharbi;Yuhua Cheng

Publication Year: 2022,Page(s):37 - 48

HTML

Enhanced Audit Bit Based Distributed Bayesian Detection in the Presence of Strategic Attacks

Chen Quan;Baocheng Geng;Yunghsiang S. Han;Pramod K. Varshney

Publication Year: 2022,Page(s):49 - 62

HTML

Graph Neural Networks With Lifting-Based Adaptive Graph Wavelets

Mingxing Xu;Wenrui Dai;Chenglin Li;Junni Zou;Hongkai Xiong;Pascal Frossard

Publication Year: 2022,Page(s):63 - 77

HTML

Graph Topology Inference With Derivative-Reproducing Property in RKHS: Algorithm and Convergence Analysis

Mircea Moscu;Ricardo A. Borsoi;Cédric Richard;José-Carlos M. Bermudez

Publication Year: 2022,Page(s):78 - 91

HTML

Secure Transmission Scheme Based on Fingerprint Positioning in Cell-Free Massive MIMO Systems

Jiahua Qiu;Kui Xu;Xiaochen Xia;Zhexiong Shen;Wei Xie;Dongmei Zhang;Meng Wang

Publication Year: 2022,Page(s):92 - 105

HTML

Resampling and Network Theory

Praveen B. Choppala;Marcus R. Frean;Paul D. Teal

Publication Year: 2022,Page(s):106 - 119

HTML

A Multi-Agent Collaborative Environment Learning Method for UAV Deployment and Resource Allocation

Zhaojun Dai;Yan Zhang;Wancheng Zhang;Xinran Luo;Zunwen He

Publication Year: 2022,Page(s):120 - 130

HTML

Decentralized Federated Learning: Balancing Communication and Computing Costs

Wei Liu;Li Chen;Wenyi Zhang

Publication Year: 2022,Page(s):131 - 143

HTML

Online Change Point Detection for Weighted and Directed Random Dot Product Graphs

Bernardo Marenco;Paola Bermolen;Marcelo Fiori;Federico Larroca;Gonzalo Mateos

Publication Year: 2022,Page(s):144 - 159

HTML

Graph-Based Classification With Multiple Shift Matrices

Jie Fan;Cihan Tepedelenlioglu;Andreas Spanias

Publication Year: 2022,Page(s):160 - 172

HTML

Joint State and Fault Estimation of Complex Networks Under Measurement Saturations and Stochastic Nonlinearities

Yang Liu;Zidong Wang;Lei Zou;Donghua Zhou;Wen-Hua Chen

Publication Year: 2022,Page(s):173 - 186

Cited by: Papers (3)

HTML

Quantized Distributed Estimation With Adaptive Combiner

Xiaoxian Lao;Wenfei Du;Chunguang Li

Publication Year: 2022,Page(s):187 - 200

HTML

Reconstruction of Time-Varying Graph Signals via Sobolev Smoothness

Jhony H. Giraldo;Arif Mahmood;Belmar Garcia-Garcia;Dorina Thanou;Thierry Bouwmans

Publication Year: 2022,Page(s):201 - 214

HTML

Statistical Consistency for Change Point Detection and Community Estimation in Time-Evolving Dynamic Networks  
Cong Xu;Thomas C. M. Lee  
Publication Year: 2022,Page(s):215 - 227  
[HTML](#)

Revisiting the Primal-Dual Method of Multipliers for Optimisation Over Centralised Networks  
Guoqiang Zhang;Kenta Niwa;W. Bastiaan Kleijn  
Publication Year: 2022,Page(s):228 - 243  
[HTML](#)

A Method Exploiting the Channel-Training Phase to Achieve Secrecy in a Fading Broadcast Channel  
Gustavo Anjos;Daniel Castanheira;Adão Silva;Atílio Gameiro  
Publication Year: 2022,Page(s):244 - 257  
[HTML](#)

Adaptive Event-Triggered Quantized Communication-Based Distributed Estimation Over Sensor Networks With Semi-Markovian Switching Topologies  
Fengzeng Zhu;Ju H. Park;Li Peng  
Publication Year: 2022,Page(s):258 - 272  
[HTML](#)

Learning Graphs From Smooth and Graph-Stationary Signals With Hidden Variables  
Andrei Buciualea;Samuel Rey;Antonio G. Marques  
Publication Year: 2022,Page(s):273 - 287  
[HTML](#)

Permutation Entropy for Graph Signals  
John Stewart Fabila-Carrasco;Chao Tan;Javier Escudero  
Publication Year: 2022,Page(s):288 - 300  
[HTML](#)

Modeling and Analysis of Opinion Dynamics in Social Networks Using Multiple-Population Mean Field Games  
Reginald A. Banez;Hao Gao;Lixin Li;Chungang Yang;Zhu Han;H. Vincent Poor  
Publication Year: 2022,Page(s):301 - 316  
[HTML](#)

Distributed Detection Fusion in Clustered Sensor Networks Over Multiple Access Fading Channels  
Sami A. Aldalahmeh;Domenico Ciuonzo  
Publication Year: 2022,Page(s):317 - 329  
[HTML](#)

Greedy k-Center From Noisy Distance Samples  
Neharika Jali;Nikhil Karamchandani;Sharayu Moharir  
Publication Year: 2022,Page(s):330 - 343  
[HTML](#)

Optimal Memory Scheme for Accelerated Consensus Over Multi-Agent Networks  
Jiahao Dai;Jing-Wen Yi;Li Chai  
Publication Year: 2022,Page(s):344 - 352  
[HTML](#)

Wasserstein-Based Graph Alignment  
Hermina Petric Maretic;Mireille El Gheche;Matthias Minder;Giovanni Chierchia;Pascal Frossard  
Publication Year: 2022,Page(s):353 - 363  
[HTML](#)

Deep Reinforcement Learning-Based Cloud-Edge Collaborative Mobile Computation Offloading in Industrial Networks  
Siguang Chen;Jiamin Chen;Yifeng Miao;Qian Wang;Chuanxin Zhao  
Publication Year: 2022,Page(s):364 - 375  
[HTML](#)

Hyper-Laplacian Regularized Nonconvex Low-Rank Representation for Multi-View Subspace Clustering  
Shuqin Wang;Yongyong Chen;Linna Zhang;Yigang Cen;Viacheslav Voronin  
Publication Year: 2022,Page(s):376 - 388  
[HTML](#)

Gaussian Kernel Variance for an Adaptive Learning Method on Signals Over Graphs  
Yue Zhao;Ender Ayanoglu  
Publication Year: 2022,Page(s):389 - 403  
[HTML](#)

Staleness Analysis in Asynchronous Optimization  
Haider Al-Lawati;Stark Draper  
Publication Year: 2022,Page(s):404 - 420  
[HTML](#)

Strategic DoS Attack in Continuous Space for Cyber-Physical Systems Over Wireless Networks  
Mengyu Huang;Kam Fai Elvis Tsang;Yuzhe Li;Li Li;Ling Shi  
Publication Year: 2022,Page(s):421 - 432  
[HTML](#)

An Efficient Distributed Kalman Filter Over Sensor Networks With Maximum Correntropy Criterion  
Chen Hu;Badong Chen  
Publication Year: 2022,Page(s):433 - 444  
[HTML](#)

Distributed Adaptive Tobit Kalman Filter for Networked Systems Under Sensor Delays and Censored Measurements  
Jiahao Zhang;Su Zhao  
Publication Year: 2022,Page(s):445 - 458  
[HTML](#)

Distributed Extended Object Tracking Using Coupled Velocity Model From WLS Perspective  
Zhifei Li;Yan Liang;Linfeng Xu  
Publication Year: 2022,Page(s):459 - 474  
[HTML](#)

Fair Contrastive Learning on Graphs  
Oyku Deniz Kose;Yanning Shen  
Publication Year: 2022,Page(s):475 - 488  
[HTML](#)

Model-Free Adaptive Control for Nonlinear Multi-Agent Systems With Encoding-Decoding Mechanism  
Shuhua Zhang;Lifeng Ma;Xiaojuan Yi  
Publication Year: 2022,Page(s):489 - 498  
[HTML](#)

Explaining Graph Neural Networks With Topology-Aware Node Selection: Application in Air Quality Inference  
Esther Rodrigo Bonet;Tien Huu Do;Xuening Qin;Jelle Hofman;Valerio Panzica La Manna;Wilfried Philips;Nikos Deligiannis  
Publication Year: 2022,Page(s):499 - 513  
[HTML](#)

Distributed Sparse Optimization With Weakly Convex Regularizer:  
Consensus Promoting and Approximate Moreau Enhanced  
Penalties Towards Global Optimality  
Kei Komuro;Masahiro Yukawa;Renato Luís Garrido Cavalcante  
Publication Year: 2022,Page(s):514 - 527  
[HTML](#)

Generalized Locally Most Powerful Tests for Distributed Sparse  
Signal Detection  
Abdolreza Mohammadi;Domenico Ciuonzo;Ali Khazaee;Pierluigi  
Salvo Rossi  
Publication Year: 2022,Page(s):528 - 542  
[HTML](#)

EDICS: Transactions on Signal and Information Processing Over  
Networks  
Publication Year: 2022,Page(s):C3 - C3  
[HTML](#)


IEEE SIGNAL PROCESSING SOCIETY  
Publication Year: 2022,Page(s):C4 - C4  
[HTML](#)

IEEE

# INTERNET OF THINGS JOURNAL

A JOINT PUBLICATION OF THE IEEE SENSORS COUNCIL 

THE IEEE COMMUNICATIONS SOCIETY 

THE IEEE COMPUTER SOCIETY 

THE IEEE SIGNAL PROCESSING SOCIETY 

JUNE 1, 2022

VOLUME 9

NUMBER 11

IITJAU

(ISSN 2327-4662)

Front Cover

Publication Year: 2022,Page(s):C1 - C1

[HTML](#)

IEEE INTERNET OF THINGS JOURNAL

Publication Year: 2022,Page(s):C2 - C2

[HTML](#)

Table of Contents

Publication Year: 2022,Page(s):i - iv

[HTML](#)

Guest Editorial Special Issue on Blockchain-Enabled Internet of Things

Bin Cao;Lei Zhang;Tony Q. S. Quek;Sichao Yang

Publication Year: 2022,Page(s):7876 - 7878

[HTML](#)

Blockchain-Empowered Federated Learning Approach for an Intelligent and Reliable D2D Caching Scheme

Runze Cheng;Yao Sun;Yijing Liu;Le Xia;Daquan Feng;Muhammad Ali Imran

Publication Year: 2022,Page(s):7879 - 7890

[HTML](#)

Toward Mobile Distributed Ledgers

Dimitris Chatzopoulos;Anurag Jain;Sujit Gujar;Boi Faltings;Pan Hui

Publication Year: 2022,Page(s):7891 - 7903

[HTML](#)

Trusted Resource Allocation Based on Smart Contracts for Blockchain-Enabled Internet of Things

Hongju Cheng;Qiaohong Hu;Xiaoqi Zhang;Zhiyong Yu;Yang Yang;Neal Xiong

Publication Year: 2022,Page(s):7904 - 7915

[HTML](#)

Fast and Scalable Distributed Consensus Over Wireless Large-Scale Internet of Things Network

Hojung Lee;Hyowoon Seo;Wan Choi

Publication Year: 2022,Page(s):7916 - 7930

[HTML](#)

A Proof-of-Transactions Blockchain Consensus Protocol for Large-Scale IoT

Zhendong Ai;Wei Cui

Publication Year: 2022,Page(s):7931 - 7943

[HTML](#)

Leader Confirmation Replication for Millisecond Consensus in Private Chains

Haiwen Du;Dongjie Zhu;Yundong Sun;Zhaoshuo Tian

Publication Year: 2022,Page(s):7944 - 7958

[HTML](#)

ATOM: Architectural Support and Optimization Mechanism for Smart Contract Fast Update and Execution in Blockchain-Based IoT

Tao Li;Yaozheng Fang;Zhaolong Jian;Xueshuo Xie;Ye Lu;Guiling Wang

Publication Year: 2022,Page(s):7959 - 7971

[HTML](#)

DT-SSIM: A Decentralized Trustworthy Self-Sovereign Identity Management Framework

Efat Samir;Hongyi Wu;Mohamed Azab;Chunsheng Xin;Qiao Zhang

Publication Year: 2022,Page(s):7972 - 7988

[HTML](#)

A Cross-Chain Trusted Reputation Scheme for a Shared Charging Platform Based on Blockchain

Yunhua He;Cui Zhang;Bin Wu;Yigang Yang;Ke Xiao;Hong Li

Publication Year: 2022,Page(s):7989 - 8000

[HTML](#)

The Block Propagation in Blockchain-Based Vehicular Networks

Xuefei Zhang;Wenbo Xia;Xiaochen Wang;Junjie Liu;Qimei Cui;Xiaofeng Tao;Ren Ping Liu

Publication Year: 2022,Page(s):8001 - 8011

[HTML](#)

A DAG Blockchain-Enhanced User-Autonomy Spectrum Sharing Framework for 6G-Enabled IoT

Hanwen Zhang;Supeng Leng;Fan Wu;Haoye Chai

Publication Year: 2022,Page(s):8012 - 8023

[HTML](#)

EntrapNet: A Blockchain-Based Verification Protocol for Trustless Computing

Chong Li;Lei Zhang;Senbiao Fang

Publication Year: 2022,Page(s):8024 - 8035

[HTML](#)

BPT: A Blockchain-Based Privacy Information Preserving System for Trust Data Collection Over Distributed Mobile-Edge Network

Ting Li;Wei Liu;Shangsheng Xie;Mianxiong Dong;Kaoru Ota;Neal N. Xiong;Qiang Li

Publication Year: 2022,Page(s):8036 - 8052

[HTML](#)

Hash Access in Blockchain Radio Access Networks: Characterization and Optimization  
Xintong Ling;Bowen Zhang;Hui Xie;Jiaheng Wang;Zhi Ding  
Publication Year: 2022,Page(s):8053 - 8066  
HTML

Virtual Reality Streaming in Blockchain-Enabled Fog Radio Access Networks  
Yang Liu;Qingan Chang;Mugen Peng;Tian Dang;Wanling Xiong  
Publication Year: 2022,Page(s):8067 - 8077  
HTML

A Blockchain-Based Multidomain Authentication Scheme for Conditional Privacy Preserving in Vehicular Ad-Hoc Network  
Yuhan Yang;Lijun Wei;Jing Wu;Chengnian Long;Bo Li  
Publication Year: 2022,Page(s):8078 - 8090  
Cited by: Papers (1)  
HTML

Blockchain-Enabled Privacy-Preserving Access Control for Data Publishing and Sharing in the Internet of Medical Things  
Guangjun Wu;Shupeng Wang;Zhaolong Ning;Jun Li records  
Publication Year: 2022,Page(s):8091 - 8104  
HTML

Blockchain-Enabled Two-Way Auction Mechanism for Electricity Trading in Internet of Electric Vehicles  
Long Luo;Jingcui Feng;Hongfang Yu;Gang Sun  
Publication Year: 2022,Page(s):8105 - 8118  
Cited by: Papers (3)  
HTML

Joint Security and Train Control Design in Blockchain-Empowered CBTC System  
Li Zhu;Hao Liang;Hongwei Wang;Bin Ning;Tao Tang  
Publication Year: 2022,Page(s):8119 - 8129  
HTML

Blockchain-Enabled Fish Provenance and Quality Tracking System  
Xu Wang;Guangsheng Yu;Ren Ping Liu;Jian Zhang;Qiang Wu;Steven W. Su;Ying He;Zongjian Zhang;Litao Yu;Taoping Liu;Wentian Zhang;Peter Loneragan;Eryk Dutkiewicz;Erik Poole;Nick Paton  
Publication Year: 2022,Page(s):8130 - 8142  
HTML

Secure Data Sharing: Blockchain-Enabled Data Access Control Framework for IoT  
Xin Wei;Yong Yan;Shaoyong Guo;Xuesong Qiu;Feng Qi  
Publication Year: 2022,Page(s):8143 - 8153  
HTML

A Blockchain-Based Shamir's Threshold Cryptography Scheme for Data Protection in Industrial Internet of Things Settings  
Keping Yu;Liang Tan;Caixia Yang;Kim-Kwang Raymond Choo;Ali Kashif Bashir;Joel J. P. C. Rodrigues;Takuro Sato  
Publication Year: 2022,Page(s):8154 - 8167  
HTML

Optimal Deployment Mechanism of Blockchain in Resource-Constrained IoT Systems  
Jianhong Zhou;Gang Feng;Yunxiang Wang  
Publication Year: 2022,Page(s):8168 - 8177  
HTML

A Trustworthy Safety Inspection Framework Using Performance-Security Balanced Blockchain  
Weishan Zhang;Gang Sun;Liang Xu;Qinghua Lu;Huansheng Ning;Peiying Zhang;Su Yang  
Publication Year: 2022,Page(s):8178 - 8190  
HTML

Blockchain Storage, Computation Offloading, and User Association for Heterogeneous Cellular Networks  
Yiping Zuo;Shi Jin;Shengli Zhang  
Publication Year: 2022,Page(s):8191 - 8204  
HTML

PUF-Based Authentication and Key Agreement Protocols for IoT, WSNs, and Smart Grids: A Comprehensive Survey  
Priyanka Mall;Ruhul Amin;Ashok Kumar Das;Mark T. Leung;Kim-Kwang Raymond Choo  
Publication Year: 2022,Page(s):8205 - 8228  
HTML

Recent Advances on Federated Learning for Cybersecurity and Cybersecurity for Federated Learning for Internet of Things  
Bimal Ghimire;Danda B. Rawat  
Publication Year: 2022,Page(s):8229 - 8249  
HTML

A Review on Cybersecurity of Cloud Computing for Supporting Connected Vehicle Applications  
M Sabbir Salek;Sakib Mahmud Khan;Mizanur Rahman;Hsien-Wen Deng;Mhafuzul Islam;Zadid Khan;Mahsrur Chowdhury;Mitch Shue  
Publication Year: 2022,Page(s):8250 - 8268  
HTML

A Survey on Attribute-Based Encryption Schemes Suitable for the Internet of Things  
Marco Rasori;Michele La Manna;Pericle Perazzo;Gianluca Dini  
Publication Year: 2022,Page(s):8269 - 8290  
HTML

Resource Allocation Modes in C-V2X: From LTE-V2X to 5G-V2X  
Khabaz Sehla;Thi Mai Trang Nguyen;Guy Pujolle;Pedro Braconnot Velloso  
Publication Year: 2022,Page(s):8291 - 8314  
HTML

RL/DRL Meets Vehicular Task Offloading Using Edge and Vehicular Cloudlet: A Survey  
Jinshi Liu;Manzoor Ahmed;Muhammad Ayzed Mirza;Wali Ullah Khan;Dianlei Xu;Jianbo Li;Abdul Aziz;Zhu Han  
Publication Year: 2022,Page(s):8315 - 8338  
HTML

Aerial Computing: A New Computing Paradigm, Applications, and Challenges  
Quoc-Viet Pham;Rukhsana Ruby;Fang Fang;Dinh C. Nguyen;Zhaohui Yang;Mai Le;Zhiguo Ding;Won-Joo Hwang  
Publication Year: 2022,Page(s):8339 - 8363  
Cited by: Papers (1)  
HTML

Machine Learning in Real-Time Internet of Things (IoT) Systems: A Survey  
Jiang Bian;Abdullah Al Arafat;Haoyi Xiong;Jing Li;Li Li;Hongyang Chen;Jun Wang;Dejing Dou;Zhishan Guo  
Publication Year: 2022,Page(s):8364 - 8386  
HTML



Edge-Cloud-Aided Differentially Private Tucker Decomposition for Cyber-Physical-Social Systems  
Jun Feng; Laurence T. Yang; Xin Nie; Nicholas J. Gati  
Publication Year: 2022, Page(s): 8387 - 8396  
Cited by: Papers (1)  
HTML

A Data Agent Inspired by Interpersonal Interaction Behaviors for Wireless Sensor Networks  
Gang Li; Bin He; Zhipeng Wang; Yanmin Zhou  
Publication Year: 2022, Page(s): 8397 - 8411  
HTML

A Deep Learning Model for Earthquake Parameters Observation in IoT System-Based Earthquake Early Warning  
Mohamed S. Abdalzafer; M. Sami Soliman; Sherif M. El-Hady; Abderrahim Benslimane; Mohamed Elwekeil  
Publication Year: 2022, Page(s): 8412 - 8424  
Cited by: Papers (1)  
HTML

Recommendations in Smart Devices Using Federated Tensor Learning  
Jia Yang; Cai Fu; Xiao-Yang Liu; Anwar Walid  
Publication Year: 2022, Page(s): 8425 - 8437  
HTML

A Distributed Framework for Low-Latency Data Collection in Battery-Free Wireless Sensor Networks  
Jin Zhang; Hong Gao; Kaiqi Zhang; Quan Chen; Jianzhong Li  
Publication Year: 2022, Page(s): 8438 - 8453  
HTML

Satisfied Matching-Embedded Social Internet of Things for Content Preference-Aware Resource Allocation in D2D Underlying Cellular Networks  
Yu Li; Zhiwei Guo; Ting Yang; Li Jiang; Meng Li  
Publication Year: 2022, Page(s): 8454 - 8468  
HTML

Toward Future Internet of Things Experimentation and Evaluation  
Thiago Bueno da Silva; Ramon P. dos Santos Chaib; Cerqueira S. Arismar; Rodrigo da Rosa Righi; Antonio Marcos Alberti  
Publication Year: 2022, Page(s): 8469 - 8484  
HTML

Secure and Lightweight Conditional Privacy-Preserving Authentication for Fog-Based Vehicular Ad Hoc Networks  
Hong Zhong; Lei Chen; Jie Cui; Jing Zhang; Irina Bolodurina; Lu Liu  
Publication Year: 2022, Page(s): 8485 - 8497  
HTML

Cooperative Bargaining Game-Based Scheduling Model With Variable Multiobjective Weights in a UWB and 5G Embedded Workshop  
Lin Qian; Rongyong Zhao; Hao Zhang; Jianfeng Lu; Wei Wu  
Publication Year: 2022, Page(s): 8498 - 8514  
HTML

DeFall: Environment-Independent Passive Fall Detection Using WiFi  
Yuqian Hu; Feng Zhang; Chenshu Wu; Beibei Wang; K. J. Ray Liu  
Publication Year: 2022, Page(s): 8515 - 8530  
HTML

Resource-Efficient Visual Multiobject Tracking on Embedded Device  
Jingzheng Tu; Cailian Chen; Qimin Xu; Bo Yang; Xiping Guan  
Publication Year: 2022, Page(s): 8531 - 8543  
HTML

Energy-Aware Computation Management Strategy for Smart Logistic System With MEC  
Jia Xu; Xiao Liu; Xuejun Li; Lei Zhang; Jiong Jin; Yun Yang  
Publication Year: 2022, Page(s): 8544 - 8559  
HTML

Personalized Content Sharing via Mobile Crowdsensing  
Lindong Zhao; Xin Wei; Jianxin Chen; Liang Zhou; Mohsen Guizani  
Publication Year: 2022, Page(s): 8560 - 8571  
HTML

Improving Performance of Association Control in IEEE 802.11ah-Based Massive IoT Networks  
Amin Jamali; Behrouz Shahgholi Ghahfarokhi; Masih Abedini  
Publication Year: 2022, Page(s): 8572 - 8583  
HTML

WiFi-Based Cross-Domain Gesture Recognition via Modified Prototypical Networks  
Xie Zhang; Chengpei Tang; Kang Yin; Qingqian Ni  
Publication Year: 2022, Page(s): 8584 - 8596  
HTML

PRISM: Priority-Aware Service Availability in Multi-UAV Networks for IoT Applications  
Abhishek Bera; Sudip Misra; Chandranath Chatterjee  
Publication Year: 2022, Page(s): 8597 - 8606  
Cited by: Papers (1)  
HTML

YSF: A 6TiSCH Scheduling Function Minimizing Latency of Data Gathering in IIoT  
Yasuyuki Tanaka; Pascale Minet; Mališa Vučinić; Xavier Vilajosana; Thomas Watteyne  
Publication Year: 2022, Page(s): 8607 - 8615  
HTML

A Heterogeneous Access Metamodel for Efficient IoT Remote Sensing Observation Management: Taking Precision Agriculture as an Example  
Lianjie Zhou; Wei Tu; Chisheng Wang; Qingquan Li  
Publication Year: 2022, Page(s): 8616 - 8632  
HTML

BlueSync: Time Synchronization in Bluetooth Low Energy With Energy-Efficient Calculations  
Farzad Asgarian; Khalil Najafi  
Publication Year: 2022, Page(s): 8633 - 8645  
HTML

A Tunable Caching Distribution Model for Unmanned Aerial Vehicle Networks  
Wenfei Tang; Hongtao Zhang  
Publication Year: 2022, Page(s): 8646 - 8656  
HTML

On-Site Colonoscopy Autodiagnosis Using Smart Internet of Medical Things  
Jie Chen; Xiaoxiao Song; Zhichao Huang; Jianqiang Li; Zhaoxia Wang; Chengwen Luo; Fei Yu  
Publication Year: 2022, Page(s): 8657 - 8668  
HTML

Balanced-Offset Joint Acquisition of Physical Cell Identity and Radio Frame Number for NB-IoT Communication Systems  
Young-Hwan You; Yong-An Jung; Sung-Hun Lee; Hoon-Geun Song; Hyoung-Kyu Song  
Publication Year: 2022, Page(s): 8669 - 8680  
HTML

An Expressive Fully Policy-Hidden Ciphertext Policy Attribute-Based Encryption Scheme With Credible Verification Based on Blockchain  
Zhaoqian Zhang; Jianbiao Zhang; Yilin Yuan; Zheng Li  
Publication Year: 2022, Page(s): 8681 - 8692  
[HTML](#)

An Integrated RF-Powered Wake-Up Wireless Transceiver With – 26 dBm Sensitivity  
Mohammad Amin Karami; Kambiz Moez  
Publication Year: 2022, Page(s): 8693 - 8706  
[HTML](#)

Multiobjective Resource Allocation for mmWave MEC Offloading Under Competition of Communication and Computing Tasks  
Zhongling Zhao; Jia Shi; Zan Li; Jiangbo Si; Pei Xiao; Rahim Tafazolli  
Publication Year: 2022, Page(s): 8707 - 8719  
[HTML](#)

On Feasibility of Coordinated Time-Delay and False Data Injection Attacks on Cyber-Physical Systems  
Zhenyong Zhang; Ruilong Deng; Peng Cheng; Qiang Wei  
Publication Year: 2022, Page(s): 8720 - 8736  
Cited by: [Papers \(2\)](#)  
[HTML](#)

Secure Outsourcing of Large-Scale Convex Optimization Problem in Internet of Things  
Hongjun Li; Jia Yu; Ming Yang; Fanyu Kong  
Publication Year: 2022, Page(s): 8737 - 8748  
[HTML](#)

Conditional Anonymous Authentication With Abuse-Resistant Tracing and Distributed Trust for Internet of Vehicles  
Jiangtao Li; Yufeng Li; Chenhong Cao; Kwok-Yan Lam  
Publication Year: 2022, Page(s): 8749 - 8762  
[HTML](#)

Node Collaborative Sensing-Based Redundant Path Construction for Multiarea Coverage in MWSNs  
Minghua Wang; Chenxuan Zhai  
Publication Year: 2022, Page(s): 8763 - 8773  
Cited by: [Papers \(1\)](#)  
[HTML](#)

Resource Allocation for IRS-Assisted Wireless-Powered FDMA IoT Networks  
Zheng Chu; Zhengyu Zhu; Xingwang Li; Fuhui Zhou; Li Zhen; Naofal Al-Dhahir  
Publication Year: 2022, Page(s): 8774 - 8785  
Cited by: [Papers \(1\)](#)  
[HTML](#)

Hypergraph-Based Active Minimum Delay Data Aggregation Scheduling in Wireless-Powered IoT  
Xianlong Jiao; Wei Lou; Songtao Guo; Ning Wang; Chao Chen; Kai Liu  
Publication Year: 2022, Page(s): 8786 - 8799  
Cited by: [Papers \(1\)](#)  
[HTML](#)

IoQZ: An Implementation of a Quiet Zone  
Abdullah Almurayh; Ohoud Alshaeri; Noor Alghadeer; Reema Alyousef; Rayana Alshehri; Sukaina Al-Hajri; Mehwash Farooqui  
Publication Year: 2022, Page(s): 8800 - 8808  
[HTML](#)

Network Robustness Analysis for IoT Networks Using Regular Graphs  
Sateeshkrishna Dhuli; Said Kouachi; Anamika Chhabra; Yatindra Nath Singh  
Publication Year: 2022, Page(s): 8809 - 8819  
[HTML](#)

Game-Based Channel Access for AoI-Oriented Data Transmission Under Dynamic Attack  
Yaoqi Yang; Xianglin Wei; Renhui Xu; Laixian Peng; Lingjun Liu  
Publication Year: 2022, Page(s): 8820 - 8837  
[HTML](#)

A Low-Profile Programmable Beam Scanning Holographic Array Antenna Without Phase Shifters  
Shaopeng Pan; Mingtuan Lin; Ming Xu; Shichao Zhu; Li-An Bian; Gaosheng Li  
Publication Year: 2022, Page(s): 8838 - 8851  
[HTML](#)

Revenue and Energy Efficiency-Driven Delay-Constrained Computing Task Offloading and Resource Allocation in a Vehicular Edge Computing Network: A Deep Reinforcement Learning Approach  
Xinyu Huang; Lijun He; Xing Chen; Liejun Wang; Fan Li  
Publication Year: 2022, Page(s): 8852 - 8868  
[HTML](#)

LoRa Signal Synchronization and Detection at Extremely Low Signal-to-Noise Ratios  
Thomas Ameloot; Hendrik Rogier; Marc Moeneclae; Patrick Van Torre  
Publication Year: 2022, Page(s): 8869 - 8882  
[HTML](#)

Blockchain and PUF-Based Lightweight Authentication Protocol for Wireless Medical Sensor Networks  
Weizheng Wang; Qiu Chen; Zhimeng Yin; Gautam Srivastava; Thippa Reddy Gadekallu; Fawaz Alsolami; Chunhua Su  
Publication Year: 2022, Page(s): 8883 - 8891  
Cited by: [Papers \(2\)](#)  
[HTML](#)

Fault Detection and Classification in Industrial IoT in Case of Missing Sensor Data  
Merim Dzaferagic; Nicola Marchetti; Irene Macaluso  
Publication Year: 2022, Page(s): 8892 - 8900  
[HTML](#)

Partially Cooperative Scalable Spectrum Sensing in Cognitive Radio Networks Under SDF Attacks  
Sadia Khaf; Mohammad T. Alkhodary; Georges Kaddoum  
Publication Year: 2022, Page(s): 8901 - 8912  
[HTML](#)

An Improved Random Access Scheme Using Directional Beams for 5G Massive Machine-Type Communications  
Xuming Pei; Hua Qian; Haifeng Wang; Kai Kang  
Publication Year: 2022, Page(s): 8913 - 8924  
[HTML](#)

A Multibeam Ambient Electromagnetic Energy Harvester With Full Azimuthal Coverage  
Wenhui Deng; Shuihong Wang; Boru Yang; Shaoyong Zheng  
Publication Year: 2022, Page(s): 8925 - 8934  
[HTML](#)

Wi-Fi-Based Tracking of Human Walking for Home Health Monitoring  
Chi-Lun Lin;Wen-Jia Chang;Guan-Hua Tu  
Publication Year: 2022,Page(s):8935 - 8942  
HTML

Sequential Data-Driven Automatic Calibration of Wind Turbine Fault Information in Smart Grids  
Lipeng Zhu;Yue Song  
Publication Year: 2022,Page(s):8943 - 8952  
Cited by: Papers (1)  
HTML

Real-Time Human Motion Capture Based on Wearable Inertial Sensor Networks  
Jie Li;Xiaofeng Liu;Zhelong Wang;Hongyu Zhao;Tingting Zhang;Sen Qiu;Xu Zhou;Huili Cai;Rongrong Ni;Angelo Cangelosi  
Publication Year: 2022,Page(s):8953 - 8966  
HTML

Efficient Certificateless Online/Offline Signcryption Scheme for Edge IoT Devices  
Jiasheng Chen;Liangliang Wang;Mi Wen;Kai Zhang;Kefei Chen  
Publication Year: 2022,Page(s):8967 - 8979  
Cited by: Papers (1)  
HTML

Feasible Region of Secure and Distributed Data Storage in Adversarial Networks  
Jian Ren;Jian Li;Tongtong Li;Matt W. Mutka  
Publication Year: 2022,Page(s):8980 - 8988  
HTML

A New-Dynamic Adaptive Data Rate Algorithm of LoRaWAN in Harsh Environment  
Chao Jiang;Yue Yang;Xianghui Chen;Jianxin Liao;Weixian Song;Xihai Zhang  
Publication Year: 2022,Page(s):8989 - 9001  
HTML

A Low-Power Connected 3-D Indoor Positioning Device  
Malith Maheepala;Matthew A. Joordens;Abbas Z. Kouzani  
Publication Year: 2022,Page(s):9002 - 9011  
Cited by: Papers (1)  
HTML

Threat of Adversarial Attacks on DL-Based IoT Device Identification  
Zhida Bao;Yun Lin;Sicheng Zhang;Zixin Li;Shiwen Mao  
Publication Year: 2022,Page(s):9012 - 9024  
Cited by: Papers (1)  
HTML

Lyapunov-Based Partial Computation Offloading for Multiple Mobile Devices Enabled by Harvested Energy in MEC  
Min Guo;Wei Wang;Xing Huang;Yanru Chen;Lei Zhang;Liangyin Chen  
Publication Year: 2022,Page(s):9025 - 9035  
HTML

Orientation and Channel-Independent RF Fingerprinting for 5G IEEE 802.11ad Devices  
Ning Wang;Weiwei Li;Long Jiao;Amir Alipour-Fanid;Tao Xiang;Kai Zeng  
Publication Year: 2022,Page(s):9036 - 9048  
HTML

An Efficient Multiresolution Network for Vehicle Reidentification  
Fei Shen;Jianqing Zhu;Xiaobin Zhu;Jingchang Huang;Huanqiang Zeng;Zhen Lei;Canhui Cai  
Publication Year: 2022,Page(s):9049 - 9059  
HTML

Reinforcement Learning for Energy-Efficient Trajectory Design of UAVs  
Atefeh Hajjamali Arani;M. Mahdi Azari;Peng Hu;Yeying Zhu;Halim Yanikomeroglu;Safieddin Safavi-Naeini  
Publication Year: 2022,Page(s):9060 - 9070  
HTML

ESCVAD: An Energy-Saving Routing Protocol Based on Voronoi Adaptive Clustering for Wireless Sensor Networks  
Ning Ma;Hang Zhang;Hang Hu;Yuan Qin  
Publication Year: 2022,Page(s):9071 - 9085  
HTML

Online Stable Task Assignment in Opportunistic Mobile Crowdsensing With Uncertain Trajectories  
Fatih Yucel;Eyuphan Bulut  
Publication Year: 2022,Page(s):9086 - 9101  
HTML

IEEE Internet of Things Journal  
Publication Year: 2022,Page(s):C3 - C3  
HTML

Information for Authors  
Publication Year: 2022,Page(s):C4 - C4  
HTML

IEEE

# INTERNET OF THINGS JOURNAL

A JOINT PUBLICATION OF THE IEEE SENSORS COUNCIL



THE IEEE COMMUNICATIONS SOCIETY



THE IEEE COMPUTER SOCIETY



THE IEEE SIGNAL PROCESSING SOCIETY



JUNE 15, 2022

VOLUME 9

NUMBER 12

IITJAU

(ISSN 2327-4662)

[Front Cover](#)

Publication Year: 2022,Page(s):C1 - C1

[HTML](#)

[IEEE Internet of Things Journal Publication Information](#)

Publication Year: 2022,Page(s):C2 - C2

[HTML](#)

[Table of Contents](#)

Publication Year: 2022,Page(s):i - iv

[HTML](#)

[Guest Editorial Special Issue on Graph-Powered Machine Learning for Internet of Things](#)

Zhipeng Cai;Suparna De;Michal Kedziora;Chaokun Wang

Publication Year: 2022,Page(s):9102 - 9105

[HTML](#)

[Integrated Air-Ground Vehicles for UAV Emergency Landing Based on Graph Convolution Network](#)

Jie Chen;Yifan Zhang;Jianqiang Li;Weiming Du;Zhuangzhuang

Chen;Zun Liu;Huihui Wang;Victor C. M. Leung

Publication Year: 2022,Page(s):9106 - 9116

[HTML](#)

[Hidden-Markov-Model-Enabled Prediction and Visualization of Cyber Agility in IoT Era](#)

Eric Muhati;Danda B. Rawat

Publication Year: 2022,Page(s):9117 - 9127

Cited by: Papers (1)

[HTML](#)

[Tensor Graph Attention Network for Knowledge Reasoning in Internet of Things](#)

Jing Yang;Laurence T. Yang;Hao Wang;Yuan Gao;Huazhong

Liu;Xia Xie

Publication Year: 2022,Page(s):9128 - 9137

Cited by: Papers (2)

[HTML](#)

[Toward Deep Q-Network-Based Resource Allocation in Industrial Internet of Things](#)

Fan Liang;Wei Yu;Xing Liu;David Griffith;Nada Golmie

Publication Year: 2022,Page(s):9138 - 9150

[HTML](#)

[Semantic-Fuzzing-Based Empirical Analysis of Voice Assistant Systems of Asian Symbol Languages](#)

Jian Mao;Ziwen Liu;Qixiao Lin;Zhenkai Liang

Publication Year: 2022,Page(s):9151 - 9166

[HTML](#)

[RRL-GAT: Graph Attention Network-Driven Multilabel Image Robust Representation Learning](#)

Bin Hu;Kehua Guo;Xiaokang Wang;Jian Zhang;Di Zhou

Publication Year: 2022,Page(s):9167 - 9178

Cited by: Papers (3)

[HTML](#)

[Learning Graph Structures With Transformer for Multivariate Time-Series Anomaly Detection in IoT](#)

Zekai Chen;Dingshuo Chen;Xiao Zhang;Zixuan Yuan;Xiuzhen

Cheng

Publication Year: 2022,Page(s):9179 - 9189

Cited by: Papers (2)

[HTML](#)

[GSAN: Graph Self-Attention Network for Learning Spatial-Temporal Interaction Representation in Autonomous Driving](#)

Luyao Ye;Zezhong Wang;Xinhong Chen;Jianping Wang;Kui

Wu;Kejie Lu

Publication Year: 2022,Page(s):9190 - 9204

[HTML](#)

[Zero-Shot Text Classification via Knowledge Graph Embedding for Social Media Data](#)

Qi Chen;Wei Wang;Kaizhu Huang;Frans Coenen

Publication Year: 2022,Page(s):9205 - 9213

[HTML](#)

[Graph Neural Networks for Anomaly Detection in Industrial Internet of Things](#)

Yulei Wu;Hong-Ning Dai;Haina Tang

Publication Year: 2022,Page(s):9214 - 9231

Cited by: Papers (6)

[HTML](#)

[Spatial-Temporal Graph Data Mining for IoT-Enabled Air Mobility Prediction](#)

Yushan Jiang;Shuteng Niu;Kai Zhang;Bowen Chen;Chengtao

Xu;Dahai Liu;Houbing Song

Publication Year: 2022,Page(s):9232 - 9240

Cited by: Papers (3)

[HTML](#)

Core-GAE: Toward Generation of IoT Networks  
Qi Luo;Dongxiao Yu;Yanwei Zheng;Hao Sheng;Xiuzhen Cheng  
Publication Year: 2022,Page(s):9241 - 9248  
HTML

Edge-Based Video Surveillance With Graph-Assisted Reinforcement Learning in Smart Construction  
Zhongxing Ming;Jinshen Chen;Laizhong Cui;Shu Yang;Yi Pan;Wei Xiao;Lixin Zhou  
Publication Year: 2022,Page(s):9249 - 9265  
Cited by: Papers (3)  
HTML

Spatial-Temporal Chebyshev Graph Neural Network for Traffic Flow Prediction in IoT-Based ITS  
Biwei Yan;Guijuan Wang;Jiguo Yu;Xiaozheng Jin;Hongliang Zhang  
Publication Year: 2022,Page(s):9266 - 9279  
HTML

Top-k Socially Constrained Spatial Keyword Search in Large IoT Networks  
Jinbao Wang;Zuobin Xiong;Qilong Han;Xixian Han;Donghua Yang  
Publication Year: 2022,Page(s):9280 - 9289  
HTML

Digital-Twin-Aided Product Design Framework For IoT Platforms  
Chenyu Wang;Yingshu Li  
Publication Year: 2022,Page(s):9290 - 9300  
HTML

Distributed and Privacy Preserving Graph Data Collection in Internet of Thing Systems  
Xu Zheng;Ling Tian;Bei Hui;Xin Liu  
Publication Year: 2022,Page(s):9301 - 9309  
HTML

Hierarchical Adversarial Attacks Against Graph-Neural-Network-Based IoT Network Intrusion Detection System  
Xiaokang Zhou;Wei Liang;Weimin Li;Ke Yan;Shohei Shimizu;Kevin I-Kai Wang  
Publication Year: 2022,Page(s):9310 - 9319  
HTML

Transient Stability Assessment Based on Gated Graph Neural Network With Imbalanced Data in Internet of Energy  
Xiaomei Zhou;Xin Guan;Di Sun;Haiyang Jiang;Jialiang Peng;Yan Jin;Yan Zhang  
Publication Year: 2022,Page(s):9320 - 9331  
HTML

Coverless Information Hiding Based on Probability Graph Learning for Secure Communication in IoT Environment  
Zhili Zhou;Yuecheng Su;Yulan Zhang;Zhihua Xia;Shan Du;Brij B. Gupta;Lianying Qi  
Publication Year: 2022,Page(s):9332 - 9341  
HTML

Improving Person Reidentification Using a Self-Focusing Network in Internet of Things  
Meixia Fu;Songlin Sun;Hui Gao;Danshi Wang;Xiaoyun Tong;Qiang Liu;Qilian Liang  
Publication Year: 2022,Page(s):9342 - 9353  
HTML

A Learning-Aided Intermittent Cooperative Jamming Scheme for Nonslotted Wireless Transmission in an IoT System  
Yan Huo;Yuandong Wu;Ruinian Li;Qinghe Gao;Xiling Luo  
Publication Year: 2022,Page(s):9354 - 9366  
Cited by: Papers (1)  
HTML

Multitask Offloading Strategy Optimization Based on Directed Acyclic Graphs for Edge Computing  
Jiawen Chen;Yajun Yang;Chenyang Wang;Heng Zhang;Chao Qiu;Xiaofei Wang  
Publication Year: 2022,Page(s):9367 - 9378  
HTML

Spatiotemporal Scene-Graph Embedding for Autonomous Vehicle Collision Prediction  
Arnav Vaibhav Malawade;Shih-Yuan Yu;Brandon Hsu;Deepan Muthirayan;Pramod P. Khargonekar;Mohammad Abdullah Al Faruque  
Publication Year: 2022,Page(s):9379 - 9388  
HTML

Datasets  
Dynamic Virtual Network Embedding Algorithm Based on Graph Convolution Neural Network and Reinforcement Learning  
Peiyong Zhang;Chao Wang;Neeraj Kumar;Weishan Zhang;Lei Liu  
Publication Year: 2022,Page(s):9389 - 9398  
Cited by: Papers (2)  
HTML

Hierarchical Knowledge-Based Graph Embedding Model for Image-Text Matching in IoTs  
Lizong Zhang;Meng Li;Ke Yan;Ruozhou Wang;Bei Hui  
Publication Year: 2022,Page(s):9399 - 9409  
HTML

An Integrated PCA-DAEGCN Model for Movie Recommendation in the Social Internet of Things  
Wei Sun;Jianhua Jiang;Yubo Huang;Jinlai Li;Mengmeng Zhang  
Publication Year: 2022,Page(s):9410 - 9418  
HTML

Edge-Assisted Solutions for IoT-Based Connected Healthcare Systems: A Literature Review  
Vahideh Hayyolalam;Moayad Aloqaily;Öznur Özkasap;Mohsen Guizani  
Publication Year: 2022,Page(s):9419 - 9443  
HTML

A Taxonomy of Machine-Learning-Based Intrusion Detection Systems for the Internet of Things: A Survey  
Abbas Jamalipour;Sarumathi Murali  
Publication Year: 2022,Page(s):9444 - 9466  
HTML

GS-QRNN: A High-Efficiency Automatic Modulation Classifier for Cognitive Radio IoT  
Pejman Ghasemzadeh;Michael Hempel;Hamid Sharif  
Publication Year: 2022,Page(s):9467 - 9477  
HTML

A Review of IoT-Enabled Mobile Healthcare: Technologies, Challenges, and Future Trends  
Yilin Yang;Haocong Wang;Ruizhe Jiang;Xiaonan Guo;Jerry Cheng;Yingying Chen  
Publication Year: 2022,Page(s):9478 - 9502  
HTML

Secure Boolean Spatial Keyword Query With Lightweight Access Control in Cloud Environments  
Ningning Cui;Xiaochun Yang;Yunliang Chen;Jianxin Li;Bin Wang;Geyong Min  
Publication Year: 2022,Page(s):9503 - 9514  
HTML



Inconspicuous Adversarial Patches for Fooling Image-Recognition Systems on Mobile Devices  
Tao Bai;Jinqi Luo;Jun Zhao  
Publication Year: 2022,Page(s):9515 - 9524  
HTML

CatCharger: Deploying In-Motion Wireless Chargers in a Metropolitan Road Network via Categorization and Clustering of Vehicle Traffic  
Li Yan;Haiying Shen;Juanjuan Zhao;Chengzhong Xu;Feng Luo;Chenxi Qiu;Zhe Zhang;Shohaib Mahmud  
Publication Year: 2022,Page(s):9525 - 9541  
HTML

Robust Continuous Authentication Using Cardiac Biometrics From Wrist-Worn Wearables  
Tianming Zhao;Yan Wang;Jian Liu;Jerry Cheng;Yingying Chen;Jiadi Yu  
Publication Year: 2022,Page(s):9542 - 9556  
Cited by: Papers (1)  
HTML

Channel-State-Based Fingerprinting Against Physical Access Attack in Industrial Field Bus Network  
Pengfei Liu;Yang Liu;Xiangming Wang;Chao Fang;Xiaohong Guan;Ting Liu  
Publication Year: 2022,Page(s):9557 - 9573  
Cited by: Papers (1)  
HTML

Analysis and Optimization for Large-Scale LoRa Networks: Throughput Fairness and Scalability  
Jiangbin Lyu;Dan Yu;Liqun Fu  
Publication Year: 2022,Page(s):9574 - 9590  
Cited by: Papers (1)  
HTML

Joint Optimization Framework for Minimization of Device Energy Consumption in Transmission Rate Constrained UAV-Assisted IoT Network  
Abhishek Mondal;Deepak Mishra;Ganesh Prasad;Ashraf Hossain  
Publication Year: 2022,Page(s):9591 - 9607  
HTML

Federated Learning in Multi-RIS-Aided Systems  
Wanli Ni;Yuanwei Liu;Zhaohui Yang;Hui Tian;Xuemin Shen  
Publication Year: 2022,Page(s):9608 - 9624  
HTML

Performance Analysis and Optimization of NOMA-Based Cell-Free Massive MIMO for IoT  
Jiayi Zhang;Jingyi Fan;Jing Zhang;Derrick Wing Kwan Ng;Qiang Sun;Bo Ai  
Publication Year: 2022,Page(s):9625 - 9639  
Cited by: Papers (1)  
HTML

HADES-IoT: A Practical and Effective Host-Based Anomaly Detection System for IoT Devices (Extended Version)  
Dominik Breitenbacher;Ivan Homoliak;Yan Lin Aung;Yuval Elovici;Nils Ole Tippenhauer  
Publication Year: 2022,Page(s):9640 - 9658  
HTML

DDoS Defense for IoT: A Stackelberg Game Model-Enabled Collaborative Framework  
Xu Chen;Liang Xiao;Wei Feng;Ning Ge;Xianbin Wang  
Publication Year: 2022,Page(s):9659 - 9674  
HTML

Q-Soft: QoS-Aware Traffic Forwarding in Software-Defined Cyber-Physical Systems  
Samaresh Bera;Sudip Misra;Niloy Saha;Hamid Sharif  
Publication Year: 2022,Page(s):9675 - 9682  
HTML

On Security of TrustZone-M-Based IoT Systems  
Lan Luo;Yue Zhang;Clayton White;Brandon Keating;Bryan Pearson;Xinhui Shao;Zhen Ling;Haofei Yu;Cliff Zou;Xinwen Fu  
Publication Year: 2022,Page(s):9683 - 9699  
HTML

Stochastic Analysis of Double Blockchain Architecture in IoT Communication Networks  
Xin Hao;Phee Lep Yeoh;Zijie Ji;Yao Yu;Branka Vucetic;Yonghui Li  
Publication Year: 2022,Page(s):9700 - 9711  
HTML

Can Terahertz Provide High-Rate Reliable Low-Latency Communications for Wireless VR?  
Christina Chaccour;Mehdi Naderi Soorki;Walid Saad;Mehdi Bennis;Petar Popovski  
Publication Year: 2022,Page(s):9712 - 9729  
Cited by: Papers (3)  
HTML

Energy Efficiency of Full- and Half-Duplex Decode-and-Forward Relay Channels  
Jianhui Ma;Chuan Huang;Qiang Li  
Publication Year: 2022,Page(s):9730 - 9748  
HTML

BigEye: Detection and Summarization of Key Global Events From Distributed Crowdsensed Data  
Abdulrahman Fahim;Ajaya Neupane;Evangelos E. Papalexakis;Lance Kaplan;Srikanth V. Krishnamurthy;Tarek Abdelzaher  
Publication Year: 2022,Page(s):9749 - 9765  
HTML

Piezoelectric Micromachined Ultrasonic Transducer Array-Based Electronic Stethoscope for Internet of Medical Things  
Licheng Jia;Lei Shi;Chongbin Liu;Jing Xu;Yongjie Gao;Chengliang Sun;Sheng Liu;Guoqiang Wu  
Publication Year: 2022,Page(s):9766 - 9774  
HTML

Ensuring Data Freshness for Blockchain-Enabled Monitoring Networks  
Minsu Kim;Sungho Lee;Chanwon Park;Jemin Lee;Walid Saad  
Publication Year: 2022,Page(s):9775 - 9788  
HTML

Semantically Enhanced IoT-Oriented Seismic Event Detection: An Application to Colima and Vesuvius Volcanoes  
Mariasosaria Falanga;Enza De Lauro;Simona Petrosino;Diego Rincon-Yanez;Sabrina Senatore  
Publication Year: 2022,Page(s):9789 - 9803  
HTML

Modeling and Experimental Validation for Battery Lifetime Estimation in NB-IoT and LTE-M  
André Sørensen;Hua Wang;Maxime Jérôme Remy;Nicolaj Kjettrup;René Brandborg Sørensen;Jimmy Jessen Nielsen;Petar Popovski;Germán Corrales Madueño  
Publication Year: 2022,Page(s):9804 - 9819  
HTML



Using Compressive Sampling to Fill Interbatch Data Gap From Low-Cost IoT Vibration Sensor  
Boon-Yaik Ooi;Woan-Lin Beh;Xin-Yi Kh'Ng;Soung-Yue Liew;Shervin Shirmohammadi  
Publication Year: 2022,Page(s):9820 - 9830  
HTML

Error Performance and Mutual Information for IoNT Interface System  
Yu Li;Lin Lin;Weisi Guo;Dingguo Zhang;Kun Yang  
Publication Year: 2022,Page(s):9831 - 9842  
HTML

FALCON: A Networked Drone System for Sensing, Localizing, and Approaching RF Targets  
Zhambyl Shaikhanov;Ahmed Boubrima;Edward W. Knightly  
Publication Year: 2022,Page(s):9843 - 9857  
HTML

VL-Watchdog: Visible Light Spoofing Detection With Redundant Orthogonal Coding  
Jian Chen;Tao Shu  
Publication Year: 2022,Page(s):9858 - 9871  
HTML

Fidora: Robust WiFi-Based Indoor Localization via Unsupervised Domain Adaptation  
Xi Chen;Hang Li;Chenyi Zhou;Xue Liu;Di Wu;Gregory Dudek  
Publication Year: 2022,Page(s):9872 - 9888  
HTML

Hardware Acceleration for Postdecision State Reinforcement Learning in IoT Systems  
Jianchi Sun;Nikhilesh Sharma;Jacob Chakareski;Nicholas Mastronarde;Yingjie Lao  
Publication Year: 2022,Page(s):9889 - 9903  
HTML

Minimizing the Maximum Length of Flight Paths for UAVs Providing Location Service to Ground Targets  
Xiaojun Zhu;Youpeng Wang;Lijie Xu  
Publication Year: 2022,Page(s):9904 - 9917  
HTML

A Lightweight and Privacy-Preserving Mutual Authentication and Key Agreement Protocol for Internet of Drones Environment  
Cong Pu;Andrew Wall;Kim-Kwang Raymond Choo;Imtiaz Ahmed;Sunho Lim  
Publication Year: 2022,Page(s):9918 - 9933  
HTML

Detecting PLC Intrusions Using Control Invariants  
Zeyu Yang;Liang He;Hua Yu;Chengcheng Zhao;Peng Cheng;Jiming Chen  
Publication Year: 2022,Page(s):9934 - 9947  
HTML

Learning-Based Efficient Sparse Sensing and Recovery for Privacy-Aware IoMT  
Tiankuo Wei;Sicong Liu;Xiaojiang Du  
Publication Year: 2022,Page(s):9948 - 9959  
HTML

A Novel Intrusion Detection Method Based on Lightweight Neural Network for Internet of Things  
Ruijie Zhao;Guan Gui;Zhi Xue;Jie Yin;Tomoaki Ohtsuki;Bamidele Adebisi;Haris Gacanian  
Publication Year: 2022,Page(s):9960 - 9972  
HTML

Achieving Efficient and Privacy-Preserving Dynamic Skyline Query in Online Medical Diagnosis  
Songnian Zhang;Suprio Ray;Rongxing Lu;Yandong Zheng;Yunguo Guan;Jun Shao  
Publication Year: 2022,Page(s):9973 - 9986  
Cited by: Papers (1)  
HTML

Fuzzy Elliptic Curve Cryptography for Authentication in Internet of Things  
Abderrazak Abdaoui;Aiman Erbad;Abdulla Khalid Al-Ali;Amr Mohamed;Mohsen Guizani  
Publication Year: 2022,Page(s):9987 - 9998  
HTML

A Pseudopacket Scheduling Algorithm for Protecting Source Location Privacy in the Internet of Things  
Yu He;Guangjie Han;Mengting Xu;Miguel Martínez-García  
Publication Year: 2022,Page(s):9999 - 10009  
Cited by: Papers (1)  
HTML

H2HI-Net: A Dual-Branch Network for Recognizing Human-to-Human Interactions From Channel-State Information  
Mohamed Abdel-Basset;Hossam Hawash;Nour Moustafa;Nazeeruddin Mohammad  
Publication Year: 2022,Page(s):10010 - 10021  
Cited by: Papers (1)  
HTML

Fairness-Based Resource Allocation for Multiple Weights Opportunistic Beamforming in Internet of Things Networks  
Wen-Bin Sun;Wei-Xiao Meng;Ji-Chong Guo;Cheng Li  
Publication Year: 2022,Page(s):10022 - 10035  
HTML

Blockchain-Based Trustworthy Energy Dispatching Approach for High Renewable Energy Penetrated Power Systems  
Yang Xu;Ziming Liu;Cheng Zhang;Ju Ren;Yaoxue Zhang;Xuemin Shen  
Publication Year: 2022,Page(s):10036 - 10047  
Cited by: Papers (2)  
HTML

Direct Edge-to-Edge Many-to-Many Latent Feature Transfer Learning  
Ching-Hu Lu;Yang-Ming Zhou  
Publication Year: 2022,Page(s):10048 - 10060  
HTML

Energy-Efficient and Secure Communication Toward UAV Networks  
Teng Li;Jiawei Zhang;Mohammad S. Obaidat;Chi Lin;Yangxu Lin;Yulong Shen;Jianfeng Ma  
Publication Year: 2022,Page(s):10061 - 10076  
HTML

Wisual: Indoor Crowd Density Estimation and Distribution Visualization Using Wi-Fi  
Xiaoyu Ma;Wei Xi;Xinyu Zhao;Zuhao Chen;Hui Zhang;Jizhong Zhao  
Publication Year: 2022,Page(s):10077 - 10092  
HTML

Vacuum: Efficient and Assured Deletion Scheme for User Sensitive Data on Mobile Devices  
Li Yang;Cheng Li;Teng Wei;Fengwei Zhang;Jianfeng Ma;Naixue Xiong  
Publication Year: 2022,Page(s):10093 - 10107  
HTML

A Redesigned Identity-Based Anonymous Authentication Scheme for Mobile-Edge Computing  
Xiaoying Jia;Min Luo;Kim-Kwang Raymond Choo;Li Li;Debiao He  
Publication Year: 2022,Page(s):10108 - 10120  
HTML

Single-Antenna Device-to-Device Localization in Smart Environments With Backscatter  
Zhiqing Luo;Qian Zhang;Wei Wang;Tao Jiang  
Publication Year: 2022,Page(s):10121 - 10129  
HTML

SocialCattle: IoT-Based Mastitis Detection and Control Through Social Cattle Behavior Sensing in Smart Farms  
Yunhe Feng;Haoran Niu;Fanqi Wang;Susan J. Ivey;Jie Jayne Wu;Hairong Qi;Raul A. Almeida;Shigetoshi Eda;Qing Cao  
Publication Year: 2022,Page(s):10130 - 10138  
HTML

IEEE 802.11k-Based Lightweight, Distributed, and Cooperative Access Point Coverage Estimation Scheme in IoT Networks  
Chandrani Ray Chowdhury;Sudip Misra;Chittaranjan Mandal  
Publication Year: 2022,Page(s):10139 - 10148  
HTML

Number and Operation Time Minimization for Multi-UAV-Enabled Data Collection System With Time Windows  
Shuai Shen;Kun Yang;Kezhi Wang;Guopeng Zhang;Haibo Mei  
Publication Year: 2022,Page(s):10149 - 10161  
HTML

Adaptive Performance Modeling Framework for QoS-Aware Offloading in MEC-Based IIoT Systems  
Sujit Beborita;Dilip Senapati;Chhabi Rani Panigrahi;Bibudhendu Pati  
Publication Year: 2022,Page(s):10162 - 10171  
HTML

Throughput Enhancement in FD- and SWIPT-Enabled IoT Networks Over Nonidentical Rayleigh Fading Channels  
Tan N. Nguyen;Dinh-Hieu Tran;Van-Duc Phan;Miroslav Voznak;Symeon Chatzinotas;Björn Ottersten;H. Vincent Poor  
Publication Year: 2022,Page(s):10172 - 10186  
Cited by: Papers (2)  
HTML

MD-GAN-Based UAV Trajectory and Power Optimization for Cognitive Covert Communications  
Zan Li;Xiaomin Liao;Jia Shi;Li Li;Pei Xiao  
Publication Year: 2022,Page(s):10187 - 10199  
HTML

On Time-Frequency Synchronization in LoRa System: From Analysis to Near-Optimal Algorithm  
Vincent Savaux;Christophe Delacourt;Patrick Savelli  
Publication Year: 2022,Page(s):10200 - 10211  
Cited by: Papers (1)  
HTML

Age-of-Information-Based URLLC-Enabled UAV Wireless Communications System  
Chathuranga M. Wijerathna Basnayaka;Dushantha Nalin K. Jayakody;Zheng Chang  
Publication Year: 2022,Page(s):10212 - 10223  
Cited by: Papers (1)  
HTML

A Resilient and Hierarchical IoT-Based Solution for Stress Monitoring in Everyday Settings  
Shiyi Jiang;Farshad Firouzi;Krishnendu Chakrabarty;Eric B. Elbogen  
Publication Year: 2022,Page(s):10224 - 10243  
HTML

Distributed User Association With Grouping in Satellite-Terrestrial Integrated Networks  
Cui-Qin Dai;Shipeng Li;Jinsong Wu;Qianbin Chen  
Publication Year: 2022,Page(s):10244 - 10256  
HTML

Federated Learning for COVID-19 Detection With Generative Adversarial Networks in Edge Cloud Computing  
Dinh C. Nguyen;Ming Ding;Pubudu N. Pathirana;Aruna Seneviratne;Albert Y. Zomaya  
Publication Year: 2022,Page(s):10257 - 10271  
Cited by: Papers (1)  
HTML

WiHGR: A Robust WiFi-Based Human Gesture Recognition System via Sparse Recovery and Modified Attention-Based BGRU  
Wei Meng;Xingcan Chen;Wei Cui;Jing Guo  
Publication Year: 2022,Page(s):10272 - 10282  
Cited by: Papers (1)  
HTML

Urban Vehicle Localization in Public LoRaWan Network  
Yan Li;Johan Barthelemy;Shuai Sun;Pascal Perez;Bill Moran  
Publication Year: 2022,Page(s):10283 - 10294  
Cited by: Papers (2)  
HTML

A Dynamic Resource Allocation Model Based on SMDP and DRL Algorithm for Truck Platoon in Vehicle Network  
Hongbin Liang;Shuya Zhou;Xiaobo Liu;Fangfang Zheng;Xintao Hong;Xuemei Zhou;Lian Zhao  
Publication Year: 2022,Page(s):10295 - 10305  
HTML

Mixed-Criticality Industrial Data Scheduling on 5G NR  
Xi Jin;Yu Tian;Chi Xu;Changqing Xia;Dong Li;Peng Zeng  
Publication Year: 2022,Page(s):10306 - 10318  
HTML

Priority-Aware Cooperative Data Uploading in Body-to-Body Networks for Healthcare IoT  
Pradyumna Kumar Bishoyi;Sudip Misra  
Publication Year: 2022,Page(s):10319 - 10326  
HTML

Partial Cooperative Zero-Forcing Decoding for Uplink Cell-Free Massive MIMO  
Xinhua Wang;Julian Cheng;Chao Zhai;Alexei Ashikhmin  
Publication Year: 2022,Page(s):10327 - 10339  
HTML

Differential Game Approach for Attack-Defense Strategy Analysis in Internet of Things Networks  
Huici Wu;Qiuyue Gao;Xiaofeng Tao;Ning Zhang;Dajiang Chen;Zhu Han  
Publication Year: 2022,Page(s):10340 - 10353  
HTML

CPP-CLAS: Efficient and Conditional Privacy-Preserving Certificateless Aggregate Signature Scheme for VANETs  
Yulei Chen;Jianhua Chen  
Publication Year: 2022,Page(s):10354 - 10365  
HTML

A Multiscale CNN Framework for Wireless Technique Classification  
in Internet of Things  
Lu Yuan;Hao Zhang;Ming Xu;Fuhui Zhou;Qihui Wu  
Publication Year: 2022,Page(s):10366 - 10367  
HTML

MIMO-LoRa for High-Data-Rate IoT: Concept and Precoding  
Design  
Jae-Mo Kang  
Publication Year: 2022,Page(s):10368 - 10369  
HTML

IEEE Internet of Things Journal  
Publication Year: 2022,Page(s):C3 - C3  
HTML

Information for Authors  
Publication Year: 2022,Page(s):C4 - C4  
HTML

# IEEE TRANSACTIONS ON GREEN COMMUNICATIONS AND NETWORKING

A PUBLICATION OF  
THE IEEE COMMUNICATIONS SOCIETY  
THE IEEE SIGNAL PROCESSING SOCIETY  
THE IEEE VEHICULAR TECHNOLOGY SOCIETY



JUNE 2022

VOLUME 6

NUMBER 2

ITGCBM

(ISSN 2473-2400)

Table of Contents

Publication Year: 2022,Page(s):C1 - 656

[HTML](#)

IEEE Transactions on Green Communications and Networking

Publication Year: 2022,Page(s):C2 - C2

[HTML](#)

Editorial A Decade of Green Radio and the Path to "Net Zero": A United Kingdom Perspective

John S. Thompson;Simon Fletcher;Vasilis Friderikos;Yue

Gao;Lajos Hanzo;Mohammad Reza Nakhai;Timothy

O'Farrell;Patricia D. Wells

Publication Year: 2022,Page(s):657 - 664

[HTML](#)

Guest Editorial Special Issue on Energy-Efficient Reconfigurable Wireless Communication and Networks

Sudip Misra;Yue Gao;Nitin Gupta;Falko Dressler;Vincenzo

Piuri;Guoliang Xue

Publication Year: 2022,Page(s):665 - 668

[HTML](#)

BESS Aided Renewable Energy Supply Using Deep Reinforcement Learning for 5G and Beyond

Hao Yuan;Guoming Tang;Deke Guo;Kui Wu;Xun Shao;Keping

Yu;Wei Wei

Publication Year: 2022,Page(s):669 - 684

[HTML](#)

Energy Optimization for Green Communication in IoT Using Harris Hawks Optimization

Kapal Dev;Praveen Kumar Reddy Maddikunta;Thippa Reddy

Gadekallu;Sweta Bhattacharya;Pawan Hegde;Saurabh Singh

Publication Year: 2022,Page(s):685 - 694

[HTML](#)

Performance Evaluation of MPTCP Incast Based on Queuing Network

Jiamin Yao;Shanchen Pang;Joel José Puga Coelho

Rodrigues;Zhihan Lv;Shuyu Wang

Publication Year: 2022,Page(s):695 - 703

[HTML](#)

LSTM-Based Energy-Efficient Wireless Communication With Reconfigurable Intelligent Surfaces

Koyel Datta Gupta;Ritu Nigam;Deepak Kumar Sharma;Sanjay K.

Dhurandher

Publication Year: 2022,Page(s):704 - 712

[HTML](#)

Multi-Hop D2D Communication in Cellular Networks to Minimize EMR

Avirup Das;Nabanita Das;Abhirup Das Barman

Publication Year: 2022,Page(s):713 - 722

[HTML](#)

Improper Signaling for Multicell MIMO RIS-Assisted Broadcast Channels With I/Q Imbalance

Mohammad Soleymani;Ignacio Santamaria;Peter J. Schreier

Publication Year: 2022,Page(s):723 - 738

[HTML](#)

Joint Training of the Superimposed Direct and Reflected Links in Reconfigurable Intelligent Surface Assisted Multiuser Communications

Jiancheng An;Chao Xu;Li Wang;Yusha Liu;Lu Gan;Lajos Hanzo

Publication Year: 2022,Page(s):739 - 754

[HTML](#)

Toward Energy-Efficient Multiple IRSs: Federated Learning-Based Configuration Optimization

Lixin Li;Donghui Ma;Huan Ren;Peijue Wang;Wensheng Lin;Zhu

Han

Publication Year: 2022,Page(s):755 - 765

[HTML](#)

Intelligent Power Allocation Algorithm for Energy-Efficient Mobile Internet of Things (IoT) Networks

Lingwei Xu;Xinpeng Zhou;Ye Li;Fen Cai;Xu Yu;Neeraj Kumar

Publication Year: 2022,Page(s):766 - 775

[HTML](#)

Energy-Efficient Mobile Edge Computing Under Delay Constraints

Zhidu Li;Ni Zhu;Dapeng Wu;Honggang Wang;Ruyan Wang

Publication Year: 2022,Page(s):776 - 786

[HTML](#)

E2DA: Energy Efficient Data Aggregation and End-to-End Security in 3D Reconfigurable WSN  
Karthick Ramasamy;Mohammad Hossein Anisi;Anish Jindal  
Publication Year: 2022,Page(s):787 - 798  
HTML

Intelligent Reflecting Surface-Assisted Bistatic Backscatter Networks: Joint Beamforming and Reflection Design  
Xiaolun Jia;Xiangyun Zhou;Dusit Niyato;Jun Zhao  
Publication Year: 2022,Page(s):799 - 814  
Cited by: Papers (1)  
HTML

SEAT: Secure and Energy Efficient Anonymous Authentication With Trajectory Privacy-Preserving Scheme for Marine Traffic Management  
Subramani Jegadeesan;Mohammad S. Obaidat;Pandi Vijayakumar;Maria Azees  
Publication Year: 2022,Page(s):815 - 824  
HTML

Machine Learning for Spectrum Information and Routing in Multihop Green Cognitive Radio Networks  
Anal Paul;Santi P. Maity  
Publication Year: 2022,Page(s):825 - 835  
HTML

An Adaptive Modeling and Performance Evaluation Framework for Edge-Enabled Green IoT Systems  
Sujit Bebornta;Dilip Senapati;Chhabi Rani Panigrahi;Bibudhendu Pati  
Publication Year: 2022,Page(s):836 - 844  
HTML

Energy-Efficient Federated Learning With Intelligent Reflecting Surface  
Ticao Zhang;Shiwen Mao  
Publication Year: 2022,Page(s):845 - 858  
Cited by: Papers (1)  
HTML

The Prospect of Reconfigurable Intelligent Surfaces in Integrated Access and Backhaul Networks  
Maria Diamanti;Panagiotis Charatsaris;Eirini Eleni Tsiropoulou;Symeon Papavassiliou  
Publication Year: 2022,Page(s):859 - 872  
Cited by: Papers (1)  
HTML

Optimal Rotated QPSK Constellation for a Reliable SOMA Powerline Communication System in Nakagami- $m$  Noise Environment  
Soumya P. Dash  
Publication Year: 2022,Page(s):873 - 883  
HTML

Energy Allocation Design for the Satellite Return Channel of a Massive NOMA System With Interference Cancellation  
Francesc Molina;Josep Sala-Álvarez  
Publication Year: 2022,Page(s):884 - 896  
HTML

Energy Efficient QoS-Based Access Point Selection in Hybrid WiFi and LiFi IoT Networks  
Muhammad Asad;Saad Qaisar  
Publication Year: 2022,Page(s):897 - 906  
HTML

Improving Secrecy Rate and Social Welfare by NOMA Technique in D2D Communications Network  
Maryam Alibeigi;Abbas Taherpour;Saeed Gazor  
Publication Year: 2022,Page(s):907 - 916  
HTML

Improved Rate-Energy Trade-Off for SWIPT Using Chordal Distance Decomposition in Interference Alignment Networks  
Navneet Garg;Avinash Rudraksh;Govind Sharma;Tharmalingam Ratnarajah  
Publication Year: 2022,Page(s):917 - 929  
HTML

Energy-Efficient Coexistence of LiFi Users and Light Enabled IoT Devices  
Dil Nashin Anwar;Rizwana Ahmad;Anand Srivastava  
Publication Year: 2022,Page(s):930 - 950  
Cited by: Papers (2)  
HTML

Time Allocation and Optimization in UAV-Enabled Wireless Powered Communication Networks  
Hua Yan;Yunfei Chen;Shuang-Hua Yang  
Publication Year: 2022,Page(s):951 - 964  
HTML

Cooperative Computation and Cache Scheduling for UAV-Enabled MEC Networks  
Lingyan Bao;Jia Luo;Huiqi Bao;Yuyu Hao;Mingxiong Zhao  
Publication Year: 2022,Page(s):965 - 978  
HTML

A Predictive Energy Consumption Scheduling Algorithm for Multiprocessor Heterogeneous System  
Shujuan Tian;Wenjie Ren;Qingyong Deng;Song Zou;Yanchun Li  
Publication Year: 2022,Page(s):979 - 991  
HTML

Energy Efficiency Maximization for UAV-Assisted Full-Duplex NOMA System: User Clustering and Resource Allocation  
Mayur Katwe;Keshav Singh;Prabhat Kumar Sharma;Chih-Peng Li  
Publication Year: 2022,Page(s):992 - 1008  
HTML

Energy Efficient Aol Minimization in Opportunistic NOMA/OMA Broadcast Wireless Networks  
A. G. Ravi Sharan;Siddharth Deshmukh;Sibi Raj B. Pillai;Baltasar Beferull-Lozano  
Publication Year: 2022,Page(s):1009 - 1022  
HTML

Joint Optimization of USVs Communication and Computation Resource in IRS-Aided Wireless Inland Ship MEC Networks  
Qingsong Ai;Xinhui Qiao;Yangzhe Liao;Quan Yu  
Publication Year: 2022,Page(s):1023 - 1036  
HTML

AI-Based Secure NOMA and Cognitive Radio-Enabled Green Communications: Channel State Information and Battery Value Uncertainties  
Saeed Sheikhzadeh;Mohsen Pourghasemian;Mohammad Reza Javan;Nader Mokari;Eduard A. Jorswieck  
Publication Year: 2022,Page(s):1037 - 1054  
HTML

## Datasets

Proactive Eavesdropping via Opportunistic Energy Transfer and Jamming for Wireless-Powered Suspicious Communication  
Guojie Hu;Jiangbo Si;Yunlong Cai;Naofal Al-Dhahir  
Publication Year: 2022,Page(s):1055 - 1068  
[HTML](#)

Dynamic-Controlled RIS Assisted Multi-User MISO Downlink System: Joint Beamforming Design  
Yao Liu;Yu Zhang;Xiongwen Zhao;Suiyan Geng;Peng Qin;Zhenyu Zhou  
Publication Year: 2022,Page(s):1069 - 1081  
[HTML](#)

Energy and Resource Efficiency by User Traffic Prediction and Classification in Cellular Networks  
Amin Azari;Fateme Salehi;Panagiotis Papapetrou;Cicek Cavdar  
Publication Year: 2022,Page(s):1082 - 1095  
[HTML](#)

Fair Scheduling of Wireless Power Transfer to Nonlinear Energy Harvesters  
Ali Bayat;Sonia Aïssa  
Publication Year: 2022,Page(s):1096 - 1106  
Cited by: [Papers \(1\)](#)  
[HTML](#)

Ultra-Low-Power IoT Communications: A Novel Address Decoding Approach for Wake-Up Receivers  
Yousef Mafi;Fakhreddin Amirhosseini;Seied Ali Hosseini;Amin Azari;Meysam Masoudi;Mojtaba Vaezi  
Publication Year: 2022,Page(s):1107 - 1121  
[HTML](#)

IoT Coverage Enhancement Using Repetition in Energy Constrained Devices: An Analytic Approach  
Bisma Manzoor;Bassel Al Homssi;Akram Al-Hourani  
Publication Year: 2022,Page(s):1122 - 1131  
[HTML](#)

Sensing or Transmission? Stochastic Scheduling of Energy-Harvesting Sensors Toward Zero-Carbon IoT  
Deze Zeng;Yuepeng Li;Lvhao Chen;Lin Gu;Chengyu Hu  
Publication Year: 2022,Page(s):1132 - 1140  
[HTML](#)

Joint Information and Energy Transfer of SWIPT-Enabled Mobile Users in Wireless Networks  
Yuan Guo;Christodoulos Skouroumounis;Ioannis Krikidis  
Publication Year: 2022,Page(s):1141 - 1156  
[HTML](#)

Performance Analysis of a MIMO System With Bursty Traffic in the Presence of Energy Harvesting Jammer  
Sujatha Allipuram;Parthajit Mohapatra;Nikolaos Pappas;Shabnam Parmar;Saswat Chakrabarti  
Publication Year: 2022,Page(s):1157 - 1172  
[HTML](#)

Battery Recharging Time Models for Reconfigurable Intelligent Surfaces-Assisted Wireless Power Transfer Systems  
Lina Mohjazi;Sami Muhaidat;Qammer H. Abbasi;Muhammad Ali Imran;Octavia A. Dobre;Marco Di Renzo  
Publication Year: 2022,Page(s):1173 - 1185  
Cited by: [Papers \(1\)](#)  
[HTML](#)

Joint Optimization of Charging Location and Time for Network Lifetime Extension in WRSNs  
Thuy Dung Nguyen;Tuyen Nguyen;Thanh Hung Nguyen;Kien Nguyen;Phi Le Nguyen  
Publication Year: 2022,Page(s):1186 - 1197  
[HTML](#)

Performance of SWIPT in Cooperative Networks With Direct Link and Nonlinear Energy Harvesting at the Battery-Assisted Relay  
Kamal Agrawal;Anand Jee;Shankar Prakriya  
Publication Year: 2022,Page(s):1198 - 1215  
[HTML](#)

An Architecture for Distributed Energies Trading in Byzantine-Based Blockchains  
Jianxiong Guo;Xingjian Ding;Weili Wu  
Publication Year: 2022,Page(s):1216 - 1230  
[HTML](#)

A Multi-Objective Meta-Heuristic Solution for Green Computing in Software-Defined Wireless Sensor Networks  
Rashmi Chaudhry;Neetesh Kumar  
Publication Year: 2022,Page(s):1231 - 1241  
Cited by: [Papers \(1\)](#)  
[HTML](#)

Discontinuous Computation Offloading for Energy-Efficient Mobile Edge Computing  
Mattia Merluzzi;Nicola di Pietro;Paolo Di Lorenzo;Emilio Calvanese Strinati;Sergio Barbarossa  
Publication Year: 2022,Page(s):1242 - 1257  
[HTML](#)

IEEE Communications Society Information  
Publication Year: 2022,Page(s):C3 - C3  
[HTML](#)



IEEE JOURNAL OF

# BIOMEDICAL AND HEALTH INFORMATICS

A PUBLICATION OF  
THE IEEE ENGINEERING IN MEDICINE AND BIOLOGY SOCIETY  
THE IEEE COMMUNICATIONS SOCIETY  
THE IEEE SIGNAL PROCESSING SOCIETY



TECHNICALLY COSPONSORED BY THE IEEE COMPUTER SOCIETY



JUNE 2022

VOLUME 26

NUMBER 6

IJBHA9

(ISSN 2168-2194)

Frontcover

Publication Year: 2022,Page(s):C1 - C1  
HTML

IEEE Journal of Biomedical and Health Informatics

Publication Year: 2022,Page(s):C2 - C2  
HTML

Table of Contents

Publication Year: 2022,Page(s):2400 - 2402  
HTML

Editorial Augmented Reality for Bioinformatics

Zhihan Lv;Jaime Lloret;Houbing Song  
Publication Year: 2022,Page(s):2403 - 2404  
HTML

BDBB: A Novel Beta-Distribution-Based Biclustering Algorithm for  
Revealing Local Co-Methylation Patterns in Epi-Transcriptome  
Profiling Data

Zhaoyang Liu;Yuteng Xiao;Hongsheng Yin;Xiaodan Li;Shutao  
Chen;Kaijian Xia;Lin Zhang  
Publication Year: 2022,Page(s):2405 - 2416  
HTML

Secure Collaborative Augmented Reality Framework for Biomedical  
Informatics

Youcef Djenouri;Asma Belhadi;Gautam Srivastava;Jerry Chun-Wei  
Lin  
Publication Year: 2022,Page(s):2417 - 2424  
HTML

Metabolic and Transcriptional Analysis of  
Recombinant *Saccharomyces Cerevisiae* for Xylose Fermentation:  
A Feasible and Efficient Approach

Xin-Chi Shi;Yan Zhang;Ting Wang;Xiang-Chen Wang;Hai-Bin  
Lv;Pedro Laborda;Ting-Ting Duan  
Publication Year: 2022,Page(s):2425 - 2434  
HTML

PerAE: An Effective Personalized AutoEncoder for ECG-Based  
Biometric in Augmented Reality System

Le Sun;Zhaoyi Zhong;Zhiguo Qu;N. Xiong  
Publication Year: 2022,Page(s):2435 - 2446  
HTML

Particle-Based Calculation and Visualization of Protein Cavities  
Using SES Models

Li Feng;Feng Wang;Jian Zhang;Yong Tang;Jing Zhao;Lisha  
Zhou;Jiayan Wang;Dongliang Guo;Amit Kumar Singh  
Publication Year: 2022,Page(s):2447 - 2457  
HTML

Understanding Dynamics of Pandemic Models to Support  
Predictions of COVID-19 Transmission: Parameter Sensitivity  
Analysis of SIR-Type Models

Chunfeng Ma;Xin Li;Zebin Zhao;Feng Liu;Kun Zhang;Adan  
Wu;Xiaowei Nie  
Publication Year: 2022,Page(s):2458 - 2468  
HTML

Multimodal Biosensing for Vestibular Network-Based Cybersickness Detection  
Gang Li;Mark McGill;Stephen Brewster;Chao Ping Chen;Joaquin A. Anguera;Adam Gazzaley;Frank Pollick  
Publication Year: 2022,Page(s):2469 - 2480  
HTML

Respiratory Rate Estimation Using U-Net-Based Cascaded Framework From Electrocardiogram and Seismocardiogram Signals  
Michael Chan;Venu G. Ganti;Omer T. Inan  
Publication Year: 2022,Page(s):2481 - 2492  
HTML

Single-Channel Selection for EEG-Based Emotion Recognition Using Brain Rhythm Sequencing  
Jia Wen Li;Shovan Barma;Peng Un Mak;Fei Chen;Cheng Li;Ming Tao Li;Mang I Vai;Sio Hang Pun  
Publication Year: 2022,Page(s):2493 - 2503  
HTML

Feature Extraction Method Based on Filter Banks and Riemannian Tangent Space in Motor-Imagery BCI  
Hua Fang;Jing Jin;Ian Daly;Xingyu Wang  
Publication Year: 2022,Page(s):2504 - 2514  
HTML

Development of a Wearable Gesture Recognition System Based on Two-Terminal Electrical Impedance Tomography  
Xupeng Lu;Shijie Sun;Kangqi Liu;Jiangtao Sun;Lijun Xu  
Publication Year: 2022,Page(s):2515 - 2523  
HTML

The CirCor DigiScope Dataset: From Murmur Detection to Murmur Classification  
Jorge Oliveira;Francesco Renna;Paulo Dias Costa;Marcelo Nogueira;Cristina Oliveira;Carlos Ferreira;Alipio Jorge;Sandra Mattos;Thamine Hatem;Thiago Tavares;Andoni Elola;Ali Bahrami Rad;Reza Sameni;Gari D. Clifford;Miguel T. Coimbra  
Publication Year: 2022,Page(s):2524 - 2535  
HTML

Inferring the Individual Psychopathologic Deficits With Structural Connectivity in a Longitudinal Cohort of Schizophrenia  
Yi Sun;Zhe Zhang;Ioannis Kakkos;George K. Matsopoulos;Jingjia Yuan;John Suckling;Luoyi Xu;Shuxia Cao;Wenjuan Chen;Xingyue Hu;Tao Li;Kang Sim;Peng Qi;Yu Sun  
Publication Year: 2022,Page(s):2536 - 2546  
HTML

MSANet: Multiscale Aggregation Network Integrating Spatial and Channel Information for Lung Nodule Detection  
Zhitao Guo;Linlin Zhao;Jinli Yuan;Hengyong Yu  
Publication Year: 2022,Page(s):2547 - 2558  
HTML

Transformer Model for Functional Near-Infrared Spectroscopy Classification  
Zenghui Wang;Jun Zhang;Xiaochu Zhang;Peng Chen;Bing Wang  
Publication Year: 2022,Page(s):2559 - 2569  
HTML

Automatic Lung Nodule Segmentation and Intra-Nodular Heterogeneity Image Generation  
Jiangdian Song;Shih-Cheng Huang;Brendan Kelly;Guanqun Liao;Jingyun Shi;Ning Wu;Weimin Li;Zaiyi Liu;Lei Cui;Matthew P. Lungre;Michael E. Moseley;Peng Gao;Jie Tian;Kristen W. Yeom  
Publication Year: 2022,Page(s):2570 - 2581  
HTML

Cascaded Triplanar Autoencoder M-Net for Fully Automatic Segmentation of Left Ventricle Myocardial Scar From Three-Dimensional Late Gadolinium-Enhanced MR Images  
Mingquan Lin;Mingjie Jiang;Mingbo Zhao;Eranga Ukwatta;James A. White;Bernard Chiu  
Publication Year: 2022,Page(s):2582 - 2593  
HTML

A Comparison of Alternative Approaches to MR Cardiac Triggering: A Pilot Study at 3 Tesla  
J. Brablik;Martina Ladrova;Dominik Vilimek;Jakub Kolarik;Radana Kahankova;Pavla Hanzlikova;Jan Nedoma;Khosrow Behbehani;Marcel Fajkus;Lubomir Vojtisek;Radek Martinek  
Publication Year: 2022,Page(s):2594 - 2605  
Cited by: Papers (1)  
HTML

Deep Neural Network With Structural Similarity Difference and Orientation-Based Loss for Position Error Classification in the Radiotherapy of Graves' Ophthalmopathy Patients  
Wenjie Liu;Lei Zhang;Guyu Dai;Xiangbin Zhang;Guangjun Li;Zhang Yi  
Publication Year: 2022,Page(s):2606 - 2614  
HTML

Uncertainty-Aware Deep Learning With Cross-Task Supervision for PHE Segmentation on CT Images  
Zhuo Kuang;Zengqiang Yan;Li Yu;Xianbo Deng;Yineng Hua;Shuyun Li  
Publication Year: 2022,Page(s):2615 - 2626  
HTML

RADlomic Spatial TexturAI Descriptor (RADISTAT): Quantifying Spatial Organization of Imaging Heterogeneity Associated With Tumor Response to Treatment  
Jacob T. Antunes;Marwa Ismail;Imran Hossain;Zhoumengdi Wang;Prateek Prasanna;Anant Madabhushi;Pallavi Tiwari;Satish E. Viswanath  
Publication Year: 2022,Page(s):2627 - 2636  
HTML

Unsupervised Cross-Modality Domain Adaptation Network for X-Ray to CT Registration  
Shiqiang Zheng;Xin Yang;Yifan Wang;Mingyue Ding;Wenguang Hou  
Publication Year: 2022,Page(s):2637 - 2647  
HTML

Online Hard Patch Mining Using Shape Models and Bandit Algorithm for Multi-Organ Segmentation  
Jianan He;Guangquan Zhou;Shoujun Zhou;Yang Chen  
Publication Year: 2022,Page(s):2648 - 2659  
HTML

CT-Guided Survival Prediction of Esophageal Cancer  
Zhenyu Lin;Wenjie Cai;Wentai Hou;Yayuan Chen;Bingzong Gao;Runzhi Mao;Liansheng Wang;Zirong Li  
Publication Year: 2022,Page(s):2660 - 2669  
HTML

On the Automation of Radiomics-Based Identification and Characterization of NSCLC  
Eleonora D'Arnese;Guido Walter Di Donato;Emanuele Del Sozzo;Martina Sollini;Donatella Sciuto;Marco Domenico Santambrogio  
Publication Year: 2022,Page(s):2670 - 2679  
HTML

Multiple Sclerosis Lesion Analysis in Brain Magnetic Resonance Images: Techniques and Clinical Applications  
Yang Ma;Chaoyi Zhang;Mariano Cabezas;Yang Song;Zihao Tang;Dongnan Liu;Weidong Cai;Michael Barnett;Chenyu Wang  
Publication Year: 2022,Page(s):2680 - 2692  
HTML

AL-Net: Attention Learning Network Based on Multi-Task Learning for Cervical Nucleus Segmentation  
Jing Zhao;Yong-Jun He;Si-Qi Zhao;Jin-Jie Huang;Wang-Meng Zuo  
Publication Year: 2022,Page(s):2693 - 2702  
HTML

Private Facial Prediagnosis as an Edge Service for Parkinson's DBS Treatment Valuation  
Richard Jiang;Paul Chazot;Nicola Pavese;Danny Crookes;Ahmed Bouridane;M. Emre Celebi  
Publication Year: 2022,Page(s):2703 - 2713  
HTML

Multi-Level Functional Connectivity Fusion Classification Framework for Brain Disease Diagnosis  
Yin Liang;Gaoxu Xu  
Publication Year: 2022,Page(s):2714 - 2725  
HTML

Predicting the Macronutrient Composition of Mixed Meals From Dietary Biomarkers in Blood  
Anurag Das;Bobak Mortazavi;Seyedhooman Sajjadi;Theodora Chaspari;Laura E. Ruebush;Nicolaas E. Deutz;Gerard L. Cote;Ricardo Gutierrez-Osuna  
Publication Year: 2022,Page(s):2726 - 2736  
HTML

Medical Data Wrangling With Sequential Variational Autoencoders  
Daniel Barrejón;Pablo M. Olmos;Antonio Artés-Rodríguez  
Publication Year: 2022,Page(s):2737 - 2745  
HTML

TripletCough: Cougher Identification and Verification From Contact-Free Smartphone-Based Audio Recordings Using Metric Learning  
Stefan Jokić;David Cleres;Frank Rassouli;Claudia Steurer-Stey;Milo A. Puhan;Martin Brutsche;Elgar Fleisch;Filipe Barata  
Publication Year: 2022,Page(s):2746 - 2757  
HTML

Blood Glucose Level Prediction: Advanced Deep-Ensemble Learning Approach  
Hoda Nemat;Heydar Khadem;Mohammad R. Eissa;Jackie Elliott;Mohammed Benaissa  
Publication Year: 2022,Page(s):2758 - 2769  
HTML

Understanding Patient Query With Weak Supervision From Doctor Response  
Xiaoming Shi;Sendong Zhao;Yuxuan Wang;Xi Chen;Ziheng Zhang;Yefeng Zheng;Wanxiang Che  
Publication Year: 2022,Page(s):2770 - 2777  
HTML

Personalized On-Device E-Health Analytics With Decentralized Block Coordinate Descent  
Guanhua Ye;Hongzhi Yin;Tong Chen;Miao Xu;Quoc Viet Hung Nguyen;Jiangning Song  
Publication Year: 2022,Page(s):2778 - 2786  
HTML

Voice Biomarkers of Recovery From Acute Respiratory Illness  
Brian Tracey;Shyamal Patel;Yao Zhang;Kara Chappie;Dmitri Volfson;Federico Parisi;Catherine Adans-Dester;Francesco Bertacchi;Paolo Bonato;Paul Wacnik  
Publication Year: 2022,Page(s):2787 - 2795  
HTML

A Keyword-Enhanced Approach to Handle Class Imbalance in Clinical Text Classification  
Andrew E. Blanchard;Shang Gao;Hong-Jun Yoon;J. Blair Christian;Eric B. Durbin;Xiao-Cheng Wu;Antoinette Stroup;Jennifer Doherty;Stephen M. Schwartz;Charles Wiggins;Linda Coyle;Lynne Penberthy;Georgia D. Tourassi  
Publication Year: 2022,Page(s):2796 - 2803  
HTML

Ensembled Transfer Learning and Multiple Kernel Learning for Phonocardiogram Based Atherosclerotic Coronary Artery Disease Detection  
Akanksha Pathak;Kayapanda Mandana;Goutam Saha  
Publication Year: 2022,Page(s):2804 - 2813  
HTML

Identification of Hypoxia-Ischemia by Chemometrics Considering Systemic Changes of Physiology  
Hector Lafuente;Ion Olaetxea;Ana Valero;Francisco José Álvarez;Ander Izeta;Ibon Jaunarena;Andreas Seifert  
Publication Year: 2022,Page(s):2814 - 2821  
HTML

DeepRCI: Predicting ATP-Binding Proteins Using the Residue-Residue Contact Information  
Zhaoxi Zhang;Yulan Zhao;Juan Wang;Maozu Guo  
Publication Year: 2022,Page(s):2822 - 2829  
HTML

An Algorithm to Mine Therapeutic Motifs for Cancer From Networks of Genetic Interactions  
Herty Liany;Yu Lin;Anand Jeyasekharan;Vaibhav Rajan  
Publication Year: 2022,Page(s):2830 - 2838  
HTML

Graph Triple-Attention Network for Disease-Related lncRNA Prediction  
Ping Xuan;Liyun Zhan;Hui Cui;Tianguang Zhang;Toshiya Nakaguchi;Weixiong Zhang  
Publication Year: 2022,Page(s):2839 - 2849  
Cited by: Papers (1)  
HTML

IEEE Journal of Biomedical and Health Informatics (J-BHI)  
Publication Year: 2022,Page(s):C3 - C3  
HTML

# IEEE

# NETWORKING LETTERS

A PUBLICATION OF  
THE IEEE COMMUNICATIONS SOCIETY  
THE IEEE VEHICULAR TECHNOLOGY SOCIETY



JUNE 2022

VOLUME 4

NUMBER 2

INLEBB

(ISSN 2576-3156)

## Table of Contents

Publication Year: 2022,Page(s):C1 - C1  
[HTML](#)

## IEEE COMMUNICATIONS SOCIETY

Publication Year: 2022,Page(s):C2 - C2  
[HTML](#)

### Sum Rate Maximization for RIS-Aided NOMA With Direct Links

Xingwang Li;Zhen Xie;Gaojian Huang;Jianhua Zhang;Ming Zeng;Zheng Chu  
Publication Year: 2022,Page(s):55 - 58  
[HTML](#)

### An Intelligent Traffic Entropy Learning-Based Load Management Model for Cloud Networks

Deepika Saxena;Ashutosh Kumar Singh  
Publication Year: 2022,Page(s):59 - 63  
[HTML](#)

### Energy Efficient Distributed Spectrum Sensing in Presence of Malicious Users

Aqsa Ashraf Makhdomi;Gh. Rasool Begh  
Publication Year: 2022,Page(s):64 - 67  
[HTML](#)

### A Generalized Framework for Joint Dynamic Optimal RF Interface Setting and Next-Hop Selection in IoT Networks With Similar Requests

Monireh Allah Ghohi Ghasri;Ali Mohammad Afshin Hemmatyar  
Publication Year: 2022,Page(s):68 - 72  
[HTML](#)

### Estimating Buffer Occupancy *sans* Message Exchange in Mobile Opportunistic Networks

Gourish Goudar;Suvadip Batabyal  
Publication Year: 2022,Page(s):73 - 77  
[HTML](#)

### RF Fingerprinting-Based IoT Node Authentication Using Mahalanobis Distance Correlation Theory

Dinh Duc Nha Nguyen;Keshav Sood;Mohammad Reza Nosouhi;Yong Xiang;Longxiang Gao;Lianhua Chi  
Publication Year: 2022,Page(s):78 - 81  
[HTML](#)

### SFC Provisioning With Load Balancing Method in Multi-Tier Fog Networks

M. A. Jasim;N. Siasi;M. Rahouti;N. Ghani  
Publication Year: 2022,Page(s):82 - 86  
[HTML](#)

### On the Average Age-of-Information for Hybrid Multiple Access Protocols

B. S. Vineeth;Reuben Chacko Thomas  
Publication Year: 2022,Page(s):87 - 91  
[HTML](#)

### Scheduling of Sensor Transmissions Based on Value of Information for Summary Statistics

Federico Chiariotti;Anders E. Kalør;Josefine Holm;Beatriz Soret;Petar Popovski  
Publication Year: 2022,Page(s):92 - 96  
[HTML](#)

## IEEE Networking Letters Author Guidelines

Publication Year: 2022,Page(s):97 - 98  
[HTML](#)

Publication Year: 2022,Page(s):C3 - C3

[HTML](#)

2022

Parallel Processing at the Edge in Dense Wireless Networks  
Ming Zeng;Viktoria Fodor  
Publication Year: 2022,Page(s):1 - 14  
HTML

Optimal Container Migration/Re-Instantiation in Hybrid Computing Environments  
Sam Aleyadeh;Abdallah Moubayed;Parisa Heidari;Abdallah Shami  
Publication Year: 2022,Page(s):15 - 30  
HTML

Full-Duplex Cell-Free Massive MIMO Systems: Analysis and Decentralized Optimization  
Soumyadeep Datta;Dheeraj Naidu Amudala;Ekant Sharma;Rohit Budhiraja;Shivendra S. Panwar  
Publication Year: 2022,Page(s):31 - 50  
Cited by: Papers (1)  
HTML

MIMO Per-Tone Equalizer Design for Long Reach xDSL  
Mohit Sharma;Jeroen Verdyck;Yannick Lefevre;Paschalis Tsiaflakis;Marc Moonen  
Publication Year: 2022,Page(s):51 - 64  
HTML

Matrix-Inverse-Free Deep Unfolding of the Weighted MMSE Beamforming Algorithm  
Lissy Pellaco;Mats Bengtsson;Joakim Jaldén  
Publication Year: 2022,Page(s):65 - 81  
HTML

Towards 6G-Enabled Internet of Vehicles: Security and Privacy  
Diana Pamela Moya Osorio;Ijaz Ahmad;José David Vega Sánchez;Andrei Gurtov;Johan Scholliers;Matti Kuttila;Pawani Porambage  
Publication Year: 2022,Page(s):82 - 105  
HTML

Low-Complexity Codebook Design for SCMA-Based Visible Light Communication  
Saumya Chaturvedi;Dil Nashin Anwar;Vivek Ashok Bohara;Anand Srivastava;Zilong Liu  
Publication Year: 2022,Page(s):106 - 118  
Cited by: Papers (1)  
HTML

High-Performance Packet Routing Acceleration for Cloud Systems Using High Bandwidth Memory  
Takashi Shimizu;Kazuki Hyoudou;Hiroshi Murakawa;Tomohiro Ishihara  
Publication Year: 2022,Page(s):119 - 126  
HTML

Practical Hybrid Beamforming for Millimeter Wave Massive MIMO Full Duplex With Limited Dynamic Range  
Chandan Kumar Sheemar;Christo Kurisummoottil Thomas;Dirk Slock  
Publication Year: 2022,Page(s):127 - 143  
HTML

Intelligent Radio Resource Allocation for Human-Robot Collaboration  
Ye Feng;Lihua Ruan;Ampalavanapillai Nirmalathas;Elaine Wong  
Publication Year: 2022,Page(s):144 - 158  
HTML

Traffic Prediction-Enabled Energy-Efficient Dynamic Computing Resource Allocation in CRAN Based on Deep Learning  
Yongqin Fu;Xianbin Wang  
Publication Year: 2022,Page(s):159 - 175  
HTML

When Machine Learning Meets Spectrum Sharing Security: Methodologies and Challenges  
Qun Wang;Haijian Sun;Rose Qingyang Hu;Arupjyoti Bhuyan  
Publication Year: 2022,Page(s):176 - 208  
Cited by: Papers (1)  
HTML

Low-Complexity ZF/MMSE MIMO-OTFS Receivers for High-Speed Vehicular Communication  
Prem Singh;Abhishek Gupta;Himanshu B. Mishra;Rohit Budhiraja  
Publication Year: 2022,Page(s):209 - 227  
HTML

Deep Learning for B5G Open Radio Access Network: Evolution, Survey, Case Studies, and Challenges  
Bouziane Brik;Karim Boutiba;Adlen Ksentini  
Publication Year: 2022,Page(s):228 - 250  
Cited by: Papers (1)  
HTML

Security and Privacy Threats for Bluetooth Low Energy in IoT and Wearable Devices: A Comprehensive Survey  
Arup Barua;Md Abdullah Al Alamin;Md. Shohrab Hossain;Ekram Hossain  
Publication Year: 2022,Page(s):251 - 281  
HTML

Phase Noise Resilient Three-Level Continuous-Phase Modulation for DFT-Spread OFDM  
Markku Renfors;Ismael Peruga Nasarre;Toni Levanen;Kari Pajukoski;Mikko Valkama  
Publication Year: 2022,Page(s):282 - 300  
HTML

Toward a Live BBU Container Migration in Wireless Networks  
Eryk Schiller;Jesutofunmi Ajayi;Silas Weber;Torsten Braun;Burkhard Stiller  
Publication Year: 2022,Page(s):301 - 321  
HTML

The Frontiers of Deep Reinforcement Learning for Resource Management in Future Wireless HetNets: Techniques, Challenges, and Research Directions  
Abdulmalik Alwarafy;Mohamed Abdallah;Bekir Sait Çiftler;Ala Al-Fuqaha;Mounir Hamdi  
Publication Year: 2022,Page(s):322 - 365  
Cited by: Papers (1)  
HTML



Bandit-Based Power Control in Full-Duplex Cooperative Relay Networks With Strict-Sense Stationary and Non-Stationary Wireless Communication Channels  
Nikolaos Nomikos;Mohammad Sadegh Talebi;Themistoklis Charalambous;Risto Wichman  
Publication Year: 2022,Page(s):366 - 378  
HTML

Dynamic Bayesian Network Based Security Analysis for Physical Layer Key Extraction  
Xueqing Huang;Nirwan Ansari;Siqi Huang;Wenjia Li  
Publication Year: 2022,Page(s):379 - 390  
HTML

Molecule Harvesting Transmitter Model for Molecular Communication Systems  
Arman Ahmadzadeh;Vahid Jamali;Robert Schober  
Publication Year: 2022,Page(s):391 - 410  
HTML

Multiobjective Optimization for Intelligent Reflective Surface-Aided Physical-Layer Multicasting  
Yinman Lee  
Publication Year: 2022,Page(s):411 - 423  
HTML

Analog Radio Over Fiber-Aided Multi-Service Communications for High-Speed Trains  
Yichuan Li;Salman Ghafoor;Mohammed El-Hajjar  
Publication Year: 2022,Page(s):424 - 434  
HTML

Incentive Mechanism and Resource Allocation for Edge-Fog Networks Driven by Multi-Dimensional Contract and Game Theories  
Maria Diamanti;Panagiotis Charatsaris;Eirini Eleni Tsiropoulou;Symeon Papavassiliou  
Publication Year: 2022,Page(s):435 - 452  
HTML

A New Bound to Error Probability on AWGN Channels: From Folded Coding to Gaussian Random Coding  
Dengsheng Lin;Yue Xiao  
Publication Year: 2022,Page(s):453 - 461  
HTML

Design and Evaluation of Reconfigurable Intelligent Surfaces in Real-World Environment  
Georgios C. Trichopoulos;Panagiotis Theofanopoulos;Bharath Kashyap;Aditya Shekhawat;Anuj Modi;Tawfik Osman;Sanjay Kumar;Anand Sengar;Arkajyoti Chang;Ahmed Alkhateeb  
Publication Year: 2022,Page(s):462 - 474  
Cited by: Papers (1)  
HTML

Artificial Intelligence and Dimensionality Reduction: Tools for Approaching Future Communications  
Alejandro Ramírez-Arroyo;Luz García;Antonio Alex-Amor;Juan F. Valenzuela-Valdés  
Publication Year: 2022,Page(s):475 - 492  
HTML

Millimeter Wave Wireless Assisted Robot Navigation With Link State Classification  
Mingsheng Yin;Akshaj Kumar Veldanda;Amees Trivedi;Jeff Zhang;Kai Pfeiffer;Yaqi Hu;Siddharth Garg;Elza Erkip;Ludovic Righetti;Sundeep Rangan  
Publication Year: 2022,Page(s):493 - 507  
HTML

Bayesian Poisson Factorization With Side Information for User Interest Prediction in Hierarchical Edge-Caching Systems  
Sajad Mehrizi;Symeon Chatzinotas  
Publication Year: 2022,Page(s):508 - 517  
HTML

Workflow Makespan Minimization for Partially Connected Edge Network: A Deep Reinforcement Learning-Based Approach  
Kaige Zhu;Zhenjiang Zhang;Feng Sun;Bo Shen  
Publication Year: 2022,Page(s):518 - 529  
HTML

Reduced-Complexity FFT-Spread Multicarrier Faster-Than-Nyquist Signaling in Frequency-Selective Fading Channel  
Takumi Ishihara;Shinya Sugiura  
Publication Year: 2022,Page(s):530 - 542  
HTML

Nonorthogonal Multiple Access and Subgrouping for Improved Resource Allocation in Multicast 5G NR  
Eneko Iradier;Mauro Fadda;Maurizio Murrone;Pasquale Scopelliti;Giuseppe Araniti;Jon Montalbán  
Publication Year: 2022,Page(s):543 - 556  
HTML

Control of Electromagnetic Radiation on Coexisting Smart Radio Environment  
Mehmet Mert Şahin;Hüseyin Arslan;Kwang-Cheng Chen  
Publication Year: 2022,Page(s):557 - 573  
HTML

Energy-Optimal End-to-End Network Slicing in Cloud-Based Architecture  
Meysam Masoudi;Özlem Tuğçe Demir;Jens Zander;Cicek Cavdar  
Publication Year: 2022,Page(s):574 - 592  
HTML

Performance Evaluation and Diversity Analysis of RIS-Assisted Communications Over Generalized Fading Channels in the Presence of Phase Noise  
Imène Trigui;Wessam Ajib;Wei-Ping Zhu;Marco Di Renzo  
Publication Year: 2022,Page(s):593 - 607  
HTML

Ambient Backscatter Assisted Co-Existence in Aerial-IRS Wireless Networks  
Sourabh Solanki;Sumit Gautam;Shree Krishna Sharma;Symeon Chatzinotas  
Publication Year: 2022,Page(s):608 - 621  
HTML

RAN Slicing Performance Tradeoffs: Timing Versus Throughput Requirements  
Federico Chiariotti;Israel Leyva-Mayorga;Čedomir Stefanović;Anders E. Kalør;Petar Popovski  
Publication Year: 2022,Page(s):622 - 640  
HTML

Achieving Efficient and Secure Handover in LEO Constellation-Assisted Beyond 5G Networks  
Qinglei Kong;Rongxing Lu;Feng Yin  
Publication Year: 2022,Page(s):641 - 653  
HTML

Revolutionizing Optical Wireless Communications via Smart Optics  
Amr M. Abdelhady;Osama Amin;Mohamed-Slim Alouini;Basem Shihada  
Publication Year: 2022,Page(s):654 - 669  
HTML



Mapping the VNFs and VLs of a RAN Slice Onto Intelligent PoPs in Beyond 5G Mobile Networks  
Mohammad Asif Habibi;Faqr Zarrar Yousaf;Hans D. Schotten  
Publication Year: 2022,Page(s):670 - 704  
HTML

Performance Analysis of Uplink NOMA With Constellation–Rotated STLC for IoT Networks  
Ki-Hun Lee;Jeong Seon Yeom;Jingon Joung;Bang Chul Jung  
Publication Year: 2022,Page(s):705 - 717  
HTML

A Novel Approach for Cancellation of Nonaligned Inter Spreading Factor Interference in LoRa Systems  
Qiaohan Zhang;Ivo Bizon;Atul Kumar;Ana Belen Martinez;Marwa Chaffii;Gerhard Fettweis  
Publication Year: 2022,Page(s):718 - 728  
HTML

Deep Reinforcement Learning Powered IRS-Assisted Downlink NOMA  
Muhammad Shehab;Bekir S. Ciftler;Tamer Khattab;Mohamed M. Abdallah;Daniele Trinchero  
Publication Year: 2022,Page(s):729 - 739  
Cited by: Papers (1)  
HTML

User-Heterogeneous Cell-Free Massive MIMO Downlink and Uplink Beamforming via Tensor Decomposition  
Kengo Ando;Hiroki Iimori;Giuseppe Thadeu Freitas de Abreu;Koji Ishibashi  
Publication Year: 2022,Page(s):740 - 758  
HTML

Demand and Interference Aware Adaptive Resource Management for High Throughput GEO Satellite Systems  
Tadros Salih Abdu;Steven Kisseleff;Eva Lagunas;Symeon Chatzinotas;Björn Ottersten  
Publication Year: 2022,Page(s):759 - 775  
HTML

Blockage Prediction Using Wireless Signatures: Deep Learning Enables Real-World Demonstration  
Shunyao Wu;Muhammad Alrabeiah;Chaitali Chakrabarti;Ahmed Alkhateeb  
Publication Year: 2022,Page(s):776 - 796  
HTML

MAGIKS: Fair Multi-Resource Allocation Game Induced by Kalai-Smorodinsky Bargaining Solution  
Erfan Meskar;Ben Liang  
Publication Year: 2022,Page(s):797 - 810  
HTML

Security and Privacy Issues in Autonomous Vehicles: A Layer-Based Survey  
Muhammad Hataba;Ahmed Sherif;Mohamed Mahmoud;Mohamed Abdallah;Waleed Alasmary  
Publication Year: 2022,Page(s):811 - 829  
HTML

Joint Link Rate Selection and Adaptive Forward Error Correction for High-Rate Wireless Multicast  
Thomas Geithner;Fikret Sivrikaya;Sahin Albayrak  
Publication Year: 2022,Page(s):830 - 846  
HTML

Spatial Characterization of Electromagnetic Random Channels  
Andrea Pizzo;Luca Sanguinetti;Thomas L. Marzetta  
Publication Year: 2022,Page(s):847 - 866  
HTML

User Selection for Massive MIMO under Line-of-Sight Propagation  
Rafael S. Chaves;Markus V. S. Lima;Ediz Cetin;Wallace A. Martins  
Publication Year: 2022,Page(s):867 - 887  
HTML

An Adapted Nondominated Sorting Genetic Algorithm III (NSGA-III) With Repair-Based Operator for Solving Controller Placement Problem in Software-Defined Wide Area Networks  
Oladipupo Adekoya;Adel Aneiba  
Publication Year: 2022,Page(s):888 - 901  
HTML

Robust Resource Allocation for Indoor Self-Blockage Millimeter Wave Device-to-Device Communications  
Haie Dou;Xiaoting Yu;Bin Kang;Mingkai Chen;Lei Wang;Baoyu Zheng  
Publication Year: 2022,Page(s):902 - 911  
HTML

Adapting Deep Learning for Content Caching Frameworks in Device-to-Device Environments  
Rahul Bajpai;Souradeep Chakraborty;Naveen Gupta  
Publication Year: 2022,Page(s):912 - 920  
HTML

Rate Splitting in the Presence of Untrusted Users: Outage and Secrecy Outage Performances  
Milad Abolpour;Sonia Aïssa;Leila Musavian;Anirban Bhowal  
Publication Year: 2022,Page(s):921 - 935  
HTML

NOMA Enhanced UAV-Assisted Communication System With Nonlinear Energy Harvesting  
Sandeep Kumar Singh;Kamal Agrawal;Keshav Singh;Chih-Peng Li;Mohamed-Slim Alouini  
Publication Year: 2022,Page(s):936 - 957  
HTML

SICNet—Low Complexity Sample Adaptive Neural Network-Based Self-Interference Cancellation in LTE-A/5G Mobile Transceivers  
Oliver Ploder;Christina Auer;Christian Motz;Thomas Paireder;Oliver Lang;Mario Huemer  
Publication Year: 2022,Page(s):958 - 972  
HTML

Optimizing Packet Forwarding Performance in Multiband Relay Networks via Customized Reinforcement Learning  
Bushra Mughal;Zubair Md. Fadlullah;Mostafa M. Fouda;Salama Ikki  
Publication Year: 2022,Page(s):973 - 985  
HTML

Energy Efficient Dual-Functional Radar-Communication: Rate-Splitting Multiple Access, Low-Resolution DACs, and RF Chain Selection  
Onur Dizdar;Aryan Kaushik;Bruno Clerckx;Christos Masouros  
Publication Year: 2022,Page(s):986 - 1006  
HTML

Aerial Intelligent Reflecting Surfaces in MIMO-NOMA Networks: Fundamentals, Potential Achievements, and Challenges  
Brena Kelly S. Lima;Arthur Sousa De Sena;Rui Dinis;Daniel Benevides Da Costa;Marko Beko;Rodolfo Oliveira;Mérrouane Debbah  
Publication Year: 2022,Page(s):1007 - 1024  
HTML