

IEEE Communications Society  
**Publications Contents Digest**  
**November/2021**





Direct links to magazine and journals and full paper pdfs via IEEE Xplore

ComSoc Vice President – Publications – Robert Schober

Director – Journals – Michele Zorzi

Director – Magazines – Ekram Hossain

### Magazine Editors

EIC, **IEEE Communications Magazine** – Tarek El-Bawab  
 AEIC, **IEEE Communications Magazine** – Antonio Sanchez-Esquavillas  
 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** – Maurice Khabbaz  
 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)** – Raouf Boutaba  
 EIC, **IEEE Communications Letters** – Marco Di Renzo  
 EIC, **IEEE Communications Surveys & Tutorials** – Dusit Niyato  
 EIC, **IEEE Transactions on Network & Service Management (TNSM)** – Filip De Turck  
 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)** – Jane M. Simmons  
 EIC, **IEEE/OSA Journal of Lightwave Technology** – Gabriella Bosco  
 Co-EICs, **IEEE/KICS Journal of Communications & Networks (JCN)** – Anthony Ephremides | Inkyu Lee  
 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** – Antonio Ortega  
 EIC, **IEEE Internet of Things Journal** – Honggang Wang  
 EIC, **IEEE Transactions on Green Communications** – 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** – George N. Rouskas  
 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

October 2021, vol. 59, no. 10

## Front cover

Publication Year: 2021,Page(s):C1 - C1

## Cover 2

Publication Year: 2021,Page(s):C2 - C2

## Table of Contents

Publication Year: 2021,Page(s):1 - 2

## Call for Papers

Publication Year: 2021,Page(s):3 - 3

## The President's Page

### Internet of Things and Smart Cities

Vincent W. S. Chan

Publication Year: 2021,Page(s):4 - 6

[HTML](#)

## Call for Papers

Publication Year: 2021,Page(s):7 - 7

## Conference Calendar

Updated on the Communications Society's Web Site

Publication Year: 2021,Page(s):8 - 8

## Global Communications Newsletter

Christopher Udeagha;Devon Gayle;Dave Muir;Janeel Anderson;Treshell Constable;Damain Patterson;Weixiao Meng;Keattisak Sripimanwat

Publication Year: 2021,Page(s):9 - 11

## Network Softwarization and Management

### Series Editorial: Network Softwarization and Management

Oscar Caicedo;Walter Cerroni;Noura Limam

Publication Year: 2021,Page(s):12 - 13

[HTML](#)

## ONIX: Open Radio Network Information eXchange

Estefanía Coronado;Francesco Raviglione;Marco Malinverno;Claudio Casetti;Ana Cantarero;Gabriel Cebrián-Márquez;Roberto Riggio

Publication Year: 2021,Page(s):14 - 20

[HTML](#)

## Intelligence and Learning in O-RAN for Data-Driven NextG Cellular Networks

Leonardo Bonati;Salvatore D'Oro;Michele Polese;Stefano Basagni;Tommaso Melodia

Publication Year: 2021,Page(s):21 - 27

[HTML](#)

## Edge Cloud Selection: The Essential Step for Network Service Marketplaces

Ioannis Dimolitsas;Dimitrios Dechouniotis;Symeon Papavassiliou;Panagiotis Papadimitriou;Vasileios Theodorou

Publication Year: 2021,Page(s):28 - 33

[HTML](#)

## An Efficient Algorithm for Fast Service Edge Selection in Cloud-Based Telco Networks

Javier Baliosian;Luis M. Contreras;Pedro Martínez-Julia;Joan Serrat

Publication Year: 2021,Page(s):34 - 40

[HTML](#)

## Comsoc Membership

Publication Year: 2021,Page(s):41 - 41

## Multi-Cloud Connectivity for Kubernetes in 5G Networks

Lirim Osmani;Tero Kauppinen;Miika Komu;Sasu Tarkoma

Publication Year: 2021,Page(s):42 - 47

[HTML](#)

## Policy-Based Blockchain Selection

Eder John Scheid;Bruno Rodrigues;Burkhard Stiller

Publication Year: 2021,Page(s):48 - 54

[HTML](#)

## IEEE APP

Publication Year: 2021,Page(s):55 - 55

## Optical Communications and Systems

### Series Editorial: Optical Communications and Networks

Mohamed-Slim Alouini;Zuqing Zhu

Publication Year: 2021,Page(s):56 - 56

[HTML](#)

## Intelligent Reflecting Surface Assisted Free-Space Optical Communications

Vahid Jamali;Hedieh Ajam;Marzieh Najafi;Bernhard

Schmauss;Robert Schober;H. Vincent Poor

Publication Year: 2021,Page(s):57 - 63

[HTML](#)

## Multipath Routing in Elastic Optical Networks with Space-Division Multiplexing

Pedro M. Moura;Nelson L. S. da Fonseca

Publication Year: 2021,Page(s):64 - 69

[HTML](#)

## Non-Orthogonal Discrete Multi-Tone: Toward Higher Spectral Efficiency for Optical Networks

Ji Zhou;Qi Sui;Zhaohui Li

Publication Year: 2021,Page(s):70 - 75

[HTML](#)

## Accepted from Open Call

### Securing Critical Infrastructures: Deep-Learning-Based Threat Detection in IIoT

Keqing Yu;Liang Tan;Shahid Mumtaz;Saba Al-Rubaye;Anwer Al-Dulaimi;Ali Kashif Bashir;Farrukh Aslam Khan

Publication Year: 2021,Page(s):76 - 82

[HTML](#)

## Comsoc Publications

Publication Year: 2021,Page(s):83 - 83

[Achieving High Throughput and Low Latency with 5G: A Real Implementation Experience](#)

Andres J. Gonzalez;Min Xie;Per Hjalmar Lehne;Pål Grønsund

Publication Year: 2021,Page(s):84 - 90

[HTML](#)

Comsoc Open Access

Publication Year: 2021,Page(s):91 - 91

[Robotic Communications for 5G and Beyond: Challenges and Research Opportunities](#)

Yuanwei Liu;Xiao Liu;Xinyu Gao;Xidong Mu;Xiangwei Zhou;Octavia

A. Dobre;H. Vincent Poor

Publication Year: 2021,Page(s):92 - 98

[HTML](#)

[Reconfigurable, Intelligent, and Sustainable Wireless Environments for 6G Smart Connectivity](#)

Emilio Calvanese Strinati;George C. Alexandropoulos;Henk

Wymeersch;Benoît Denis;Vincenzo Sciancalepore;Raffaele

D'Errico;Antonio Clemente;Dinh-Thuy Phan-Huy;Elisabeth De

Carvalho;Petar Popovski

Publication Year: 2021,Page(s):99 - 105

[HTML](#)

[End-to-End Intent-Based Networking](#)

Luis Velasco;Marco Signorelli;Oscar González De Dios;Chrysa

Papagianni;Roberto Bifulco;Juan Jose Vegas Olmos;Simon

Pryor;Gino Carrozzo;Julius Schulz-Zander;Mehdi Bennis;Ricardo

Martinez;Filippo Cugini;Claudio Salvadori;Vincent Lefebvre;Luca

Valcarenghi;Marc Ruiz

Publication Year: 2021,Page(s):106 - 112

[HTML](#)

Cover 3

Publication Year: 2021,Page(s):C3 - C3

Cover 4

Publication Year: 2021,Page(s):C4 - C4

# IEEE WIRELESS COMMUNICATIONS

October 2021, Vol. 28, No. 5

## Front Cover

Publication Year: 2021,Page(s):C1 - C1

IEEE Access: Become a published author in 4 to 6 weeks

Publication Year: 2021,Page(s):C2 - C2

## Table of Contents

Publication Year: 2021,Page(s):1 - 1

## Message from the Editor-in-Chief

Unmanned Aerial Vehicles and Multi-Access Edge Computing

Yi Qian

Publication Year: 2021,Page(s):2 - 3

HTML

## Masthead

Publication Year: 2021,Page(s):4 - 4

## Industry Perspectives

IoT Evolution: What's Next?

Martin Beale;Hiromasa Uchiyama;John Chris Clifton

Publication Year: 2021,Page(s):5 - 7

HTML

## Book Reviews

6G: The Next Horizon: From Connected People and Things to Connected Intelligence

Bo Rong

Publication Year: 2021,Page(s):8 - 8

## Scanning the Literature

Publication Year: 2021,Page(s):9 - 9

## Aerial Computing: Drones for Multi-Access Edge Computing

Guest Editorial: Aerial Computing: Drones for Multi-Access Edge Computing

Jianchao Zheng;Alagan Anpalagan;Mohsen Guizani;Yuan Wu;Ning

Zhang;Xianfu Chen;F. Richard Yu

Publication Year: 2021,Page(s):10 - 12

HTML

Cellular Traffic Prediction via a Deep Multi-Reservoir Regression Learning Network for Multi-Access Edge Computing

Yingqi Li;Xiaochuan Sun;Haijun Zhang;Zhigang Li;Linlin

Qin;Chenwei Sun;Zhanlin Ji

Publication Year: 2021,Page(s):13 - 19

HTML

## Evaluation of the Employment of UAVs as Fog Nodes

Rodrigo A. C. da Silva;Nelson L. S. da Fonseca;Raouf Boutaba

Publication Year: 2021,Page(s):20 - 27

HTML

## Joint Optimization of Control and Communication in Autonomous

UAV Swarms: Challenges, Potentials, and Framework

Changhua Yao;Hui Tian;Cong Wang;Liubin Song;Jun

Jing;Wenfeng Ma

Publication Year: 2021,Page(s):28 - 35

HTML

Robust Edge Computing in UAV Systems via Scalable Computing and Cooperative Computing

Zhi Liu;Cheng Zhan;Ying Cui;Celimuge Wu;Han Hu

Publication Year: 2021,Page(s):36 - 42

HTML

An Aerial-Computing-Assisted Architecture for Large-Scale Sensor Networks

Zhaoquan Gu;Dongda Li;Nadra Guizani;Xiaojiang Du;Zhihong Tian

Publication Year: 2021,Page(s):43 - 49

HTML

Exploiting Aerial Computing for Air-to-Ground Coverage Enhancement

Ziwen Xie;Junyu Liu;Min Sheng;Nan Zhao;Jiandong Li

Publication Year: 2021,Page(s):50 - 58

HTML

Edge Intelligence for Multi-Dimensional Resource Management in Aerial-Assisted Vehicular Networks

Haixia Peng;Huaqing Wu;Xuemin Sherman Shen

Publication Year: 2021,Page(s):59 - 65

HTML

AI-Driven UAV-NOMA-MEC in Next Generation Wireless Networks

Zhong Yang;Mingzhe Chen;Xiao Liu;Yuanwei Liu;Yue

Chen;Shuguang Cui;H. Vincent Poor

Publication Year: 2021,Page(s):66 - 73

HTML

Transfer Learning for Distributed Intelligence in Aerial Edge Networks

Ke Zhang;Dingxin Si;Wei Wang;Jiayu Cao;Yan Zhang

Publication Year: 2021,Page(s):74 - 81

HTML

MCTS-Enhanced Hybrid Offloading for Aerial Multi-Access Edge Computing

Jianwen Xu;Kaoru Ota;Mianxiong Dong;Huan Zhou

Publication Year: 2021,Page(s):82 - 87

HTML

Joint Computation Offloading and Trajectory Design for Aerial Computing

Shangwei Zhang;Jiajia Liu;Yajie Zhu;Jing Zhang

Publication Year: 2021,Page(s):88 - 94

HTML

## Comsoc Publications

Publication Year: 2021,Page(s):95 - 95

A Secure Structure for UAV-Aided IoT Networks: Space-Time Key

Rui Han;Lin Bai;Jianwei Liu;Jinho Choi;Ying-Chang Liang

Publication Year: 2021,Page(s):96 - 101

HTML

An Edge Computing Paradigm for Massive IoT Connectivity Over High-Altitude Platform Networks  
Malong Ke;Zhen Gao;Yang Huang;Guoru Ding;Derrick Wing Kwan Ng;Qihui Wu;Jun Zhang  
Publication Year: 2021,Page(s):102 - 109  
HTML

Accepted from Open Call  
dmTP: A Deep Meta-Learning Based Framework for Mobile Traffic Prediction  
Zitian Zhang;Fuyou Li;Xiaoli Chu;Yuguang Fang;Jie Zhang  
Publication Year: 2021,Page(s):110 - 117  
HTML

Massive Access in Space-Based Internet of Things: Challenges, Opportunities, and Future Directions  
Jian Jiao;Shaohua Wu;Rongxing Lu;Qinyu Zhang  
Publication Year: 2021,Page(s):118 - 125  
HTML

When Serverless Computing Meets Edge Computing: Architecture, Challenges, and Open Issues  
Renchao Xie;Qinqin Tang;Shi Qiao;Han Zhu;F. Richard Yu;Tao Huang  
Publication Year: 2021,Page(s):126 - 133  
Cited by: Papers (1)  
HTML

Federated Learning and Wireless Communications  
Zhijin Qin;Geoffrey Ye Li;Hao Ye  
Publication Year: 2021,Page(s):134 - 140  
HTML

Deep Learning Techniques for Advancing 6G Communications in the Physical Layer  
Shangwei Zhang;Jiajia Liu;Tiago Koketsu Rodrigues;Nei Kato  
Publication Year: 2021,Page(s):141 - 147  
HTML

Disaster Relief Wireless Networks: Challenges and Solutions  
Yuntao Wang;Zhou Su;Ning Zhang;Dongfeng Fang  
Publication Year: 2021,Page(s):148 - 155  
HTML

UAV Swarm-Enabled Aerial Reconfigurable Intelligent Surface (SARIS)  
Bodong Shang;Rubayet Shafin;Lingjia Liu  
Publication Year: 2021,Page(s):156 - 163  
HTML

When UAV Meets IRS: Expanding Air-Ground Networks via Passive Reflection  
Xiaowei Pang;Min Sheng;Nan Zhao;Jie Tang;Dusit Niyato;Kai-Kit Wong  
Publication Year: 2021,Page(s):164 - 170  
HTML

Inter-Slice Radio Resource Allocation: An Online Convex Optimization Approach  
Tianyu Wang;Shaowei Wang  
Publication Year: 2021,Page(s):171 - 177  
HTML

Signature Codes in Visible Light Positioning  
Jianli Jin;Lifang Feng;Jianping Wang;Danyang Chen;Huimin Lu  
Publication Year: 2021,Page(s):178 - 184  
HTML

Design Considerations of Photonic THz Communications for 6G Networks  
Minkyu Sung;Sang-Rok Moon;Eon-Sang Kim;Sungmin Cho;Joon Ki Lee;Seung-Hyun Cho;Tetsuya Kawanishi;Ho-Jin Song  
Publication Year: 2021,Page(s):185 - 191  
HTML

Dispersed Federated Learning: Vision, Taxonomy, and Future Directions  
Latif U. Khan;Walid Saad;Zhu Han;Choong Seon Hong  
Publication Year: 2021,Page(s):192 - 198  
HTML

Comsoc Memberships  
Publication Year: 2021,Page(s):199 - 199

Socialized Learning for Smart Cities: Cognitive Paradigm, Methodology, and Solution  
Yunfeng Zhao;Zhicheng Liu;Chao Qiu;Xiuhua Li;Xiaofei Wang;Qinghua Hu  
Publication Year: 2021,Page(s):200 - 208  
HTML

Comsoc Training  
Publication Year: 2021,Page(s):209 - 209

Reconfigurable Intelligent Surface-Based Symbiotic Radio for 6G: Design, Challenges, and Opportunities  
Xianfu Lei;Mingjiang Wu;Fuhui Zhou;Xiaohu Tang;Rose Qingyang Hu;Pingzhi Fan  
Publication Year: 2021,Page(s):210 - 216  
HTML

What + If = IEEE  
Publication Year: 2021,Page(s):C3 - C3

IEEE Foundation: We have 30 million reasons to be proud  
Publication Year: 2021,Page(s):C4 - C4



# IEEE NETWORK<sup>®</sup>

September/October 2021, VOL. 35, NO. 5

## THE MAGAZINE OF GLOBAL INTERNETWORKING

### Front Cover

Publication Year: 2021,Page(s):C1 - C1

### Cover 2

Publication Year: 2021,Page(s):C2 - C2

### Table of Contents

Publication Year: 2021,Page(s):1 - 2

### Comsoc Membership

Publication Year: 2021,Page(s):3 - 3

### Women in Networks

Dr. Wenjing Lou, Virginia Tech, USA

Yingying Jennifer Chen

Publication Year: 2021,Page(s):4 - 6

[HTML](#)

### Comsoc Training

Publication Year: 2021,Page(s):7 - 7

### Industry Perspectives/Edited by Latif Ladid

Device Identity Management and End-to-End Security

Jacques Latour;Natasha D'Souza

Publication Year: 2021,Page(s):8 - 9

[HTML](#)

### Scanning the Literature

Xiaohua Tian

Publication Year: 2021,Page(s):10 - 11

### In-Network Computing: Emerging Trends for the Edge-Cloud Continuum

Guest Editorial: In-Network Computing: Emerging Trends for the Edge-Cloud Continuum

Deze Zeng;Nirwan Ansari;Marie-José Montpetit;Eve M.

Schooler;Daniele Tarchi

Publication Year: 2021,Page(s):12 - 13

[HTML](#)

### Revisiting Network Telemetry in COIN: A Case for Runtime Programmability

Chris Misa;Ramakrishnan Durairajan;Reza Rejaie;Walter Willinger

Publication Year: 2021,Page(s):14 - 20

[HTML](#)

### Computing Meets Network: COIN-Aware Offloading for Data-Intensive Blind Source Separation

Huanzhuo Wu;Zuo Xiang;Giang T. Nguyen;Yunbin Shen;Frank

H.P. Fitzek

Publication Year: 2021,Page(s):21 - 27

[HTML](#)

### Edge-Based Virtual Reality over 6G Terahertz Channels

Romano Fantacci;Benedetta Picano

Publication Year: 2021,Page(s):28 - 33

[HTML](#)

### Empowering Edge Intelligence by Air-Ground Integrated Federated Learning

Yuben Qu;Chao Dong;Jianchao Zheng;Haipeng Dai;Fan Wu;Song Guo;Alagan Anpalagan

Publication Year: 2021,Page(s):34 - 41

[HTML](#)

### Intelligent Task Offloading and Energy Allocation in the UAV-Aided Mobile Edge-Cloud Continuum

Zhipeng Cheng;Zhibin Gao;Minghui Liwang;Lianfen

Huang;Xiaojiang Du;Mohsen Guizani

Publication Year: 2021,Page(s):42 - 49

[HTML](#)

### Edge In-Network Computing Meets Blockchain: A Multi-Domain Heterogeneous Resource Trust Management Architecture

Linna Ruan;Shaoyong Guo;Xuesong Qiu;Luoming Meng;Shuang

Wu;Rajkumar Buyya

Publication Year: 2021,Page(s):50 - 57

[HTML](#)

### Blockchain-Enabled SLA Compliance for Crowdsourced Edge-Based Network Function Virtualization

Mohammad Saidur Rahman;Ibrahim Khalil;Mohammed

Atiquzzaman

Publication Year: 2021,Page(s):58 - 65

[HTML](#)

### A Software-Defined-Networking-Enabled Approach for Edge-Cloud Computing in the Internet of Things

Minghui Dai;Zhou Su;Ruidong Li;Shui Yu

Publication Year: 2021,Page(s):66 - 73

[HTML](#)

### Intelligence-Empowered Mobile Edge Computing: Framework, Issues, Implementation, and Outlook

Kai Jiang;Chuan Sun;Huan Zhou;Xiuhua Li;Mianxiong Dong;Victor

C. M. Leung

Publication Year: 2021,Page(s):74 - 82

[HTML](#)

### An Adaptive Neural Architecture Search Design for Collaborative Edge-Cloud Computing

Haodong Lu;Miao Du;Xiaoming He;Kai Qian;Jianli Chen;Yanfei

Sun;Kun Wang

Publication Year: 2021,Page(s):83 - 89

[HTML](#)

### A Cross-Domain Augmentation-Based AI Learning Framework for In-Network Gesture Recognition

Mengning Li;Luoyi Fu;Xinbing Wang

Publication Year: 2021,Page(s):90 - 97

[HTML](#)

Ubiquitous IoT with Integrated Space, Air, Ground, and Ocean Networks  
Guest Editorial: Ubiquitous IoT with Integrated Space, Air, Ground, and Ocean Networks  
Tianyang Bai;Jalel Ben-Othman;Shuai Han;Michel Kadoch;Wenjing Li;Bo Rong  
Publication Year: 2021,Page(s):98 - 99  
HTML

Cooperative Drone Communications for Space-Air-Ground Integrated Networks  
Yulong Zou;Jia Zhu;Tonghua Wu;Haiyan Guo;Hao Wei  
Publication Year: 2021,Page(s):100 - 106  
HTML

Unlocking Unlicensed Band Potential to Enable URLLC in Cloud Robotics for Ubiquitous IoT  
Rojeena Bajracharya;Rakesh Shrestha;Syed Ali Hassan;Haejoon Jung;Rafay Iqbal Ansari;Mohsen Guizani  
Publication Year: 2021,Page(s):107 - 113  
HTML

Intelligent Resource Management at the Edge for Ubiquitous IoT: An SDN-Based Federated Learning Approach  
Venkatraman Balasubramanian;Moayad Aloqaily;Martin Reisslein;Anna Scaglione  
Publication Year: 2021,Page(s):114 - 121  
HTML

UAV-Based Wide-Area Internet of Things: An Integrated Deployment Architecture  
Zhenyu Na;Bowen Li;Xin Liu;Jun Wang;Mengshu Zhang;Yue Liu;Beihang Mao  
Publication Year: 2021,Page(s):122 - 128  
HTML

On Smart IoT Remote Sensing over Integrated Terrestrial-Aerial-Space Networks: An Asynchronous Federated Learning Approach  
Zubair Md Fadlullah;Nei Kato  
Publication Year: 2021,Page(s):129 - 135  
HTML

Federated Imitation Learning: A Cross-Domain Knowledge Sharing Framework for Traffic Scheduling in 6G Ubiquitous IoT  
Ao Yu;Qingkai Yang;Lihua Dou;Mohamed Cheriet  
Publication Year: 2021,Page(s):136 - 142  
HTML

Blockchain-Based Dynamic Spectrum Sharing for 6G UIoT Networks  
Zhenqiang Sun;Wei Liang;Fei Qi;Zhongping Dong;Yunbin Cai  
Publication Year: 2021,Page(s):143 - 149  
HTML

Key Technologies in 6G SAGS IoT: Shape-Adaptive Antenna and Radar-Communication Integration  
Tao Hong;Mingming Lv;Shuli Zheng;Haohui Hong  
Publication Year: 2021,Page(s):150 - 157  
HTML

Integrating Sensing and Communications for Ubiquitous IoT: Applications, Trends, and Challenges  
Yuanhao Cui;Fan Liu;Xiaojun Jing;Junsheng Mu  
Publication Year: 2021,Page(s):158 - 167  
HTML

Service Coordination in the Space-Air-Ground Integrated Network  
Yan Guo;Qing Li;Yuanzhe Li;Ning Zhang;Shangguang Wang  
Publication Year: 2021,Page(s):168 - 173  
HTML

Internet-Scale Video Streaming over NDN  
Chavoosh Ghasemi;Hamed Yousefi;Beichuan Zhang  
Publication Year: 2021,Page(s):174 - 180  
HTML

Transparent Multipath: Using Double MPTCP Proxies to Enhance Transport Performance for Traditional TCP  
Jiangping Han;Kaiping Xue;Wenjia Wei;Yitao Xing;Jianqing Liu;Peilin Hong  
Publication Year: 2021,Page(s):181 - 187  
HTML

UAV-Assisted Communication Efficient Federated Learning in the Era of the Artificial Intelligence of Things  
Wei Yang Bryan Lim;Sahil Garg;Zehui Xiong;Yang Zhang;Dusit Niyato;Cyril Leung;Chunyan Miao  
Publication Year: 2021,Page(s):188 - 195  
HTML

Enabling Machine Learning with Service Function Chaining for Security Enhancement at 5G Edges  
Bohao Feng;Huachun Zhou;Guanglei Li;Yuming Zhang;Keshav Sood;Shui Yu  
Publication Year: 2021,Page(s):196 - 201  
HTML

Point Cloud Video Streaming: Challenges and Solutions  
Zhi Liu;Qiyue Li;Xianfu Chen;Celimuge Wu;Susumu Ishihara;Jie Li;Yusheng Ji  
Publication Year: 2021,Page(s):202 - 209  
HTML

Advancing Software-Defined Service-Centric Networking Toward In-Network Intelligence  
Xiaolu Li;Renchao Xie;F. Richard Yu;Tao Huang;Yunjie Liu  
Publication Year: 2021,Page(s):210 - 218  
HTML

Comsoc Publications  
Publication Year: 2021,Page(s):219 - 219

Blockchain-Based Public Key Infrastructure: A Transparent Digital Certification Mechanism for Secure Communication  
Aqsa Rashid;Asif Masood;Haider Abbas;Yin Zhang  
Publication Year: 2021,Page(s):220 - 225  
HTML

Full-Duplex Quadrature Spatial Modulation for Multi-Antenna Systems  
Ayesha Bint Saleem;Syed Ali Hassan;Haejoon Jung;Sahil Garg;Georges Kaddoum;Mohsen Guizani  
Publication Year: 2021,Page(s):226 - 233  
HTML

Symmetry-Aware SFC Framework for 5G Networks  
Hajar Hantouti;Nabil Benamar;Miloud Bagaa;Tarik Taleb  
Publication Year: 2021,Page(s):234 - 241  
HTML

Flying Social Networks: Architecture, Challenges and Open Issues  
Junling Shi;Liang Zhao;Xingwei Wang;Mohsen Guizani;Harris Gaanin;Na Lin  
Publication Year: 2021,Page(s):242 - 248  
HTML



[On the Localization of Wireless Targets: A Drone Surveillance Perspective](#)  
Igor Bisio;Chiara Garibotto;Halar Haleem;Fabio Lavagetto;Andrea Sciarrone  
Publication Year: 2021,Page(s):249 - 255  
Cited by: Papers (1)  
[HTML](#)

[SpiderNet: Spectrally Efficient and Energy Efficient Data Aided Demand Driven Elastic Architecture for 6G](#)  
Muhammad Nabeel;Umair Sajid Hashmi;Sabit Ekin;Hazem Refai;Adnan Abu-Dayya;Ali Imran  
Publication Year: 2021,Page(s):256 - 263  
[HTML](#)

[Customized Slicing for 6G: Enforcing Artificial Intelligence on Resource Management](#)  
Wanqing Guan;Haijun Zhang;Victor C. M. Leung  
Publication Year: 2021,Page(s):264 - 271  
[HTML](#)

[When Blockchain Meets Edge Intelligence: Trusted and Security Solutions for Consumers](#)  
Rajesh Gupta;Dakshita Reebadiya;Sudeep Tanwar;Neeraj Kumar;Mohsen Guizani  
Publication Year: 2021,Page(s):272 - 278  
[HTML](#)

[The Security of Internet of Vehicles Network: Adversarial Examples for Trajectory Mode Detection](#)  
Jing Qiu;Yuanyuan Chen;Zhihong Tian;Nadra Guizani;Xiaojiang Du  
Publication Year: 2021,Page(s):279 - 283  
[HTML](#)

[How Does Social Behavior Affect Your Password?](#)  
Daojing He;Hang Yu;Beibei Zhou;Shanshan Zhu;Min Zhang;Sammy Chan;Mohsen Guizani  
Publication Year: 2021,Page(s):284 - 289  
[HTML](#)

[NOMA-Based Cognitive Spectrum Access for 5G-Enabled Internet of Things](#)  
Xin Liu;Bin Lin;Mu Zhou;Min Jia  
Publication Year: 2021,Page(s):290 - 297  
[HTML](#)

[Security in IoT-Driven Mobile Edge Computing: New Paradigms, Challenges, and Opportunities](#)  
Sahil Garg;Kuljeet Kaur;Georges Kaddoum;Prasad Garigipati;Gagangeet Singh Aujla  
Publication Year: 2021,Page(s):298 - 305  
[HTML](#)

[Evolving Intelligent Reflector Surface Toward 6G for Public Health: Application in Airborne Virus Detection](#)  
Harun Šiljak;Nouman Ashraf;Michael Taynnan Barros;Daniel Perez Martins;Bernard Butler;Arman Farhang;Nicola Marchetti;Sasitharan Balasubramaniam  
Publication Year: 2021,Page(s):306 - 312  
[HTML](#)

Cover 3  
Publication Year: 2021,Page(s):C3 - C3

Cover 4  
Publication Year: 2021,Page(s):C4 - C4

# China 中国通信 Communications

October 2021 Vol. 18 No. 10

Indexed by SCIE

**[Front cover]**

Publication Year: 2021,Page(s):c1 - c1

**Contents**

Publication Year: 2021,Page(s):i - ii

**Building a large-scale and wide-area quantum Internet based on an OSI-alike model**

Zhonghui Li;Kaiping Xue;Jian Li;Nenghai Yu;Jianqing Liu;David S. L. Wei;Qibin Sun;Jun Lu

Publication Year: 2021,Page(s):1 - 14

**Communications Theories & Systems****Code design and latency analysis of distributed matrix multiplication with straggling servers in fading channels**

Ning Liu;Kuikui Li;Meixia Tao

Publication Year: 2021,Page(s):15 - 29

**Maximum network throughput based on cross-technology communication for sensor networks**

Demin Gao;Zhihao Guan;Shuo Zhang;Bin Hu

Publication Year: 2021,Page(s):30 - 44

**Evolution and effectiveness of loss functions in generative adversarial networks**

Ali Syed Saqlain;Fang Fang;Tanvir Ahmad;Liyun Wang;Zain-ul Abidin

Publication Year: 2021,Page(s):45 - 76

**Gridless variational Bayesian inference of line spectral from quantized samples**

Jiang Zhu;Qi Zhang;Xiangming Meng

Publication Year: 2021,Page(s):77 - 95

**Multi-task deep learning based hybrid precoding for mmWave massive MIMO system**

Zhongjie Li;Wei Gao;Min Zhang;Jiyuan Xiong

Publication Year: 2021,Page(s):96 - 106

**Outage performance and optimal design of MIMO-NOMA enhanced small cell networks with imperfect channel-state information**

Zheng Shi;Hong Wang;Yaru Fu;Guanghua Yang;Shaodan Ma;Xinrong Ye

Publication Year: 2021,Page(s):107 - 128

**General Galois processor for transmitters in 5G/6G base stations**

Qingbo Zhai;Yong Bai;Dake Liu

Publication Year: 2021,Page(s):129 - 134

**Enhanced power choice barring scheme for massive MTCs with grant-free NOMA**

Liang Wu;Xiaorui Tang;Zaichen Zhang;Jian Dang

Publication Year: 2021,Page(s):135 - 147

**Emerging Technologies & Applications****Time-domain dual component computation diversity based on generalized hybrid carrier**

Yuqing Feng;Xuejun Sha;Yong Li;Xiaojie Fang;Yusi Zhang

Publication Year: 2021,Page(s):148 - 157

**On the performance of active analog self-interference cancellation techniques for beyond 5G systems**

Haifeng Luo;Mark Holm;Tharmalingam Ratnarajah

Publication Year: 2021,Page(s):158 - 168

**Multi object tracking using gradient-based learning model in video-surveillance**

D. Mohanapriya;K. Mahesh

Publication Year: 2021,Page(s):169 - 180

**Catalyzing random access at physical layer for Internet of Things: An intelligence enabled user signature code acquisition approach**

Xiaojie Fang;Xinyu Yin;Xuejun Sha;Jinghui Qiu;Hongli Zhang

Publication Year: 2021,Page(s):181 - 192

**Wireless network requirements and solutions for the future circular collider: A hostile indoor environment**

Ahmed Bannour;Yichuang Sun

Publication Year: 2021,Page(s):193 - 203

**Engineering & Management****Traffic engineering based on deep reinforcement learning in hybrid IP/SR network**

Bo Chen;Penghao Sun;Peng Zhang;Julong Lan;Youjun Bu;Juan Shen

Publication Year: 2021,Page(s):204 - 213

**A task-resource joint management model with intelligent control for mission-aware dispersed computing**

Chengcheng Zhou;Chao Gong;Hongwen Hui;Fuhong

Lin;Guangping Zeng

Publication Year: 2021,Page(s):214 - 232

**Research on online education consumer choice behavior path based on informatization**

Yongrui Su;Ling Zhao

Publication Year: 2021,Page(s):233 - 252

**Call for paper**

Publication Year: 2021,Page(s):1 - 1

**Call for papers**

Publication Year: 2021,Page(s):2 - 2

**[Back cover]**

Publication Year: 2021,Page(s):c4 - c4

# IEEE TRANSACTIONS ON COMMUNICATIONS

A PUBLICATION OF THE IEEE COMMUNICATIONS SOCIETY



NOVEMBER 2021

VOLUME 69

NUMBER 11

IECMBT

(ISSN 0090-6778)

## Table of contents

Publication Year: 2021,Page(s):C1 - 7138

## IEEE Communications Society

Publication Year: 2021,Page(s):C2 - C2

## Hybrid-ARQ Protocols Based on Tornado Codes for the Packet Erasure Channel

Srinath Puducheri-Sundaravaradhan;Thomas E. Fuja

Publication Year: 2021,Page(s):7139 - 7153

HTML

## Construction of Multi-Rate Quasi-Cyclic LDPC Codes for Satellite Communications

Chong Zhang;Xijin Mu;Jinhong Yuan;Huaan Li;Baoming Bai

Publication Year: 2021,Page(s):7154 - 7166

HTML

## Further Results on Detection and Channel Estimation for Hardware Impaired Signals

Yunfei Chen;Zhutian Yang;Jie Zhang;Mohamed-Slim Alouini

Publication Year: 2021,Page(s):7167 - 7179

HTML

## On the Success Probability of Three Detectors for the Box-Constrained Integer Linear Model

Jinming Wen;Xiao-Wen Chang

Publication Year: 2021,Page(s):7180 - 7191

HTML

## Quantumized Microwave Detection Based on $\Lambda$ -Type Three-Level Superconducting System: HMM Modeling and Performance Prediction

Junyu Zhang;Chen Gong;Shangbin Li;Shanchi Wu;Rui Ni;Chengjie Zuo;Jinkang Zhu;Ming Zhao;Zhengyuan Xu

Publication Year: 2021,Page(s):7192 - 7204

HTML

## On Minimizing Symbol Error Rate Over Fading Channels With Low-Resolution Quantization

Neil Irwin Bernardo;Jingge Zhu;Jamie Evans

Publication Year: 2021,Page(s):7205 - 7221

HTML

## Asymmetric Adaptive Modulation for Uplink NOMA Systems

Kaijie Wang;Ting Zhou;Tianheng Xu;Honglin Hu;Xiaoming Tao

Publication Year: 2021,Page(s):7222 - 7235

HTML

## Information Age-Delay Correlation and Optimization With Finite Block Length

Jie Cao;Xu Zhu;Yufei Jiang;Zhongxiang Wei;Sumei Sun

Publication Year: 2021,Page(s):7236 - 7250

HTML

## A Unified MIMO Optimization Framework Relying on the KKT Conditions

Shiqi Gong;Chengwen Xing;Yindi Jing;Shuai Wang;Jiaheng Wang;Sheng Chen;Lajos Hanzo

Publication Year: 2021,Page(s):7251 - 7268

HTML

## A New Class of Structured Beamforming for Content-Centric Fog

Radio Access Networks

Wenbo Zhu;Hoang Duong Tuan;Eryk Dutkiewicz;Yong Fang;Lajos Hanzo

Publication Year: 2021,Page(s):7269 - 7282

HTML

## Sum-Rate Maximization for Multi-Reconfigurable Intelligent

Surface-Assisted Device-to-Device Communications

Yashuai Cao;Tiejun Lv;Wei Ni;Zhipeng Lin

Publication Year: 2021,Page(s):7283 - 7296

HTML

## The Multi-Source Probabilistically Preemptive M/PH/1/1 Queue With Packet Errors

Ozancan Doğan;Nail Akar

Publication Year: 2021,Page(s):7297 - 7308

Cited by: Papers (1)

HTML

## On the Minimum of the Expansion Factor for Universal Coding of Integers

Wei Yan;Sian-Jheng Lin

Publication Year: 2021,Page(s):7309 - 7319

HTML

## Adaptive Coding and Channel Shaping Through Reconfigurable

Intelligent Surfaces: An Information-Theoretic Analysis

Roy Karasik;Osvaldo Simeone;Marco Di Renzo;Shlomo Shamai Shitz

Publication Year: 2021,Page(s):7320 - 7334

HTML

## On the Stability Region of Intermittent Interference Networks

Sajjad Nassirpour;Alireza Vahid

Publication Year: 2021,Page(s):7335 - 7349

HTML

## Multilevel Topological Interference Management: A TIM-TIN

Perspective

Chunhua Geng;Hua Sun;Syed A. Jafar

Publication Year: 2021,Page(s):7350 - 7362

Cited by: Papers (1)

HTML

## Erasure Broadcast Channels With Intermittent Feedback

Alireza Vahid;Shih-Chun Lin;I-Hsiang Wang

Publication Year: 2021,Page(s):7363 - 7375

HTML

A Novel Transformation Approach of Shared-Link Coded Caching Schemes for Multiaccess Networks  
Minquan Cheng;Kai Wan;Dequan Liang;Mingming Zhang;Giuseppe Caire  
Publication Year: 2021,Page(s):7376 - 7389  
HTML

On the Tradeoff Between Computation and Communication Costs for Distributed Linearly Separable Computation  
Kai Wan;Hua Sun;Mingyue Ji;Giuseppe Caire  
Publication Year: 2021,Page(s):7390 - 7405  
HTML

Optimal Quantizer Structure for Maximizing Mutual Information Under Constraints  
Thuan Nguyen;Thinh Nguyen  
Publication Year: 2021,Page(s):7406 - 7413  
HTML

Machine Learning for User Partitioning and Phase Shifters Design in RIS-Aided NOMA Networks  
Zhong Yang;Yuanwei Liu;Yue Chen;Naofal Al-Dhahir  
Publication Year: 2021,Page(s):7414 - 7428  
HTML

Deep Learning-Based Robust Precoding for Massive MIMO  
Junchao Shi;Wenjin Wang;Xinping Yi;Xiqi Gao;Geoffrey Ye Li  
Publication Year: 2021,Page(s):7429 - 7443  
HTML

Ultra-Reliable Indoor Millimeter Wave Communications Using Multiple Artificial Intelligence-Powered Intelligent Surfaces  
Mehdi Naderi Soorki;Walid Saad;Mehdi Bennis;Choong Seon Hong  
Publication Year: 2021,Page(s):7444 - 7457  
HTML

Deep Learning-Based Beam Tracking for Millimeter-Wave Communications Under Mobility  
Sun Hong Lim;Sunwoo Kim;Byonghyo Shim;Jun Won Choi  
Publication Year: 2021,Page(s):7458 - 7469  
HTML

Exploiting Underlay Spectrum Sharing in Cell-Free Massive MIMO Systems  
Diluka Loku Galappaththige;Gayan Amarasuriya Aruma Baduge  
Publication Year: 2021,Page(s):7470 - 7488  
HTML

A New QoS-Guarantee Strategy for NOMA Assisted Semi-Grant-Free Transmission  
Zhiguo Ding;Robert Schober;H. Vincent Poor  
Publication Year: 2021,Page(s):7489 - 7503  
HTML

Cooperative Rate-Splitting for Downlink Multiuser MISO Systems With Partial CSIT  
Jian Zhang;Jianhua Ge  
Publication Year: 2021,Page(s):7504 - 7519  
HTML

Clustering-Based Activity Detection Algorithms for Grant-Free Random Access in Cell-Free Massive MIMO  
Unnikrishnan Kunnath Ganesan;Emil Björnson;Erik G. Larsson  
Publication Year: 2021,Page(s):7520 - 7530  
HTML

Multi-Sequence Spreading Random Access (MSRA) for Compressive Sensing-Based Grant-Free Communication  
Ameha Tsegaye Abebe;Chung G. Kang  
Publication Year: 2021,Page(s):7531 - 7543  
HTML

S-ALOHA Systems With Successive Transmission: Emulating CSMA System  
Jun-Bae Seo;Hu Jin  
Publication Year: 2021,Page(s):7544 - 7558  
HTML

Multi-Point Coordination in Massive MIMO Systems With Sectorized Antennas  
Shahram Shahsavari;Mehrdad Nosrati;Parisa Hassanzadeh;Alexei Ashikhmin;Thomas L. Marzetta;Elza Erkip  
Publication Year: 2021,Page(s):7559 - 7575  
Cited by: Papers (1)  
HTML

Co-Existing Preamble and Data Transmissions in Random Access for MTC With Massive MIMO  
Jinho Choi;Jie Ding  
Publication Year: 2021,Page(s):7576 - 7586  
HTML

Exploiting Impacts of Antenna Selection and Energy Harvesting for Massive Network Connectivity  
Minh-Sang Van Nguyen;Dinh-Thuan Do;Saba Al-Rubaye;Shahid Mumtaz;Anwer Al-Dulaimi;Octavia A. Dobre  
Publication Year: 2021,Page(s):7587 - 7602  
HTML

Jointly Adaptive Distributed Beamforming and Resource Allocation for Buffer-Aided Multiple-Relay NOMA Networks  
Juanjuan Ren;Xianfu Lei;P. Takis Mathiopoulos  
Publication Year: 2021,Page(s):7603 - 7617  
HTML

Data-Supported Caching Policy Optimization for Wireless D2D Caching Networks  
Shengqian Han;Fei Xue;Chenyang Yang;Jinyang Liu;Fengxu Lin  
Publication Year: 2021,Page(s):7618 - 7630  
HTML

Optimal Power Allocation Between Beam Tracking and Symbol Detection Channels in a Free-Space Optical Communications Receiver  
Muhammad Salman Bashir;Mohamed-Slim Alouini  
Publication Year: 2021,Page(s):7631 - 7646  
HTML

Evolution Properties and Spatial-Mode UWOC Performances of the Perfect Vortex Beam Subject to Oceanic Turbulence  
Wei Wang;Ping Wang;Weina Pang;Yuting Pan;Yuanhao Nie;Lixin Guo  
Publication Year: 2021,Page(s):7647 - 7658  
HTML

UAV-Relayed Covert Communication Towards a Flying Warden  
Xinying Chen;Min Sheng;Nan Zhao;Wei Xu;Dusit Niyato  
Publication Year: 2021,Page(s):7659 - 7672  
Cited by: Papers (1)  
HTML

Improved Constructions for Secure Multi-Party Batch Matrix Multiplication  
Jinbao Zhu;Qifa Yan;Xiaohu Tang  
Publication Year: 2021,Page(s):7673 - 7690  
Cited by: Papers (1)  
HTML

A Generic Complementary Sequence Construction and Associated Encoder/Decoder Design  
Alphan Şahin;Rui Yang  
Publication Year: 2021,Page(s):7691 - 7705  
HTML

Nonlinear Channel Estimation for Minimally Sampled Baseband OFDM Systems  
Ching-Hsiang Tseng;Jen-Ho Cheng  
Publication Year: 2021,Page(s):7706 - 7721  
HTML

Nonconvex Regularized Gradient Projection Sparse Reconstruction for Massive MIMO Channel Estimation  
Pengxia Wu;Julian Cheng  
Publication Year: 2021,Page(s):7722 - 7735  
HTML

Two-Timescale Channel Estimation for Reconfigurable Intelligent Surface Aided Wireless Communications  
Chen Hu;Linglong Dai;Shuangfeng Han;Xiaoyun Wang  
Publication Year: 2021,Page(s):7736 - 7747  
Cited by: Papers (9)  
HTML

Dimension Reduced Channel Feedback for Reconfigurable Intelligent Surface Aided Wireless Communications  
Decai Shen;Linglong Dai  
Publication Year: 2021,Page(s):7748 - 7760  
Cited by: Papers (1)  
HTML

Non-Linear Energy Harvesting in RIS-Assisted URLLC Networks for Industry Automation  
Shivani Dhok;Prasanna Raut;Prabhat Kumar Sharma;Keshav Singh;Chih-Peng Li  
Publication Year: 2021,Page(s):7761 - 7774  
HTML

MMSE-Optimal Sequential Processing for Cell-Free Massive MIMO With Radio Stripes  
Zakir Hussain Shaik;Emil Björnson;Erik G. Larsson  
Publication Year: 2021,Page(s):7775 - 7789  
HTML

Reconfigurable Intelligent Surface Empowered Device-to-Device Communication Underlying Cellular Networks  
Gang Yang;Yating Liao;Ying-Chang Liang;Olav Tirkkonen;Gongpu Wang;Xing Zhu  
Publication Year: 2021,Page(s):7790 - 7805  
HTML

Age of Information Minimization for Grant-Free Non-Orthogonal Massive Access Using Mean-Field Games  
Hongliang Zhang;Yuhan Kang;Linyang Song;Zhu Han;H. Vincent Poor  
Publication Year: 2021,Page(s):7806 - 7820  
HTML

Reconfigurable Intelligent Surface Aided Power Control for Physical-Layer Broadcasting  
Huimei Han;Jun Zhao;Wenchao Zhai;Zehui Xiong;Dusit Niyato;Marco Di Renzo;Quoc-Viet Pham;Weidang Lu;Kwok-Yan Lam  
Publication Year: 2021,Page(s):7821 - 7836  
HTML

Modeling RIS Empowered Outdoor-to-Indoor Communication in mmWave Cellular Networks  
Mahyar Nemati;Behrouz Maham;Shiva Raj Pokhrel;Jinho Choi  
Publication Year: 2021,Page(s):7837 - 7850  
HTML

UAV-Assisted Time-Efficient Data Collection via Uplink NOMA  
Wei Wang;Nan Zhao;Li Chen;Xin Liu;Yunfei Chen;Dusit Niyato  
Publication Year: 2021,Page(s):7851 - 7863  
HTML

On Beamforming Gain Models for Performance Evaluation and Analysis of Narrowband and Wideband Wireless Networks  
Yi Chen;Chong Han  
Publication Year: 2021,Page(s):7864 - 7878  
HTML

On the Joint Effects of HPA Nonlinearities and IQ Imbalance on Mixed RF/FSO Cooperative Systems  
Elyes Balti;Brian K. Johnson  
Publication Year: 2021,Page(s):7879 - 7894  
HTML

Power Beacon Placement for Maximizing Guaranteed Coverage in Bistatic Backscatter Networks  
Xiaolun Jia;Xiangyun Zhou  
Publication Year: 2021,Page(s):7895 - 7909  
HTML

TechRxiv: Share Your Preprint Research with the World!  
Publication Year: 2021,Page(s):7910 - 7910

IEEE Communications Society  
Publication Year: 2021,Page(s):C3 - C3

Blank page  
Publication Year: 2021,Page(s):C4 - C4



# IEEE JOURNAL ON SELECTED AREAS IN COMMUNICATIONS

A PUBLICATION OF THE IEEE COMMUNICATIONS SOCIETY



NOVEMBER 2021

VOLUME 39

NUMBER 11

ISACEM

(ISSN 0733-8716)

Table of contents

Publication Year: 2021,Page(s):C1 - C4

IEEE Journal on Selected Areas in Communications

Publication Year: 2021,Page(s):C2 - C2

Guest Editorial Special Issue on UAV Communications in 5G and Beyond Networks—Part II

Qingqing Wu;Jie Xu;Yong Zeng;Derrick Wing Kwan Ng;Naofal Al-Dhahir;Robert Schober;A. Lee Swindlehurst

Publication Year: 2021,Page(s):3247 - 3251

HTML

Let's Trade in the Future! A Futures-Enabled Fast Resource Trading Mechanism in Edge Computing-Assisted UAV Networks

Minghui Liwang;Zhibin Gao;Xianbin Wang

Publication Year: 2021,Page(s):3252 - 3270

HTML

Hybrid Beamforming Design and Resource Allocation for UAV-Aided Wireless-Powered Mobile Edge Computing Networks With NOMA

Wanmei Feng;Jie Tang;Nan Zhao;Xiuyin Zhang;Xianbin Wang;Kai-Kit Wong;Jonathon A. Chambers

Publication Year: 2021,Page(s):3271 - 3286

Cited by: Papers (1)

HTML

Service Provisioning for UAV-Enabled Mobile Edge Computing

Yuben Qu;Haipeng Dai;Haichao Wang;Chao Dong;Fan Wu;Song Guo;Qihui Wu

Publication Year: 2021,Page(s):3287 - 3305

HTML

5G-Enabled UAV-to-Community Offloading: Joint Trajectory Design and Task Scheduling

Zhaolong Ning;Peiran Dong;Miaowen Wen;Xiaojie Wang;Lei Guo;Ricky Y. K. Kwok;H. Vincent Poor

Publication Year: 2021,Page(s):3306 - 3320

HTML

Optimal Transmit Power and Flying Location for UAV Covert Wireless Communications

Shihao Yan;Stephen V. Hanly;Iain B. Collings

Publication Year: 2021,Page(s):3321 - 3333

Cited by: Papers (1)

HTML

Robust 3D-Trajectory and Time Switching Optimization for Dual-UAV-Enabled Secure Communications

Wei Wang;Xinrui Li;Rui Wang;Kanapathippillai Cumanan;Wei Feng;Zhiguo Ding;Octavia A. Dobre

Publication Year: 2021,Page(s):3334 - 3347

HTML

UAV-Enabled Covert Wireless Data Collection

Xiaobo Zhou;Shihao Yan;Feng Shu;Riqing Chen;Jun Li

Publication Year: 2021,Page(s):3348 - 3362

HTML

Joint Resource, Trajectory, and Artificial Noise Optimization in Secure Driven 3-D UAVs With NOMA and Imperfect CSI

Yabo Li;Haijun Zhang;Keping Long

Publication Year: 2021,Page(s):3363 - 3377

HTML

Multi-UAV Trajectory Optimization Considering Collisions in FSO Communication Networks

Sooeun Song;Minsu Choi;Da-Eun Ko;Jong-Moon Chung

Publication Year: 2021,Page(s):3378 - 3394

HTML

Resource Allocation for 5G-UAV-Based Emergency Wireless Communications

Zhuohui Yao;Wenchi Cheng;Wei Zhang;Hailin Zhang

Publication Year: 2021,Page(s):3395 - 3410

Cited by: Papers (1)

HTML

Joint Optimisation of Real-Time Deployment and Resource Allocation for UAV-Aided Disaster Emergency Communications

Tan Do-Duy;Long D. Nguyen;Trung Q. Duong;Saeed R. Khosravirad;Holger Claussen

Publication Year: 2021,Page(s):3411 - 3424

Cited by: Papers (2)

HTML

AI-Driven Statistical Delay and Error-Rate Bounded QoS Provisioning for mMURLLC Over UAV-Multimedia 6G Mobile Networks Using FBC

Xi Zhang;Jingqing Wang;H. Vincent Poor

Publication Year: 2021,Page(s):3425 - 3443

HTML

A UAV-Assisted Ubiquitous Trust Communication System in 5G and Beyond Networks

Mingfeng Huang;Anfeng Liu;Neal N. Xiong;Jie Wu

Publication Year: 2021,Page(s):3444 - 3458

HTML



MPC-Based UAV Navigation for Simultaneous Solar-Energy Harvesting and Two-Way Communications  
Hoang Duong Tuan;Ali Arshad Nasir;Andrey V. Savkin;H. Vincent Poor;Eryk Dutkiewicz  
Publication Year: 2021,Page(s):3459 - 3474  
[HTML](#)

Hybrid Satellite-UAV-Terrestrial Networks for 6G Ubiquitous Coverage: A Maritime Communications Perspective  
Yanmin Wang;Wei Feng;Jue Wang;Tony Q. S. Quek  
Publication Year: 2021,Page(s):3475 - 3490  
Cited by: Papers (2)  
[HTML](#)

UAV-LEO Integrated Backbone: A Ubiquitous Data Collection Approach for B5G Internet of Remote Things Networks  
Ting Ma;Haibo Zhou;Bo Qian;Nan Cheng;Xuemin Shen;Xiang Chen;Bo Bai  
Publication Year: 2021,Page(s):3491 - 3505  
[HTML](#)

UAV Trajectory and Communication Co-Design: Flexible Path Discretization and Path Compression  
Yijun Guo;Changsheng You;Changchuan Yin;Rui Zhang  
Publication Year: 2021,Page(s):3506 - 3523  
[HTML](#)

Novel Optimal Trajectory Design in UAV-Assisted Networks: A Mechanical Equivalence-Based Strategy  
Xiaopeng Yuan;Yulin Hu;Deshi Li;Anke Schmeink  
Publication Year: 2021,Page(s):3524 - 3541  
[HTML](#)

Joint Subchannel Allocation and Power Control in Licensed and Unlicensed Spectrum for Multi-Cell UAV-Cellular Network  
Amr S. Matar;Xuemin Shen  
Publication Year: 2021,Page(s):3542 - 3554  
[HTML](#)

Time and Energy Minimization Communications Based on Collaborative Beamforming for UAV Networks: A Multi-Objective Optimization Method  
Geng Sun;Jiahui Li;Yanheng Liu;Shuang Liang;Hui Kang  
Publication Year: 2021,Page(s):3555 - 3572  
[HTML](#)

TechRxiv: Share Your Preprint Research with the World!  
Publication Year: 2021,Page(s):3573 - 3573

IEEE Open Access Publishing  
Publication Year: 2021,Page(s):3574 - 3574

IEEE Communications Society Information  
Publication Year: 2021,Page(s):C3 - C3

# IEEE COMMUNICATIONS LETTERS

A PUBLICATION OF THE IEEE COMMUNICATIONS SOCIETY



NOVEMBER 2021

VOLUME 25

NUMBER 11

ICLEF6

(ISSN 1558-2558)

## Table of contents

Publication Year: 2021,Page(s):C1 - 3443

## IEEE Communications Society

Publication Year: 2021,Page(s):C2 - C2

### Analytical Investigation of Long-Time Diffusion Dynamics in a Synaptic Channel With Glial Cells

Abdullah Enes Oncu;Halil Umud Demir;Halil Ibrahim Orhan;Bayram Cevdet Cevdet Akdeniz;Asaf Toprakci;Mehmet Anil Aslihak;H. Birkan Yilmaz;Ali E. Pusane;Tuna Tugcu;Fatih Dinc  
Publication Year: 2021,Page(s):3444 - 3448

[HTML](#)

### A Polar Coding With a Q-Section NBC Property for Managing Phase Ambiguity and PAPR in Multi-Carrier Communications

Cheng-Yen Chang;Yu-Qin Yang;Te-Sheng Fan;Shih-Kai Lee;Huang-Chang Lee;Mao-Chao Lin  
Publication Year: 2021,Page(s):3449 - 3453

[HTML](#)

### A Type-Aware Coding Approach to Joint Source-Channel Coding

Xinyuanmeng Yao;Xiao Ma  
Publication Year: 2021,Page(s):3454 - 3457

[HTML](#)

### Across-Array Coding for Resistive Memories With Sneak-Path Interference and Lognormal Distributed Resistance Variations

Panpan Li;Guanghui Song;Kui Cai;Qiyue Yu  
Publication Year: 2021,Page(s):3458 - 3462

[HTML](#)

### An Improved Path Splitting Decision-Aided SCL Decoding Algorithm for Polar Codes

Xiumin Wang;Hongchao Zhang;Jun Li;Xiupin Bao;Kunyu Xie  
Publication Year: 2021,Page(s):3463 - 3467

[HTML](#)

### Efficient Encoding of Constrained Block Codes

Kees A. Schouhamer Immink;Kui Cai  
Publication Year: 2021,Page(s):3468 - 3472

[HTML](#)

### Low-Complexity Kötter's Interpolation for List Decoding of Elliptic Codes

Yunqi Wan;Jiongyue Xing  
Publication Year: 2021,Page(s):3473 - 3477

[HTML](#)

### Optimal Interleavers for Classical and Quantum Tensor Product Codes

Priya J. Nadkarni;Shayan Srinivasa Garani  
Publication Year: 2021,Page(s):3478 - 3482

[HTML](#)

### Windowed Decoding for Delayed Bit-Interleaved Coded Modulation

Yihuan Liao;Min Qiu;Jinhong Yuan  
Publication Year: 2021,Page(s):3483 - 3487

[HTML](#)

### A Privacy Attack on Coded Caching by Colluding Users

Yu Wang;Alhussein A. Abouzeid  
Publication Year: 2021,Page(s):3488 - 3492

[HTML](#)

### Secrecy Energy Efficiency in Full-Duplex AF Relay Systems With Untrusted Energy Harvesters

Jian Ouyang;Xuewei Wang;Ba Xu;Jia Zhu;Wei-Ping Zhu  
Publication Year: 2021,Page(s):3493 - 3497

[HTML](#)

### Simultaneous Transmission and Reflection Reconfigurable Intelligent Surface Assisted Secrecy MISO Networks

Hehao Niu;Zheng Chu;Fuhui Zhou;Zhengyu Zhu  
Publication Year: 2021,Page(s):3498 - 3502

[HTML](#)

### Comparative Analysis of Distance Distributions for CoMP-Aided Cellular Networks Using Thomas Cluster Process

Lihua Yang;Junhui Zhao;Ziyang Zhang  
Publication Year: 2021,Page(s):3503 - 3507

[HTML](#)

### Exact Analysis of RIS-Aided THz Wireless Systems Over $\alpha$ - $\mu$ Fading With Pointing Errors

Vinay Kumar Chapala;S. M. Zafaruddin  
Publication Year: 2021,Page(s):3508 - 3512

[HTML](#)

### Novel Expressions for Ricean Sum Distributions and Densities

Fernando Darío Almeida García;Henry Ramiro Carvajal Mora;Nathaly Verónica Orozco Garzón

Publication Year: 2021,Page(s):3513 - 3517

[HTML](#)

### On the Sum of Extended $\eta$ - $\mu$ Variates With MRC Applications

Osamah S. Badarneh;Fares S. Almeahmadi  
Publication Year: 2021,Page(s):3518 - 3522

[HTML](#)

### RIS Assisted Dual-Hop Mixed PLC/RF for Smart Grid Applications

Ashish Kumar Padhan;Hemanta Kumar Sahu;P. R. Sahu;S. R. Samantaray

Publication Year: 2021,Page(s):3523 - 3527

[HTML](#)

Switching Signal Decoding Order in Uplink NOMA System With Imperfect SIC  
Zhen Chen;Bin Liu  
Publication Year: 2021,Page(s):3528 - 3532  
[HTML](#)

AMLR: An Adaptive Multi-Level Routing Algorithm for Dragonfly Network  
Lijing Zhu;Huaxi Gu;Xiaoshan Yu;Wenhao Sun  
Publication Year: 2021,Page(s):3533 - 3536  
[HTML](#)

Guaranteeing Slice Performance Isolation With SDN  
Alessio Giorgetti;Davide Scano;Luca Valcarenghi  
Publication Year: 2021,Page(s):3537 - 3541  
[HTML](#)

MLED: A Layered Architecture for Reducing Undetected Error Probability in File Transfer  
Arash Sarabi;Ibrahim Matta;Violet R. Syrotiuk  
Publication Year: 2021,Page(s):3542 - 3545  
[HTML](#)

P4Flow: Monitoring Traffic Flows With Programmable Networks  
Habib Mostafaei;Shafi Afridi  
Publication Year: 2021,Page(s):3546 - 3550  
[HTML](#)

Toward In-Network Intelligence: Running Distributed Artificial Neural Networks in the Data Plane  
Mateus Saqueti;Ronaldo Canofre;Arthur F. Lorenzon;Fábio D. Rossi;José Rodrigo Azambuja;Weverton Cordeiro;Marcelo C. Luizelli  
Publication Year: 2021,Page(s):3551 - 3555  
[HTML](#)

2D Fingerprinting-Based Localization for mmWave Cell-Free Massive MIMO Systems  
Zhexian Shen;Kui Xu;Xiaochen Xia  
Publication Year: 2021,Page(s):3556 - 3560  
Cited by: [Papers \(1\)](#)  
[HTML](#)

A DOA Estimation Method for UCA Based on Orthogonal Subspace Compensation  
Ping Li;Jianfeng Li;Qiting Zhang;Yawei Tang  
Publication Year: 2021,Page(s):3561 - 3564  
[HTML](#)

Recycling Sampling Timing Offset of Wi-Fi for Estimating Multiple ToFs of Superimposed Signal  
Jaegook Lee;Jio Gim;Young Deok Park;Young-Joo Suh  
Publication Year: 2021,Page(s):3565 - 3569  
[HTML](#)

Shadowing Cancellation and Iterative Newton-Gradient Algorithm for UAV-Assisted Localization  
Xu Zou;Fasheng Zhou;Lisheng Fan;Wei Chen  
Publication Year: 2021,Page(s):3570 - 3574  
[HTML](#)

Autoencoder-Based Unequal Error Protection Codes  
Vukan Ninkovic;Dejan Vukobratovic;Christian Häger;Henk Wymeersch;Alexandre Graell i Amat  
Publication Year: 2021,Page(s):3575 - 3579  
[HTML](#)

Coverage Hole Detection for mmWave Networks: An Unsupervised Learning Approach  
Chethan K. Anjinappa;İsmail Güvenç  
Publication Year: 2021,Page(s):3580 - 3584  
[HTML](#)

Meta-WF: Meta-Learning-Based Few-Shot Wireless Impersonation Detection for Wi-Fi Networks  
Taotao Li;Zhen Hong;Lisong Liu;Zhenyu Wen;Li Yu  
Publication Year: 2021,Page(s):3585 - 3589  
[HTML](#)

Neural Layered Decoding of 5G LDPC Codes  
Nemin Shah;Yash Vasavada  
Publication Year: 2021,Page(s):3590 - 3593  
[HTML](#)

User-Centric Association in Ultra-Dense mmWave Networks via Deep Reinforcement Learning  
Qing Xue;Yao Sun;Jian Wang;Gang Feng;Li Yan;Shaodan Ma  
Publication Year: 2021,Page(s):3594 - 3598  
[HTML](#)

Layered Molecular Shift Keying for Molecular Communication via Diffusion  
Miaowen Wen;Feng Liang;Yuankun Tang  
Publication Year: 2021,Page(s):3599 - 3603  
[HTML](#)

Novel Linear Companding Transform Design Based on Linear Curve Fitting for PAPR Reduction in OFDM Systems  
Xiaoyan Cui;Kaiming Liu;Yuan'an Liu  
Publication Year: 2021,Page(s):3604 - 3608  
[HTML](#)

Uni-Cycle Genetic Algorithm to Improve the Adaptive Equalizer Performance  
Mohammed J. Khafaji;Maciej Krasicki  
Publication Year: 2021,Page(s):3609 - 3613  
[HTML](#)

Machine Learning Framework Combining Radial Phase Grating and Channel Information-Assisted Underwater Wireless Optical OAM Communications  
Wei Wang;Ping Wang;Yatong Song;Weina Pang;Shuang Li;Yuanhao Nie  
Publication Year: 2021,Page(s):3614 - 3618  
[HTML](#)

Sum Rate Maximization for Intelligent Reflecting Surface-Aided Visible Light Communications  
Shiyuan Sun;Fang Yang;Jian Song  
Publication Year: 2021,Page(s):3619 - 3623  
[HTML](#)

Design of High-Dimensional Grassmannian Frames via Block Minorization Maximization  
R. Jyothi;Prabhu Babu;Petre Stoica  
Publication Year: 2021,Page(s):3624 - 3628  
[HTML](#)

Dynamic Small-Cell Clustering Using Affinity Propagation Algorithm in Asynchronous 5G NR OFDM Systems  
Seju Park;Han-Shin Jo;Cheol Mun;Jong-Gwan Yook  
Publication Year: 2021,Page(s):3629 - 3633  
[HTML](#)

Fuzzy Logic Guided Load-Balanced User Association and Beamforming for Distributed mmWave Networks  
Zhen Zhang;Jun Xu;Pengcheng Zhu;Jiamin Li  
Publication Year: 2021,Page(s):3634 - 3638  
[HTML](#)

Low-Complexity Algorithm for Outage Optimal Resource Allocation in Energy Harvesting-Based UAV Identification Networks  
Jae Cheol Park;Kyu-Min Kang;Junil Choi  
Publication Year: 2021,Page(s):3639 - 3643  
[HTML](#)

On Max-Min Complete Targets Sampling in Backscatter-Aided RF Powered IoT Networks  
Rui Yang;Changlin Yang;Kwan-Wu Chin;Ying Liu;Tengjiao He  
Publication Year: 2021,Page(s):3644 - 3648  
[HTML](#)

Optimization of Duplex Mode Selection for Network-Assisted Full-Duplex Cell-Free Massive MIMO Systems  
Yue Zhu;Jiamin Li;Pengcheng Zhu;Hao Wu;Dongming Wang;Xiaohu You  
Publication Year: 2021,Page(s):3649 - 3653  
[HTML](#)

System Throughput Maximization of Uplink NOMA Random Access Systems  
Lifeng Mai;Qi Zhang;Jiayin Qin  
Publication Year: 2021,Page(s):3654 - 3658  
[HTML](#)

User-Centric Resource Scheduling for Dual-Connectivity Communications  
Haixia Cui;Fan You  
Publication Year: 2021,Page(s):3659 - 3663  
[HTML](#)

A Rapid PN Code Acquisition Method for Low Spreading Factor Satellite Communication Systems  
Zhiyuan Lin;Zuyao Ni;Linling Kuang;Chunxiao Jiang;Bingkun Liu;Zhen Huang  
Publication Year: 2021,Page(s):3664 - 3668  
[HTML](#)

Analysis of ULA Spacing Threshold and Capacity Reduction in Distributed Satellite MIMO Scenarios  
Cong Li;Hongpeng Zhu;Guang Li;Yanyan Zhang;Guangxia Li  
Publication Year: 2021,Page(s):3669 - 3673  
[HTML](#)

Multiple UAV-Borne IRS-Aided Millimeter Wave Multicast Communications: A Joint Optimization Framework  
Kang Guo;Chao Wang;Zan Li;Derrick Wing Kwan Ng;Kai-Kit Wong  
Publication Year: 2021,Page(s):3674 - 3678  
[HTML](#)

A Low-Complexity Parameter Estimation Algorithm for an Integrated Radar-Communication Waveform With Cross-Mode Interference  
Hongwei Yuan;Keren Dai;Qingyu Li;Haojie Li;Hejuan Chen;He Zhang  
Publication Year: 2021,Page(s):3679 - 3683  
[HTML](#)

Non-Linear Self-Interference Cancellation for Full-Duplex Transceivers Based on Hammerstein-Wiener Model  
Visa Tapio;Markku Juntti  
Publication Year: 2021,Page(s):3684 - 3688  
[HTML](#)

Spatially-Correlated Massive MIMO Channel: An Iterative Estimation Algorithm  
Mhammad B. Hmayed;Ali H. Bastami  
Publication Year: 2021,Page(s):3689 - 3693  
[HTML](#)

Target Recognition in Turbulent Diffusion Channels  
Dechang Zhu;Xu Bao;Wence Zhang  
Publication Year: 2021,Page(s):3694 - 3698  
[HTML](#)

Active Reconfigurable Intelligent Surfaces-Aided Wireless Communication System  
Majid H. Khoshafa;Telex M. N. Ngatched;Mohamed H. Ahmed;Alain R. Ndjiongue  
Publication Year: 2021,Page(s):3699 - 3703  
[HTML](#)

Closed-Form Differential Hierarchical Demodulator of 2-Source Hierarchical-MAC Channel  
Petr Hron;Jan Sykora  
Publication Year: 2021,Page(s):3704 - 3708  
[HTML](#)

Hardware-Aware BeamSpace Precoding for All-Digital mmWave Massive MU-MIMO  
Emre Gönültaş;Sueda Taner;Alexandra Gallyas-Sanhueza;Seyed Hadi Mirfarshbafan;Christoph Studer  
Publication Year: 2021,Page(s):3709 - 3713  
[HTML](#)

MPSK Orthogonal Coset Identification for Massive RFID Network  
Luyang Han;Jin Qi;Xie Xie;Chen He;Z. Jane Wang  
Publication Year: 2021,Page(s):3714 - 3718  
[HTML](#)

Rain Attenuation Prediction Model for Terrestrial Links Using Gaussian Process Regression  
Ki Joung Jang;Youngkeun Yoon;Junseok Kim;Jong Ho Kim;Ganguk Hwang  
Publication Year: 2021,Page(s):3719 - 3723  
[HTML](#)

Topological Interference Management With Inaccurate Topology of Network  
Xue Jiang;Baoyu Zheng;Wei-Ping Zhu;Lei Wang;Xiaoyun Hou  
Publication Year: 2021,Page(s):3724 - 3728  
[HTML](#)

Training-Based Hybrid Precoding Scheme for Multiuser Massive MIMO-OFDM  
Yiwei Sun;Hua Wang;Minghao Yuan;Tianye Zhu;Agnes Kawoya  
Publication Year: 2021,Page(s):3729 - 3732  
[HTML](#)

A Distributed Device Selection Method to Minimize AoI in RF-Charging Networks  
Lei Zhang;Kwan-Wu Chin  
Publication Year: 2021,Page(s):3733 - 3737  
[HTML](#)

FDCR: A Full-Duplex Collision Resolution Scheme for Next-Generation Wireless LANs  
Hyeongwoo Jo;Hyeongtae Ahn;Eunhyun Kim;Young-Joo Suh  
Publication Year: 2021,Page(s):3738 - 3742  
[HTML](#)

Reliability and Energy Consumption of LoRa With Bidirectional Traffic  
Siddhartha S. Borkotoky; Jorge F. Schmidt; Udo Schilcher; Prameela Battula; Sonu Rathi  
Publication Year: 2021, Page(s): 3743 - 3747  
[HTML](#)

IEEE Communications Society  
Publication Year: 2021, Page(s): C3 - C3

RWP+: A New Random Waypoint Model for High-Speed Mobility  
Hussein A. Ammar; Raviraj Adve; Shahram Shahbazpanahi; Gary Boudreau; Kothapalli Venkata Srinivas  
Publication Year: 2021, Page(s): 3748 - 3752  
[HTML](#)

# IEEE COMMUNICATIONS SURVEYS & TUTORIALS

A PUBLICATION OF THE IEEE COMMUNICATIONS SOCIETY



FOURTH QUARTER 2021

VOLUME 23

NUMBER 4

ICSTCF

(ISSN 1553-877X)

[Table of contents](#)

Publication Year: 2021,Page(s):C1 - C4

[IEEE Communications Surveys and Tutorials](#)

Dusit Tao Niyato

Publication Year: 2021,Page(s):2058 - 2063

[HTML](#)

[Leveraging Deep Reinforcement Learning for Traffic Engineering: A Survey](#)

Yang Xiao;Jun Liu;Jiawei Wu;Nirwan Ansari

Publication Year: 2021,Page(s):2064 - 2097

[HTML](#)

[Big Data Resource Management & Networks: Taxonomy, Survey, and Future Directions](#)

Feras M. Awaysheh;Mamoun Alazab;Sahil Garg;Dusit

Niyato;Christos Verikoukis

Publication Year: 2021,Page(s):2098 - 2130

[HTML](#)

[Resource Scheduling in Edge Computing: A Survey](#)

Quyuan Luo;Shihong Hu;Changle Li;Guanghui Li;Weisong Shi

Publication Year: 2021,Page(s):2131 - 2165

[HTML](#)

[Content Delivery Network Security: A Survey](#)

Milad Ghaznavi;Elaheh Jalalpour;Mohammad A. Salahuddin;Raouf

Boutaba;Daniel Migault;Stere Preda

Publication Year: 2021,Page(s):2166 - 2190

[HTML](#)

[A Survey of Decentralizing Applications via Blockchain: The 5G and Beyond Perspective](#)

Kaifeng Yue;Yuanyuan Zhang;Yanru Chen;Yang Li;Lian

Zhao;Chunming Rong;Liangyin Chen

Publication Year: 2021,Page(s):2191 - 2217

[HTML](#)

[Quantum Internet—Applications, Functionalities, Enabling Technologies, Challenges, and Research Directions](#)

Amoldeep Singh;Kapal Dev;Harun Siljak;Hem Dutt Joshi;Maurizio Magarini

Publication Year: 2021,Page(s):2218 - 2247

[HTML](#)

[A Survey on Industrial Control System Testbeds and Datasets for Security Research](#)

Mauro Conti;Denis Donadel;Federico Turrin

Publication Year: 2021,Page(s):2248 - 2294

[HTML](#)

[SIMBox Bypass Frauds in Cellular Networks: Strategies, Evolution, Detection, and Future Directions](#)

Anne Josiane Kouam;Aline Carneiro Viana;Alain Tchana

Publication Year: 2021,Page(s):2295 - 2323

[HTML](#)

[De-Anonymisation Attacks on Tor: A Survey](#)

Ishan Karunanayake;Nadeem Ahmed;Robert Malaney;Rafiqul

Islam;Sanjay K. Jha

Publication Year: 2021,Page(s):2324 - 2350

[HTML](#)

[A Survey of Honeypots and Honeynets for Internet of Things, Industrial Internet of Things, and Cyber-Physical Systems](#)

Javier Franco;Ahmet Aris;Berk Canberk;A. Selcuk Uluagac

Publication Year: 2021,Page(s):2351 - 2383

[HTML](#)

[Security and Privacy for 6G: A Survey on Prospective Technologies and Challenges](#)

Van-Linh Nguyen;Po-Ching Lin;Bo-Chao Cheng;Ren-Hung

Hwang;Ying-Dar Lin

Publication Year: 2021,Page(s):2384 - 2428

[HTML](#)

[Thirty Years of DNS Insecurity: Current Issues and Perspectives](#)

Giovanni Schmid

Publication Year: 2021,Page(s):2429 - 2459

[HTML](#)

[A Survey of Defensive Deception: Approaches Using Game Theory and Machine Learning](#)

Mu Zhu;Ahmed H. Anwar;Zelin Wan;Jin-Hee Cho;Charles A.

Kamhoua;Munindar P. Singh

Publication Year: 2021,Page(s):2460 - 2493

[HTML](#)

[Online Advertising Security: Issues, Taxonomy, and Future Directions](#)

Zahra Pooranian;Mauro Conti;Hamed Haddadi;Rahim Tafazolli

Publication Year: 2021,Page(s):2494 - 2524

[HTML](#)

[A Comparative Study on Cyber Threat Intelligence: The Security Incident Response Perspective](#)

Daniel Schlette;Marco Caselli;Günther Pernul

Publication Year: 2021,Page(s):2525 - 2556

[HTML](#)

[Towards Low-Latency Service Delivery in a Continuum of Virtual Resources: State-of-the-Art and Research Directions](#)

José Santos;Tim Wauters;Bruno Volckaert;Filip De Turck

Publication Year: 2021,Page(s):2557 - 2589

[HTML](#)



[Survey on Placement Methods in the Edge and Beyond](#)  
Balázs Sonkoly;János Czentye;Márk Szalay;Balázs Németh;László Toka  
Publication Year: 2021,Page(s):2590 - 2629  
[HTML](#)

[Underwater Optical Wireless Communications in Swarm Robotics: A Tutorial](#)  
Peter Adam Hoehner;Jan Sticklus;Andrej Harlakin  
Publication Year: 2021,Page(s):2630 - 2659  
[HTML](#)

[Applications of Game Theory in Vehicular Networks: A Survey](#)  
Zemin Sun;Yanheng Liu;Jian Wang;Guofa Li;Carie Anil;Keqiang Li;Xinyu Guo;Geng Sun;Daxin Tian;Dongpu Cao  
Publication Year: 2021,Page(s):2660 - 2710  
[HTML](#)

[Hybrid Automatic Repeat Request \(HARQ\) in Wireless Communications Systems and Standards: A Contemporary Survey](#)  
Ashfaq Ahmed;Arafat Al-Dweik;Youssef Iraqi;Husameldin Mukhtar;Muhammad Naeem;Ekram Hossain  
Publication Year: 2021,Page(s):2711 - 2752  
[HTML](#)

[Stochastic Geometry Analysis of Spatial-Temporal Performance in Wireless Networks: A Tutorial](#)  
Xiao Lu;Mohammad Salehi;Martin Haenggi;Ekram Hossain;Hai Jiang  
Publication Year: 2021,Page(s):2753 - 2801  
[HTML](#)

[Fast, Reliable, and Secure Drone Communication: A Comprehensive Survey](#)  
Vikas Hassija;Vinay Chamola;Adhar Agrawal;Adit Goyal;Nguyen Cong Luong;Dusit Niyato;Fei Richard Yu;Mohsen Guizani  
Publication Year: 2021,Page(s):2802 - 2832  
[HTML](#)

[A Survey of Wireless Networks for Future Aerial Communications \(FACOM\)](#)  
Aygün Baltacı;Ergin Dinc;Mustafa Ozger;Abdulrahman Alabbasi;Cicek Cavdar;Dominic Schupke  
Publication Year: 2021,Page(s):2833 - 2884  
[HTML](#)

# IEEE TRANSACTIONS ON WIRELESS COMMUNICATIONS

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



NOVEMBER 2021

VOLUME 20

NUMBER 11

ITWCAX

(ISSN 1536-1276)

## [Table of contents](#)

Publication Year: 2021,Page(s):C1 - 6971

## [IEEE Transactions on Wireless Communications](#)

Publication Year: 2021,Page(s):C2 - C2

## [Predictive Wireless Based Status Update for Communication-Agnostic Sampling](#)

Zhiyuan Jiang;Wei Zhang;Zixu Cao;Shan Cao;Shunqing Zhang;Shugong Xu

Publication Year: 2021,Page(s):6972 - 6986

[HTML](#)

## [Millimeter-Wave Beam Selection in Time-Varying Channels With User Orientation Changes](#)

Ashok Kumar Reddy Chavva;Neelesh B. Mehta

Publication Year: 2021,Page(s):6987 - 7000

[HTML](#)

## [Efficient Performance Bound for Channel Estimation in Massive MIMO Receiver](#)

Alexander Osinsky;Andrey Ivanov;Dmitry Yarotsky

Publication Year: 2021,Page(s):7001 - 7010

[HTML](#)

## [Impact of Hardware Impairment and Co-Channel Interference on Security-Reliability Trade-Off for Wireless Sensor Networks](#)

Bin Li;Yulong Zou;Jia Zhu;Weifeng Cao

Publication Year: 2021,Page(s):7011 - 7025

[HTML](#)

## [Wireless Covert Communications Aided by Distributed Cooperative Jamming Over Slow Fading Channels](#)

Tong-Xing Zheng;Ziteng Yang;Chao Wang;Zan Li;Jinhong Yuan;Xiaohong Guan

Publication Year: 2021,Page(s):7026 - 7039

[HTML](#)

## [Data-Driven Beam Management With Angular Domain Information for mmWave UAV Networks](#)

Wenjun Xu;Yongning Ke;Chia-Han Lee;Hui Gao;Zhiyong Feng;Ping Zhang

Publication Year: 2021,Page(s):7040 - 7056

[HTML](#)

## [Exploiting Interactions of Multiple Interference for Cooperative Interference Alignment](#)

Zhao Li;Jun Li;Yinghou Liu;Xiujian Liang;Kang G. Shin;Zheng Yan;Hui Li

Publication Year: 2021,Page(s):7072 - 7085

[HTML](#)

## [Unsupervised Deep Learning for Massive MIMO Hybrid Beamforming](#)

Hamed Hojatian;Jérémy Nadal;Jean-François Frigon;François Leduc-Primeau

Publication Year: 2021,Page(s):7086 - 7099

[HTML](#)

## [On the Secrecy Performance of Interference Exploitation With PSK: A Non-Gaussian Signaling Analysis](#)

Abdelhamid Salem;Christos Masouros;Kai-Kit Wong

Publication Year: 2021,Page(s):7100 - 7117

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

[HTML](#)

## [Sparse Channel Estimation via Hierarchical Hybrid Message Passing for Massive MIMO-OFDM Systems](#)

Xiaofeng Liu;Wenjin Wang;Xiaohang Song;Xiqi Gao;Gerhard Fettweis

Publication Year: 2021,Page(s):7118 - 7134

[HTML](#)

## [Deep Reinforcement Learning-Based Hierarchical Time Division Duplexing Control for Dense Wireless and Mobile Networks](#)

Van Dat Tuong;Nhu-Ngoc Dao;Wonjong Noh;Sungrae Cho

Publication Year: 2021,Page(s):7135 - 7150

[HTML](#)

## [Deterministic Pilot Design and Channel Estimation for Downlink Massive MIMO-OTFS Systems in Presence of the Fractional Doppler](#)

Ding Shi;Wenjin Wang;Li You;Xiaohang Song;Yi Hong;Xiqi Gao;Gerhard Fettweis

Publication Year: 2021,Page(s):7151 - 7165

[HTML](#)

## [IRS-Assisted Massive MIMO-NOMA Networks: Exploiting Wave Polarization](#)

Arthur Sousa de Sena;Pedro H. J. Nardelli;Daniel Benevides da Costa;Francisco Rafael Marques Lima;Liang Yang;Petar Popovski;Zhiguo Ding;Constantinos B. Papadias

Publication Year: 2021,Page(s):7166 - 7183

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

[HTML](#)

## [Non-Orthogonal Multiple Access \(NOMA\) With Multiple Intelligent Reflecting Surfaces](#)

Yanyu Cheng;Kwok Hung Li;Yuanwei Liu;Kah Chan Teh;George K. Karagiannidis

Publication Year: 2021,Page(s):7184 - 7195

[HTML](#)

Hybrid Active/Passive Wireless Network Aided by Intelligent Reflecting Surface: System Modeling and Performance Analysis  
Jiangbin Lyu;Rui Zhang  
Publication Year: 2021,Page(s):7196 - 7212  
[HTML](#)

Underlay Radar-Massive MIMO Spectrum Sharing: Modeling Fundamentals and Performance Analysis  
RaghuNandan M. Rao;Harpreet S. Dhillon;Vuk Marojevic;Jeffrey H. Reed  
Publication Year: 2021,Page(s):7213 - 7229  
[HTML](#)

A Low-Latency MPTCP Scheduler for Live Video Streaming in Mobile Networks  
Yitao Xing;Kaiping Xue;Yuan Zhang;Jiangping Han;Jian Li;Jianqing Liu;Ruidong Li  
Publication Year: 2021,Page(s):7230 - 7242  
[HTML](#)

Exploiting Coding and Recommendation to Improve Cache Efficiency of Reliability-Aware Wireless Edge Caching Networks  
Yaru Fu;Quan Yu;Angus K. Y. Wong;Zheng Shi;Hong Wang;Tony Q. S. Quek  
Publication Year: 2021,Page(s):7243 - 7256  
Cited by: [Papers \(1\)](#)  
[HTML](#)

Optimizing AI Service Placement and Resource Allocation in Mobile Edge Intelligence Systems  
Zehong Lin;Suzhi Bi;Ying-Jun Angela Zhang  
Publication Year: 2021,Page(s):7257 - 7271  
[HTML](#)

TSOR: Thompson Sampling-Based Opportunistic Routing  
Zhiming Huang;Yifan Xu;Jianping Pan  
Publication Year: 2021,Page(s):7272 - 7285  
[HTML](#)

Joint Power Allocation and Passive Beamforming Design for IRS-Assisted Physical-Layer Service Integration  
Boyu Ning;Zhi Chen;Zhongbao Tian;Xiaomei Wang;Cunhua Pan;Jun Fang;Shaoqian Li  
Publication Year: 2021,Page(s):7286 - 7301  
[HTML](#)

Power Allocation and Parameter Estimation for Multipath-Based 5G Positioning  
Anastasios Kakkavas;Henk Wymeersch;Gonzalo Seco-Granados;Mario H. Castañeda García;Richard A. Stirling-Gallacher;Josef A. Nossek  
Publication Year: 2021,Page(s):7302 - 7316  
Cited by: [Papers \(1\)](#)  
[HTML](#)

Base Station Coordination Scheme for Multi-Tier Ultra-Dense Networks  
Sudarshan Mukherjee;Dongsun Kim;Jemin Lee  
Publication Year: 2021,Page(s):7317 - 7332  
[HTML](#)

Linear and Deep Neural Network-Based Receivers for Massive MIMO Systems With One-Bit ADCs  
Ly V. Nguyen;A. Lee Swindlehurst;Duy H. N. Nguyen  
Publication Year: 2021,Page(s):7333 - 7345  
Cited by: [Papers \(2\)](#)  
[HTML](#)

Mobility Management for Blockchain-Based Ultra-Dense Edge Computing: A Deep Reinforcement Learning Approach  
Haibin Zhang;Rong Wang;Wen Sun;Huanlei Zhao  
Publication Year: 2021,Page(s):7346 - 7359  
[HTML](#)

Improving Cell-Free Massive MIMO Networks Performance: A User Scheduling Approach  
Juwendo Denis;Mohamad Assaad  
Publication Year: 2021,Page(s):7360 - 7374  
[HTML](#)

Channel Capacity of an Asymmetric Constellation in Rayleigh Fading With Noncoherent Energy Detection  
Ranjan K. Mallik;Ross Murch  
Publication Year: 2021,Page(s):7375 - 7388  
[HTML](#)

Performance Analysis and Comparison of Clipped and Filtered OFDM Systems With Iterative Distortion Recovery Techniques  
Ying Sun;Hideki Ochiai  
Publication Year: 2021,Page(s):7389 - 7403  
[HTML](#)

Stochastic Geometry Analysis of User Mobility in RF/VLC Hybrid Networks  
Rabe Arshad;Lutz Lampe  
Publication Year: 2021,Page(s):7404 - 7419  
Cited by: [Papers \(1\)](#)  
[HTML](#)

Adaptive Transmission With Frequency-Domain Precoding and Linear Equalization Over Fast Fading Channels  
Hongyang Zhang;Xiaoqing Huang;J. Andrew Zhang  
Publication Year: 2021,Page(s):7420 - 7430  
[HTML](#)

Cell-Edge Detection via Selective Cooperation and Generalized Canonical Correlation  
Mohamed Salah Ibrahim;Ahmed S. Zamzam;Aritra Konar;Nicholas D. Sidiropoulos  
Publication Year: 2021,Page(s):7431 - 7444  
[HTML](#)

Dual-UAV Enabled Secure Data Collection With Propulsion Limitation  
Ran Zhang;Xiaowei Pang;Weidang Lu;Nan Zhao;Yunfei Chen;Dusit Niyato  
Publication Year: 2021,Page(s):7445 - 7459  
[HTML](#)

Interference Alignment Meets Multi-Cell Multi-User Massive FD-MIMO Systems in DoA-Based Precoding  
Nan Qu;Lingjia Liu;Rubayet Shafin;Bingbing Li;Mingqian Liu;Fengkui Gong  
Publication Year: 2021,Page(s):7460 - 7474  
[HTML](#)

Performance Analysis of Clustered Wireless-Powered Ad Hoc Networks via  $\beta$ -Ginibre Point Processes  
Chao Zhang;Fangzhou Yu;Zhengdao Wang;Gangming Lyu  
Publication Year: 2021,Page(s):7475 - 7489  
[HTML](#)

Performance Analysis and Waveform Optimization of Integrated FD-MIMO Radar-Communication Systems  
Xufeng Zhou;Lan Tang;Yechao Bai;Ying-Chang Liang  
Publication Year: 2021,Page(s):7490 - 7502  
[HTML](#)

[Deep Learning-Based Cellular Random Access Framework](#)  
Han Seung Jang;Hoon Lee;Tony Q. S. Quek;Hyundong Shin  
Publication Year: 2021,Page(s):7503 - 7518  
[HTML](#)

[Lyapunov-Guided Deep Reinforcement Learning for Stable Online Computation Offloading in Mobile-Edge Computing Networks](#)  
Suzhi Bi;Liang Huang;Hui Wang;Ying-Jun Angela Zhang  
Publication Year: 2021,Page(s):7519 - 7537  
[HTML](#)

[A Joint Optimization Framework for Network Deployment and Adaptive User Assignment in Indoor Millimeter Wave Networks](#)  
Shubhajeet Chatterjee;Mohammad J. Abdel-Rahman;Allen B. MacKenzie  
Publication Year: 2021,Page(s):7538 - 7554  
[HTML](#)

[Leveraging Coupled BBR and Adaptive Packet Scheduling to Boost MPTCP](#)  
Jiangping Han;Kaiping Xue;Yitao Xing;Jian Li;Wenjia Wei;David S. L. Wei;Guoliang Xue  
Publication Year: 2021,Page(s):7555 - 7567  
[HTML](#)

[Multi Direction-of-Arrival Tracking Using Rigid and Flexible Antenna Arrays](#)  
Zhuqing Tang;Athanasios Manikas  
Publication Year: 2021,Page(s):7568 - 7580  
[HTML](#)

[MIMO Radar Aided mmWave Time-Varying Channel Estimation in MU-MIMO V2X Communications](#)  
Sai Huang;Meng Zhang;Yicheng Gao;Zhiyong Feng  
Publication Year: 2021,Page(s):7581 - 7594  
[HTML](#)

[Reconfigurable Intelligent Surface Enabled Federated Learning: A Unified Communication-Learning Design Approach](#)  
Hang Liu;Xiaojun Yuan;Ying-Jun Angela Zhang  
Publication Year: 2021,Page(s):7595 - 7609  
[HTML](#)

[Deep Reinforcement Learning-Based Resource Allocation in Cooperative UAV-Assisted Wireless Networks](#)  
Phuong Luong;François Gagnon;Le-Nam Tran;Fabrice Labeau  
Publication Year: 2021,Page(s):7610 - 7625  
[HTML](#)

[Transmit Power Pool Design for Grant-Free NOMA-IoT Networks via Deep Reinforcement Learning](#)  
Muhammad Fayaz;Wenqiang Yi;Yuanwei Liu;Arumugam Nallanathan  
Publication Year: 2021,Page(s):7626 - 7641  
[HTML](#)

[Adaptive Compressed Spectrum Sensing for Multiband Signals](#)  
Jian Yang;Zihang Song;Yue Gao;Xuemei Gu;Zhiyong Feng  
Publication Year: 2021,Page(s):7642 - 7654  
[HTML](#)

[AI-Aided Online Adaptive OFDM Receiver: Design and Experimental Results](#)  
Peiwen Jiang;Tianqi Wang;Bin Han;Xuanxuan Gao;Jing Zhang;Chao-Kai Wen;Shi Jin;Geoffrey Ye Li  
Publication Year: 2021,Page(s):7655 - 7668  
[HTML](#)

[Deep Learning-Based Antenna Selection and CSI Extrapolation in Massive MIMO Systems](#)  
Bo Lin;Feifei Gao;Shun Zhang;Ting Zhou;Ahmed Alkhateeb  
Publication Year: 2021,Page(s):7669 - 7681  
Cited by: [Papers \(1\)](#)  
[HTML](#)

[Adaptive Irregular Constellations for Full-Duplex Relaying With Residual Self-Interference](#)  
Mehmet Cagri Ilter;Risto Wichman;Jyri Hämäläinen  
Publication Year: 2021,Page(s):7682 - 7693  
[HTML](#)

[Grant-Free Access via Bilinear Inference for Cell-Free MIMO With Low-Coherence Pilots](#)  
Hiroki Iimori;Takumi Takahashi;Koji Ishibashi;Giuseppe Thadeu Freitas de Abreu;Wei Yu  
Publication Year: 2021,Page(s):7694 - 7710  
[HTML](#)

[IEEE Communications Society](#)  
Publication Year: 2021,Page(s):C3 - C3

# IEEE WIRELESS COMMUNICATIONS LETTERS

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



NOVEMBER 2021

VOLUME 10

NUMBER 11

IWCLAF

ISSN (2162-2345)

## Table of contents

Publication Year: 2021,Page(s):C1 - 2334

## IEEE Wireless Communications Letters

Publication Year: 2021,Page(s):C2 - C2

## Pseudo Noise Subspace Based DOA Estimation for Unfolded Coprime Linear Arrays

Xiangdong Huang;Xiaoqing Yang;Lu Cao;Wei Lu

Publication Year: 2021,Page(s):2335 - 2339

HTML

## Resource Allocation for Deterministic Delay in Wireless Control Networks

Lanjing Chen;Jintao Zhou;Zhiyong Chen;Ning Liu;Meixia Tao

Publication Year: 2021,Page(s):2340 - 2344

HTML

## Practical RIS-Aided Coded Systems: Joint Precoding and Passive Beamforming

Mingyang Yue;Lei Liu;Xiaojun Yuan

Publication Year: 2021,Page(s):2345 - 2349

HTML

## A Multi-Leader Multi-Follower Stackelberg Game for Coalition-Based UAV MEC Networks

Jiaxin Chen;Qihui Wu;Yuhua Xu;Nan Qi;Tao Fang;Luliang Jia;Chao Dong

Publication Year: 2021,Page(s):2350 - 2354

HTML

## Joint Design of Fronthaul and Access Links in Massive MIMO Multi-UAV-Enabled CRANs

Yingjia Huang;Aissa Ikhlef

Publication Year: 2021,Page(s):2355 - 2359

HTML

## Cooperative Multi-RIS Communications for Wideband mmWave MISO-OFDM Systems

Muxin He;Wei Xu;Hong Shen;Guo Xie;Chunming Zhao;Marco Di Renzo

Publication Year: 2021,Page(s):2360 - 2364

HTML

## Blockwise Phase Rotation-Aided Analog Transmit Beamforming for 5G mmWave Systems

Md. Abdul Latif Sarker;Igbafe Orikuhmi;Dong Seog Han;Sunwoo Kim

Publication Year: 2021,Page(s):2365 - 2368

HTML

## Blind Modulation Identification Algorithm For Two-Path Successive Relaying Systems

Mohamed Marey;Hala Mostafa;Saleh A. Alshebeili;Octavia A. Dobre

Publication Year: 2021,Page(s):2369 - 2373

HTML

## IRS-Assisted Ambient Backscatter Communications Utilizing Deep Reinforcement Learning

Xiaolun Jia;Xiangyun Zhou

Publication Year: 2021,Page(s):2374 - 2378

HTML

## Cooperative Reflection Design With Timing Offsets in Distributed Multi-RIS Communications

Yaqiong Zhao;Wei Xu;Huan Sun;Derrick Wing Kwan Ng;Xiaohu You

Publication Year: 2021,Page(s):2379 - 2383

HTML

## Tractable Modelling and Robust Coordinated Beamforming Design With Partially Accurate CSI

Danyang Wu;Hongtao Zhang

Publication Year: 2021,Page(s):2384 - 2387

HTML

## Beam Pointing Optimization Based Downlink Interference Mitigation Technique Between NGSO Satellite Systems

Liang Yin;Ruonan Yang;Yuanzhou Yang;Li Deng;Shufang Li

Publication Year: 2021,Page(s):2388 - 2392

HTML

## Connected Dominating Set Enabled On-Demand Routing (CDS-OR) for Wireless Mesh Networks

Muhammad Umar Farooq;Muhammad Zeeshan

Publication Year: 2021,Page(s):2393 - 2397

HTML

A Novel Design of RIS for Enhancing the Physical Layer Security for RIS-Aided NOMA Networks  
Zhiqing Tang;Tianwei Hou;Yuanwei Liu;Jiankang Zhang;Caijun Zhong  
Publication Year: 2021,Page(s):2398 - 2401  
[HTML](#)

A Generalized Channel Dataset Generator for 5G New Radio Systems Based on Ray-Tracing  
Yibin Zhang;Jinlong Sun;Guan Gui;Haris Gacanin;Hikmet Sari  
Publication Year: 2021,Page(s):2402 - 2406  
[HTML](#)

Low-Complexity Distance-Based Scheduling for Multi-User XL-MIMO Systems  
José P. González-Coma;F. Javier López-Martínez;Luis Castedo  
Publication Year: 2021,Page(s):2407 - 2411  
[HTML](#)

Swap-Based Load Balancing for Fairness in Radio Access Networks  
S Saibharath;Sudeepta Mishra;Chittaranjan Hota  
Publication Year: 2021,Page(s):2412 - 2416  
[HTML](#)

Automatic Modulation Classification Using Involution Enabled Residual Networks  
Hao Zhang;Lu Yuan;Guangyu Wu;Fuhui Zhou;Qihui Wu  
Publication Year: 2021,Page(s):2417 - 2420  
[HTML](#)

Near-Optimal Low-Complexity Harmonic Receiver for Unipolar-FSK  
A. W. Azim;M. J. Khan;O. De Wulf;Y. Le Guennec;G. Maury;L. Ros  
Publication Year: 2021,Page(s):2421 - 2425  
[HTML](#)

Downlink Multi-Carrier NOMA With Opportunistic Bandwidth Allocations  
Haitham Al-Obiedollah;Kanapathippillai Cumanan;Haythem Bany Salameh;Gaojie Chen;Zhiguo Ding;Octavia A. Dobre  
Publication Year: 2021,Page(s):2426 - 2429  
[HTML](#)

Performance Analysis of Gamma/M/1 Model for IoT-Based Sensor Data Traffic  
Shachi Sharma;Prakash Datt Bhatt  
Publication Year: 2021,Page(s):2430 - 2434  
[HTML](#)

DOA Estimation With Non-Uniform Linear Arrays: A Phase-Difference Projection Approach  
Hui Chen;Tarig Ballal;Tareq Y. Al-Naffouri  
Publication Year: 2021,Page(s):2435 - 2439  
[HTML](#)

CSIT-Free Model Aggregation for Federated Edge Learning via Reconfigurable Intelligent Surface  
Hang Liu;Xiaojun Yuan;Ying-Jun Angela Zhang  
Publication Year: 2021,Page(s):2440 - 2444  
[HTML](#)

Light Exact Expressions for the Sum of Weibull Random Variables  
Fernando Darío Almeida García;Francisco Raimundo Albuquerque Parente;Gustavo Fraidenraich;José Cândido Silveira Santos Filho  
Publication Year: 2021,Page(s):2445 - 2449  
[HTML](#)

Resource Allocation for IRS-Assisted Wireless Powered Communication Networks  
Huanqing Cao;Zhendong Li;Wen Chen  
Publication Year: 2021,Page(s):2450 - 2454  
[HTML](#)

Minimization of Losses and Rate Matching in Satellite Networks With One to Many Pairings  
Anargyros J. Roumeliotis;Christos N. Efrem;Charilaos I. Kourogiorgas;Athanasios D. Panagopoulos  
Publication Year: 2021,Page(s):2455 - 2458  
[HTML](#)

Multi-User Joint Maximum-Likelihood Detection in Uplink NOMA-IoT Networks: Removing the Error Floor  
Hichem Semira;Ferdi Kara;Hakan Kaya;Halim Yanikomeroglu  
Publication Year: 2021,Page(s):2459 - 2463  
[HTML](#)

Energy-Aware Concurrent Data Aggregation Scheduling for Wireless Powered IoT Leveraging Hypergraph Theory  
Xianlong Jiao;Wei Lou;Songtao Guo;Yong Li;Junmei Yao;Fuqiang Gu;Junchao Ma  
Publication Year: 2021,Page(s):2464 - 2468  
[HTML](#)

Multi-User Cooperative Computation Framework Based on Bertrand Game  
Nan Zhang;Guopeng Zhang;Kezhi Wang;Kun Yang  
Publication Year: 2021,Page(s):2469 - 2473  
[HTML](#)

One-Bit Spectrum Sensing Based on Statistical Covariances: Eigenvalue Moment Ratio Approach  
Yuan Zhao;Xiaochuan Ke;Bo Zhao;Yuhang Xiao;Lei Huang  
Publication Year: 2021,Page(s):2474 - 2478  
[HTML](#)

Secure Transmission in Massive MIMO System With Specular Component-Based Beamforming and Artificial Noise Over Ricean Fading Channel  
Aiyan Qu;Xianyu Zhang;Kang An;Gan Zheng;Symeon Chatzinotas  
Publication Year: 2021,Page(s):2479 - 2483  
[HTML](#)

A Low-Complexity Multicast Scheduling for D2D-Aided F-RANs Using Network Coding  
Mohammed S. Al-Abiad;Md. Jahangir Hossain  
Publication Year: 2021,Page(s):2484 - 2488  
[HTML](#)

Distributed Beam Training for Intelligent Reflecting Surface Enabled Multi-Hop Routing  
Weidong Mei;Rui Zhang  
Publication Year: 2021,Page(s):2489 - 2493  
[HTML](#)

Wideband Underwater Wireless Optical Communication Based on Multi-Carrier Autoencoder  
Cong Zou;Fang Yang;Jian Song;Zhu Han  
Publication Year: 2021,Page(s):2494 - 2498  
[HTML](#)

Age of Information With Joint Packet Coding in Industrial IoT  
Tse-Tin Chan;Haoyuan Pan;Jiaxin Liang  
Publication Year: 2021,Page(s):2499 - 2503  
[HTML](#)



An Enhanced Spectrum Reservation Framework for Heterogeneous Users in CR-Enabled IoT Networks  
Abd Ullah Khan; Muhammad Tanveer; Wali Ullah Khan; Jamel Nebhen; Xingwang Li; Ming Zeng; Octavia A. Dobre  
Publication Year: 2021, Page(s): 2504 - 2508  
Cited by: Papers (1)  
[HTML](#)

Automatic Modulation Classification Based on Cauchy-Score Constellation and Lightweight Network Under Impulsive Noise  
Shengyang Luan; Yinrui Gao; Jiachen Zhou; Zhaojun Zhang  
Publication Year: 2021, Page(s): 2509 - 2513  
[HTML](#)

Two-Dimensional Convolutional Neural Network-Based Signal Detection for OTFS Systems  
Yosef K. Enku; Baoming Bai; Fei Wan; Chala U. Guyo; Isayiyas N. Tiba; Chungqiong Zhang; Shuangyang Li  
Publication Year: 2021, Page(s): 2514 - 2518  
[HTML](#)

Channel Estimation for Intelligent Reflecting Surface Assisted Backscatter Communication  
Samith Abeywickrama; Changsheng You; Rui Zhang; Chau Yuen  
Publication Year: 2021, Page(s): 2519 - 2523  
[HTML](#)

A Data-Independent Radio Frequency Fingerprint Extraction Scheme  
Yang Yang; Aiqun Hu; Yuexiu Xing; Jiabao Yu; Zhen Zhang  
Publication Year: 2021, Page(s): 2524 - 2527  
[HTML](#)

Outage Probability and Throughput Analysis of UAV-Assisted Rate-Splitting Multiple Access  
Sandeep Kumar Singh; Kamal Agrawal; Keshav Singh; Chih-Peng Li  
Publication Year: 2021, Page(s): 2528 - 2532  
[HTML](#)

User Grouping and Reflective Beamforming for IRS-Aided URLLC  
Hailiang Xie; Jie Xu; Ya-Feng Liu; Liang Liu; Derrick Wing Kwan Ng  
Publication Year: 2021, Page(s): 2533 - 2537  
[HTML](#)

A Novel Deep Learning-Based IoT Device Transmission Interval Management Scheme for Enhanced Scalability in LoRa Networks  
Sanghyun Lee; Joohyung Lee; Jungyeon Hwang; Jun Kyun Choi  
Publication Year: 2021, Page(s): 2538 - 2542  
[HTML](#)

A Tensor-Based Joint AoA and ToF Estimation Method for Wi-Fi Systems  
Bobai Zhao; Keke Hu; Yubing Gong; Yuan Shen  
Publication Year: 2021, Page(s): 2543 - 2546  
[HTML](#)

Enhancing Indoor mmWave Wireless Coverage: Small-Cell Densification or Reconfigurable Intelligent Surfaces Deployment?  
Zeyang Li; Haonan Hu; Jiliang Zhang; Jie Zhang  
Publication Year: 2021, Page(s): 2547 - 2551  
[HTML](#)

QoE-Based MEC-Assisted Predictive Adaptive Video Streaming for On-Road Driving Scenarios  
Wanting Yang; Xuefen Chi; Linlin Zhao; Zehui Xiong  
Publication Year: 2021, Page(s): 2552 - 2556  
[HTML](#)

Network Coding for  $K$ -Repetition in Grant-Free Random Access  
Jinho Choi; Jie Ding  
Publication Year: 2021, Page(s): 2557 - 2561  
[HTML](#)

Cost-Efficient RIS-Aided Channel Estimation via Rank-One Matrix Factorization  
Wei Zhang; Wee Peng Tay  
Publication Year: 2021, Page(s): 2562 - 2566  
[HTML](#)

DOA Estimation for Coprime Array With Mixed Noise Scenario via Phased Fractional Low-Order Moment  
Xudong Dong; Xiaofei Zhang; Jun Zhao; Meng Sun  
Publication Year: 2021, Page(s): 2567 - 2571  
[HTML](#)

Evolution Strategies for Lightwave Power Transfer Networks  
Thanh-Dat Le; Georges Kaddoum; Ha-Vu Tran; Chadi Abou-Rjeily  
Publication Year: 2021, Page(s): 2572 - 2576  
[HTML](#)

NOMA Computation Over Multi-Access Channels for Multimodal Sensing  
Michel Kulhandjian; Gunes Karabulut Kurt; Hovannes Kulhandjian; Halim Yanikomeroglu; Claude D'Amours  
Publication Year: 2021, Page(s): 2577 - 2581  
[HTML](#)

Deep Reinforcement Learning-Based Distributed Congestion Control in Cellular V2X Networks  
Joo-Young Choi; Han-Shin Jo; Cheol Mun; Jong-Gwan Yook  
Publication Year: 2021, Page(s): 2582 - 2586  
[HTML](#)

On the Outage Performance of Overlay Cognitive STBC-NOMA System With Imperfect SIC  
Shailendra Singh; Matadeen Bansal  
Publication Year: 2021, Page(s): 2587 - 2591  
[HTML](#)

Energy Minimization for IRS-Aided WPCNs With Non-Linear Energy Harvesting Model  
Piao Zeng; Qingqing Wu; Deli Qiao  
Publication Year: 2021, Page(s): 2592 - 2596  
[HTML](#)

Adaptive Channel Estimation for OFDM Systems Using CIR Length Estimate  
Hyung-Rae Park  
Publication Year: 2021, Page(s): 2597 - 2601  
[HTML](#)

Directional Target Localization in NLOS Environments Using RSS-TOA Combined Measurements  
Peiliang Zuo; Han Zhang; Chen Wang; Hua Jiang; Bin Pan  
Publication Year: 2021, Page(s): 2602 - 2606  
[HTML](#)

Asymptotic Achievability of the Cramér-Rao Lower Bound of Channel Estimation for Reconfigurable Intelligent Surface Aided Communication Systems  
Yiming Liu; Erwu Liu; Rui Wang; Zhu Han; Binyu Lu  
Publication Year: 2021, Page(s): 2607 - 2611  
[HTML](#)

IEEE Communications Society Information  
Publication Year: 2021, Page(s): C3 - C3

# 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

## November 2021

A Multi-Trip Task Assignment for Early Target Inspection in Squads of Aerial Drones

Novella Bartolini;Andrea Coletta;Gaia Maselli;Ala' Khalifeh

Publication Year: 2021,Page(s):3099 - 3116

Cited by: Papers (2)

HTML

Operation State Scheduling Towards Optimal Network Utility in RF-Powered Internet of Things

Songyuan Li;Shibo He;Kang Hu;Lingkun Fu;Shuo Chen;Jiming Chen

Publication Year: 2021,Page(s):3117 - 3130

HTML

The Untold Secrets of WiFi-Calling Services: Vulnerabilities, Attacks, and Countermeasures

Tian Xie;Guan-Hua Tu;Bangjie Yin;Chi-Yu Li;Chunyi Peng;Mi Zhang;Hui Liu;Xiaoming Liu

Publication Year: 2021,Page(s):3131 - 3147

Cited by: Papers (1)

HTML

Continuous Authentication Through Finger Gesture Interaction for Smart Homes Using WiFi

Hao Kong;Li Lu;Jiadi Yu;Yingying Chen;Feilong Tang

Publication Year: 2021,Page(s):3148 - 3162

HTML

Charging Task Scheduling for Directional Wireless Charger Networks

Haipeng Dai;Ke Sun;Alex X. Liu;Lijun Zhang;Jiaqi Zheng;Guihai Chen

Publication Year: 2021,Page(s):3163 - 3180

Cited by: Papers (1)

HTML

Fog Computing Empowered Data Dissemination in Software Defined Heterogeneous VANETs

Kai Liu;Ke Xiao;Penglin Dai;Victor C.S. Lee;Songtao Guo;Jiannong Cao

Publication Year: 2021,Page(s):3181 - 3193

Cited by: Papers (9)

HTML

QoS-Based Budget Constrained Stable Task Assignment in Mobile Crowdsensing

Fatih Yucel;Murat Yuksel;Eyuphan Bulut

Publication Year: 2021,Page(s):3194 - 3210

Cited by: Papers (7)

HTML

On Heterogeneous Sensing Capability for Distributed Rendezvous in Cognitive Radio Networks

Zhaoquan Gu;Yuexuan Wang;Tong Shen;Francis C.M. Lau

Publication Year: 2021,Page(s):3211 - 3226

Cited by: Papers (2)

HTML

RF-Pen: Practical Real-Time RFID Tracking in the Air

Haoyu Wang;Wei Gong

Publication Year: 2021,Page(s):3227 - 3238

Cited by: Papers (5)

HTML

The Paintbrush Coverage Problem

Scott C.-H. Huang;Elaine Y.-N. Sun;Hsiao-Chun Wu;Costas Busch

Publication Year: 2021,Page(s):3239 - 3250

HTML

Robust Video Broadcast for Users With Heterogeneous Resolution in Mobile Networks

Yongqiang Gui;Hancheng Lu;Feng Wu;Chang Wen Chen

Publication Year: 2021,Page(s):3251 - 3266

Cited by: Papers (3)

HTML

Low-Complexity Learning for Dynamic Spectrum Access in Multi-User Multi-Channel Networks

Sunjung Kang;Changhee Joo

Publication Year: 2021,Page(s):3267 - 3281

Cited by: Papers (1)

JOURNAL OF

# Optical Communications and Networking

## Front Cover

Publication Year: 2021,Page(s):C1 - C1

## Inside Front Cover

Publication Year: 2021,Page(s):C2 - C2

## Contents

Publication Year: 2021,Page(s):1 - 1

### Design and control of highly spectrally efficient photonic networks enabled by fiber-granular routing on overlaid ring-shaped topologies

Ryuta Shiraki;Yojiro Mori;Hiroshi Hasegawa;Ken-Ichi Sato;Paolo Monti

Publication Year: 2021,Page(s):233 - 243

### Zero touch provisioning compliant with authentications of IEEE PON packages A and B for SDN-enabled broadband access

Takahiro Suzuki;Yushi Koyasako;Keita Nishimoto;Kota Asaka;Takashi Yamada;Jun-ichi Kani;Tatsuya Shimada;Tomoaki Yoshida

Publication Year: 2021,Page(s):244 - 252

### Reconfiguring multicast sessions in elastic optical networks adaptively with graph-aware deep reinforcement learning

Xiaojian Tian;Baojia Li;Rentao Gu;Zuqing Zhu

Publication Year: 2021,Page(s):253 - 265

### Time-domain uplink synchronization method for a spectral efficient OFDMA-based PON

Reginaldo B. Nunes;Diogo V. N. Coelho;Gianni L. S.

Oliveira;Helder R. O. Rocha;Jair A. L. Silva;Marcelo E. V. Segatto

Publication Year: 2021,Page(s):266 - 275

### Dimensioning access link capacity for time-varying traffic with mixed packet streams and circuit connections

Junyi Shao;Shuai Zhang;Weiqiang Sun;Weisheng Hu

Publication Year: 2021,Page(s):276 - 288

### Automated training dataset collection system design for machine learning application in optical networks: an example of quality of transmission estimation

Jianing Lu;Qirui Fan;Gai Zhou;Linyue Lu;Changyuan Yu;Alan Pak Tao Lau;Chao Lu

Publication Year: 2021,Page(s):289 - 300



# JOURNAL OF COMMUNICATIONS AND NETWORKS

Volume 23, Number 5, October 2021  
eISSN 1976-5541 Online

[Epidemic Dynamics, Testing and Interventions  
Modeling COVID-19 with mean field evolutionary dynamics: Social  
distancing and seasonality](#)  
Hao Gao;Wuchen Li;Miao Pan;Zhu Han;H. Vincent Poor  
Publication Year: 2021,Page(s):314 - 325

[Optimization of resource-constrained policies for COVID-19 testing  
and quarantining](#)  
Konstantin Berestizshevsky;Koffi-Emmanuel Sadzi;Guy Even;Moni  
Shahar  
Publication Year: 2021,Page(s):326 - 339

[Measuring the impact of COVID-19 restrictions on mobility: A real  
case study from Italy](#)  
Claudia Cavallaro;Armir Bujari;Luca Foschini;Giuseppe Di  
Modica;Paolo Bellavista  
Publication Year: 2021,Page(s):340 - 349

[Applying a deep learning enhanced public warning system to deal  
with COVID-19](#)  
Sunwoo Lee;Donghyeok An  
Publication Year: 2021,Page(s):350 - 359

[Contact Tracing  
Privacy-preserving COVID-19 contact tracing using blockchain](#)  
Shahzaib Tahir;Hasan Tahir;Ali Sajjad;Muttukrishnan  
Rajarajan;Fawad Khan  
Publication Year: 2021,Page(s):360 - 373

[WeTrace: A privacy-preserving tracing approach](#)  
Muriel Franco;Bruno Rodrigues;Christian Killer;Eder John  
Scheid;Alessandro De Carli;Andreas Gassmann;David  
Schönbächler;Burkhard Stiller  
Publication Year: 2021,Page(s):374 - 389

[Energy efficient contact tracing and social interaction based patient  
prediction system for COVID-19 pandemic](#)  
Charuka Moremada;Chamara Sandeepa;Nadeeka  
Dissanayaka;Tharindu Gamage;Madhusanka Liyanage  
Publication Year: 2021,Page(s):390 - 407

[Information for authors](#)  
Publication Year: 2021,Page(s):412 - 416

[Call for papers](#)  
Publication Year: 2021,Page(s):408 - 408

[Open access publishing agreement](#)  
Publication Year: 2021,Page(s):409 - 411

[Front cover](#)  
Publication Year: 2021,Page(s):c1 - c1

[Back cover](#)  
Publication Year: 2021,Page(s):c4 - c4

[Special issue on communications and networking approaches for  
combating COVID-19](#)  
Randall A. Berry;Zhu Han;Krishna Narayanan;H. Vincent  
Poor;Christos Verikoukis;Osman Yağan  
Publication Year: 2021,Page(s):309 - 313

[Inside front cover](#)  
Publication Year: 2021,Page(s):c2 - c2

# 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/>

July 2021 –

A Multi-FoV Viewport-Based Visual Saliency Model Using Adaptive Weighting Losses for 360° Images  
Fang-Yi Chao;Lu Zhang;Wassim Hamidouche;Olivier Déforges  
Publication Year: 2021,Page(s):1811 - 1826  
HTML

Disentangling, Embedding and Ranking Label Cues for Multi-Label Image Recognition  
Zhao-Min Chen;Quan Cui;Xiu-Shen Wei;Xin Jin;Yanwen Guo  
Publication Year: 2021,Page(s):1827 - 1840  
Cited by: Papers (1)  
HTML

3D Skeletal Gesture Recognition via Discriminative Coding on Time-Warping Invariant Riemannian Trajectories  
Xin Liu;Guoying Zhao  
Publication Year: 2021,Page(s):1841 - 1854  
Cited by: Papers (2)  
HTML

Online Hashing With Bit Selection for Image Retrieval  
Zhenyu Weng;Yuesheng Zhu  
Publication Year: 2021,Page(s):1868 - 1881  
HTML

Learning Feature Representation and Partial Correlation for Multimodal Multi-Label Data  
Guoli Song;Shuhui Wang;Qingming Huang;Qi Tian  
Publication Year: 2021,Page(s):1882 - 1894  
HTML

AutoFoley: Artificial Synthesis of Synchronized Sound Tracks for Silent Videos With Deep Learning  
Sanchita Ghose;John Jeffrey Prevost  
Publication Year: 2021,Page(s):1895 - 1907  
Cited by: Papers (1)  
HTML

Motion Compensated Virtual View Synthesis Using Novel Particle Cell  
Chi Ho Cheung;Lu Sheng;King Nghi Ngan  
Publication Year: 2021,Page(s):1908 - 1923  
HTML

Accurate and Efficient Image Super-Resolution via Global-Local Adjusting Dense Network  
Xinyan Zhang;Peng Gao;Sunxiangyu Liu;Kongya Zhao;Guitao Li;Liuguo Yin;Chang Wen Chen  
Publication Year: 2021,Page(s):1924 - 1937  
Cited by: Papers (1)  
HTML

Supervised Pixel-Wise GAN for Face Super-Resolution  
Menglei Zhang;Qiang Ling  
Publication Year: 2021,Page(s):1938 - 1950  
HTML

An Automated and Robust Image Watermarking Scheme Based on Deep Neural Networks  
Xin Zhong;Pei-Chi Huang;Spyridon Mastorakis;Frank Y. Shih  
Publication Year: 2021,Page(s):1951 - 1961  
Cited by: Papers (1)  
HTML

M-GCN: Multi-Branch Graph Convolution Network for 2D Image-based on 3D Model Retrieval  
Wei-Zhi Nie;Min-Jie Ren;An-An Liu;Zhendong Mao;Jie Nie  
Publication Year: 2021,Page(s):1962 - 1976  
Cited by: Papers (4)  
HTML

Character Detection in Animated Movies Using Multi-Style Adaptation and Visual Attention  
Hayeon Kim;Eun-Cheol Lee;Yongseok Seo;Dong-Hyuck Im;In-Kwon Lee  
Publication Year: 2021,Page(s):1990 - 2004  
HTML

Unsupervised Moving Object Detection in Complex Scenes Using Adversarial Regularizations  
Maryam Sultana;Arif Mahmood;Soon Ki Jung  
Publication Year: 2021,Page(s):2005 - 2018  
Cited by: Papers (1)  
HTML

Context-Dependent Propagating-Based Video Recommendation in Multimodal Heterogeneous Information Networks  
Lei Sang;Min Xu;Shengsheng Qian;Matt Martin;Peter Li;Xindong Wu

Publication Year: 2021,Page(s):2019 - 2032

Cited by: Papers (2)

HTML

Weakly Supervised Emotion Intensity Prediction for Recognition of Emotions in Images

Haimin Zhang;Min Xu

Publication Year: 2021,Page(s):2033 - 2044

HTML

Semantic Context Encoding for Accurate 3D Point Cloud Segmentation

Hao Liu;Yulan Guo;Yanni Ma;Yinjie Lei;Gongjian Wen

Publication Year: 2021,Page(s):2045 - 2055

Cited by: Papers (3)

HTML

Manifold Transfer Learning via Discriminant Regression Analysis

Yuwu Lu;Wenjing Wang;Chun Yuan;Xuelong Li;Zhihui Lai

Publication Year: 2021,Page(s):2056 - 2070

HTML

RealVAD: A Real-World Dataset and A Method for Voice Activity Detection by Body Motion Analysis

Cigdem Beyan;Muhammad Shahid;Vittorio Murino

Publication Year: 2021,Page(s):2071 - 2085

Cited by: Papers (1)

HTML

Understanding More About Human and Machine Attention in Deep Neural Networks

Qiuxia Lai;Salman Khan;Yongwei Nie;Hanqiu Sun;Jianbing Shen;Ling Shao

Publication Year: 2021,Page(s):2086 - 2099

Cited by: Papers (1)

HTML

Subjective and Objective Quality Assessment for Stereoscopic Image Retargeting

Zhenqi Fu;Feng Shao;Qiuping Jiang;Xiangchao Meng;Yo-Sung Ho

Publication Year: 2021,Page(s):2100 - 2113

Cited by: Papers (2)

HTML

Learning Deep Multi-Level Similarity for Thermal Infrared Object Tracking

Qiao Liu;Xin Li;Zhenyu He;Nana Fan;Di Yuan;Hongpeng Wang

Publication Year: 2021,Page(s):2114 - 2126

Cited by: Papers (4)

HTML

Joint Intermediate Domain Generation and Distribution Alignment for 2D Image-Based 3D Objects Retrieval

Yuting Su;Yuqian Li;Dan Song;Anan Liu;Jie Nie

Publication Year: 2021,Page(s):2127 - 2138

HTML

Blind Image Denoising via Dynamic Dual Learning

Yong Du;Guoqiang Han;Yinjie Tan;Chufeng Xiao;Shengfeng He

Publication Year: 2021,Page(s):2139 - 2152

Cited by: Papers (1)

HTML

Improving Generative Modelling in VAEs Using Multimodal Prior

Vinayak Abrol;Pulkit Sharma;Arijit Patra

Publication Year: 2021,Page(s):2153 - 2161

Cited by: Papers (1)

HTML

STGL: Spatial-Temporal Graph Representation and Learning for Visual Tracking

Bo Jiang;Yuan Zhang;Bin Luo;Xiaochun Cao;Jin Tang

Publication Year: 2021,Page(s):2162 - 2171

HTML

Large Factor Image Super-Resolution With Cascaded Convolutional Neural Networks

Dongyang Zhang;Jie Shao;Zhenwen Liang;Lianli Gao;Heng Tao Shen

Publication Year: 2021,Page(s):2172 - 2184

HTML

Guest Editorial Special Section on Hybrid Human-Artificial Intelligence for Multimedia Computing

Raouf Hamzaoui;Huansheng Ning;Chonggang Wang;Reza Malekian;Wei Ding

Publication Year: 2021,Page(s):2185 - 2187

HTML

Human Memory Update Strategy: A Multi-Layer Template Update Mechanism for Remote Visual Monitoring

Shuai Liu;Shuai Wang;Xinyu Liu;Amir H. Gandomi;Mahmoud Daneshmand;Khan Muhammad;Victor Hugo C. De Albuquerque

Publication Year: 2021,Page(s):2188 - 2198

Cited by: Papers (1)

HTML

Unsupervised Adversarial Instance-Level Image Retrieval

Cong Bai;Hongkai Li;Jinglin Zhang;Ling Huang;Lu Zhang

Publication Year: 2021,Page(s):2199 - 2207

HTML

Edge-Cloud Collaboration Enabled Video Service Enhancement: A Hybrid Human-Artificial Intelligence Scheme

Dapeng Wu;Ruili Bao;Zhidu Li;Honggang Wang;Hong Zhang;Ruyan Wang

Publication Year: 2021,Page(s):2208 - 2221

HTML

Virtual Try-on Network With Attribute Transformation and Local Rendering

Jun Xu;Yuanyuan Pu;Rencan Nie;Dan Xu;Zhengpeng Zhao;Wenhua Qian

Publication Year: 2021,Page(s):2222 - 2234

HTML

A Deep Image Coding Scheme With Generative Network to Learn From Correlated Images

Yihao Chen;Bin Tan;Jun Wu;Zhifeng Zhang;Haoqi Ren

Publication Year: 2021,Page(s):2235 - 2244

HTML

Neural Style Palette: A Multimodal and Interactive Style Transfer From a Single Style Image

John Jethro Virtusio;Jose Jaena Mari Ople;Daniel Stanley Tan;M. Tanveer;Neeraj Kumar;Kai-Lung Hua

Publication Year: 2021,Page(s):2245 - 2258

Cited by: Papers (1)

HTML



Learning Low-Rank Sparse Representations With Robust Relationship Inference for Image Memorability Prediction  
Peiguang Jing;Yuechen Shang;Liqiang Nie;Yuting Su;Jing Liu;Meng Wang  
Publication Year: 2021,Page(s):2259 - 2272  
Cited by: Papers (1)  
HTML

Enabling Artistic Control Over Pattern Density and Stroke Strength  
John Jethro Virtusio;Daniel Stanley Tan;Wen-Huang Cheng;M. Tanveer;Kai-Lung Hua  
Publication Year: 2021,Page(s):2273 - 2285  
Cited by: Papers (1)  
HTML

Separable Reversible Data Hiding for Encrypted Three-Dimensional Models Based on Spatial Subdivision and Space Encoding  
Yuan-Yu Tsai  
Publication Year: 2021,Page(s):2286 - 2296  
HTML

Image Denoising Using Superpixel-Based PCA  
Sree Ramya S. P. Malladi;Sundaresh Ram;Jeffrey J. Rodríguez  
Publication Year: 2021,Page(s):2297 - 2309  
HTML

Solving Jigsaw Puzzles via Nonconvex Quadratic Programming With the Projected Power Method  
Fang Yan;Yuanjie Zheng;Jinyu Cong;Liu Liu;Dacheng Tao;Sujuan Hou  
Publication Year: 2021,Page(s):2310 - 2320  
HTML

Heterogeneous Community Question Answering via Social-Aware Multi-Modal Co-Attention Convolutional Matching  
Jun Hu;Shengsheng Qian;Quan Fang;Changsheng Xu  
Publication Year: 2021,Page(s):2321 - 2334  
HTML

HAPGN: Hierarchical Attentive Pooling Graph Network for Point Cloud Segmentation  
Chaofan Chen;Shengsheng Qian;Quan Fang;Changsheng Xu  
Publication Year: 2021,Page(s):2335 - 2346  
Cited by: Papers (2)  
HTML

Instance-Level Heterogeneous Domain Adaptation for Limited-Labeled Sketch-to-Photo Retrieval  
Fan Yang;Yang Wu;Zheng Wang;Xiang Li;Sakriani Sakti;Satoshi Nakamura  
Publication Year: 2021,Page(s):2347 - 2360  
Cited by: Papers (5)  
HTML

Toward Multi-Modal Conditioned Fashion Image Translation  
Xiaoling Gu;Jun Yu;Yongkang Wong;Mohan S. Kankanhalli  
Publication Year: 2021,Page(s):2361 - 2371  
HTML

Universal Chosen-Ciphertext Attack for a Family of Image Encryption Schemes  
Junxin Chen;Lei Chen;Yicong Zhou  
Publication Year: 2021,Page(s):2372 - 2385  
Cited by: Papers (1)  
HTML

Learning Coarse-to-Fine Graph Neural Networks for Video-Text Retrieval  
Wei Wang;Junyu Gao;Xiaoshan Yang;Changsheng Xu  
Publication Year: 2021,Page(s):2386 - 2397  
Cited by: Papers (2)  
HTML

QoE-Driven UAV-Enabled Pseudo-Analog Wireless Video Broadcast: A Joint Optimization of Power and Trajectory  
Xiao-Wei Tang;Xin-Lin Huang;Fei Hu  
Publication Year: 2021,Page(s):2398 - 2412  
HTML

Fine-Grained Image Captioning With Global-Local Discriminative Objective  
Jie Wu;Tianshui Chen;Hefeng Wu;Zhi Yang;Guangchun Luo;Liang Lin  
Publication Year: 2021,Page(s):2413 - 2427  
Cited by: Papers (2)  
HTML

Joint Cross-Modal and Unimodal Features for RGB-D Salient Object Detection  
Nianchang Huang;Yi Liu;Qiang Zhang;Jungong Han  
Publication Year: 2021,Page(s):2428 - 2441  
Cited by: Papers (2)  
HTML

Efficient Design and Control for Network-Assisted Device-to-Device Content Delivery Network  
Jihoon Sung;Dujeong Lee  
Publication Year: 2021,Page(s):2442 - 2456  
HTML

GAC-GAN: A General Method for Appearance-Controllable Human Video Motion Transfer  
Dongxu Wei;Xiaowei Xu;Haibin Shen;Kejie Huang  
Publication Year: 2021,Page(s):2457 - 2470  
Cited by: Papers (1)  
HTML

SRD: A Tree Structure Based Decoder for Online Handwritten Mathematical Expression Recognition  
Jianshu Zhang;Jun Du;Yongxin Yang;Yi-Zhe Song;Lirong Dai  
Publication Year: 2021,Page(s):2471 - 2480  
HTML

Deep Single Image Deraining via Modeling Haze-Like Effect  
Yinglong Wang;Dong Gong;Jie Yang;Qinfeng Shi;Anton van den Hengel;Dehua Xie;Bing Zeng  
Publication Year: 2021,Page(s):2481 - 2492  
HTML

Adaptive Graph Completion Based Incomplete Multi-View Clustering  
Jie Wen;Ke Yan;Zheng Zhang;Yong Xu;Junqian Wang;Lunke Fei;Bob Zhang  
Publication Year: 2021,Page(s):2493 - 2504  
Cited by: Papers (3)  
HTML

Estimation of Quality Scores From Subjective Tests-Beyond Subjects' MOS  
Sergio Pezzulli;Maria G. Martini;Nabajeet Barman  
Publication Year: 2021,Page(s):2505 - 2519  
HTML

Object-Aware Multimodal Named Entity Recognition in Social Media Posts With Adversarial Learning  
Changmeng Zheng;Zhiwei Wu;Tao Wang;Yi Cai;Qing Li  
Publication Year: 2021,Page(s):2520 - 2532  
Cited by: Papers (1)  
[HTML](#)

YuvConv: Multi-Scale Non-Uniform Convolution Structure Based on YUV Color Model  
Youqing Xiao;Zhanchuan Cai;Xixi Yuan  
Publication Year: 2021,Page(s):2533 - 2544  
[HTML](#)

Emotion Attention-Aware Collaborative Deep Reinforcement Learning for Image Cropping  
Xiaoyan Zhang;Zhuopeng Li;Jianmin Jiang  
Publication Year: 2021,Page(s):2545 - 2560  
[HTML](#)

Learning to Generate Multi-Exposure Stacks With Cycle Consistency for High Dynamic Range Imaging  
Siyeong Lee;So Yeon Jo;Gwon Hwan An;Suk-Ju Kang  
Publication Year: 2021,Page(s):2561 - 2574  
Cited by: Papers (1)  
[HTML](#)

Robust CAPTCHAs Towards Malicious OCR  
Jiaming Zhang;Jitao Sang;Kaiyuan Xu;Shangxi Wu;Xian Zhao;Yanfeng Sun;Yongli Hu;Jian Yu  
Publication Year: 2021,Page(s):2575 - 2587  
[HTML](#)

Data-Driven Bandwidth Prediction Models and Automated Model Selection for Low Latency  
Abdelhak Bentaleb;Ali C. Begen;Saad Harous;Roger Zimmermann  
Publication Year: 2021,Page(s):2588 - 2601  
Cited by: Papers (1)  
[HTML](#)

Blind Image Clustering for Camera Source Identification via Row-Sparsity Optimization  
Xiang Jiang;Shikui Wei;Ting Liu;Ruizhen Zhao;Yao Zhao;Heng Huang  
Publication Year: 2021,Page(s):2602 - 2613  
Cited by: Papers (1)  
[HTML](#)

Group Re-Identification With Group Context Graph Neural Networks  
Ji Zhu;Hua Yang;Weiyao Lin;Nian Liu;Jia Wang;Wenjun Zhang  
Publication Year: 2021,Page(s):2614 - 2626  
[HTML](#)

Multi-Channel Deep Networks for Block-Based Image Compressive Sensing  
Siwang Zhou;Yan He;Yonghe Liu;Chengqing Li;Jianming Zhang  
Publication Year: 2021,Page(s):2627 - 2640  
[HTML](#)

Vector-Based Feature Representations for Speech Signals: From Supervector to Latent Vector  
Yuechi Jiang;Frank H. F. Leung  
Publication Year: 2021,Page(s):2641 - 2655  
[HTML](#)

Robust Coding of Encrypted Images via 2D Compressed Sensing  
Bo Zhang;Di Xiao;Yong Xiang  
Publication Year: 2021,Page(s):2656 - 2671  
Cited by: Papers (1)  
[HTML](#)

AFNet: Temporal Locality-Aware Network With Dual Structure for Accurate and Fast Action Detection  
Guang Chen;Can Zhang;Yuexian Zou  
Publication Year: 2021,Page(s):2672 - 2682  
Cited by: Papers (1)  
[HTML](#)

VehicleNet: Learning Robust Visual Representation for Vehicle Re-Identification  
Zhedong Zheng;Tao Ruan;Yunchao Wei;Yi Yang;Tao Mei  
Publication Year: 2021,Page(s):2683 - 2693  
Cited by: Papers (4)  
[HTML](#)

Staged Sketch-to-Image Synthesis via Semi-supervised Generative Adversarial Networks  
Zeyu Li;Cheng Deng;Erkun Yang;Dacheng Tao  
Publication Year: 2021,Page(s):2694 - 2705  
[HTML](#)

Arbitrarily-Oriented Text Detection in Low Light Natural Scene Images  
Minglong Xue;Palaiahnakote Shivakumara;Chao Zhang;Yao Xiao;Tong Lu;Umapada Pal;Daniel Lopresti;Zhibo Yang  
Publication Year: 2021,Page(s):2706 - 2720  
Cited by: Papers (2)  
[HTML](#)

Universal Cross-Domain 3D Model Retrieval  
Dan Song;Tian-Bao Li;Wen-Hui Li;Wei-Zhi Nie;Wu Liu;An-An Liu  
Publication Year: 2021,Page(s):2721 - 2731  
[HTML](#)

Adversarial Network With Multiple Classifiers for Open Set Domain Adaptation  
Tasfia Shermin;Guojun Lu;Shyh Wei Teng;Manzur Murshed;Ferdous Sohel  
Publication Year: 2021,Page(s):2732 - 2744  
Cited by: Papers (1)  
[HTML](#)

Learning Specific and General Realm Feature Representations for Image Fusion  
Fan Zhao;Wenda Zhao  
Publication Year: 2021,Page(s):2745 - 2756  
Cited by: Papers (5)  
[HTML](#)

Quality Evaluation for Image Retargeting With Instance Semantics  
Leida Li;Yixuan Li;Jinjian Wu;Lin Ma;Yuming Fang  
Publication Year: 2021,Page(s):2757 - 2769  
[HTML](#)

Deep Unsupervised Binary Descriptor Learning Through Locality Consistency and Self Distinctiveness  
Bin Fan;Hongmin Liu;Hui Zeng;Jiyong Zhang;Xin Liu;Junwei Han  
Publication Year: 2021,Page(s):2770 - 2781  
Cited by: Papers (4)  
[HTML](#)

A Matrix Factorization Based Framework for Fusion of Physical and Social Sensors  
Yuhui Wang;Francesco Gelli;Christian von derWeth;Mohan Kankanhalli  
Publication Year: 2021,Page(s):2782 - 2793  
[HTML](#)

Exploring the Representativity of Art Paintings  
Yingying Deng;Fan Tang;Weiming Dong;Chongyang Ma;Feiyue Huang;Oliver Deussen;Changsheng Xu  
Publication Year: 2021,Page(s):2794 - 2805  
HTML

Efficient Projected Frame Padding for Video-Based Point Cloud Compression  
Li Li;Zhu Li;Shan Liu;Houqiang Li  
Publication Year: 2021,Page(s):2806 - 2819  
Cited by: Papers (3)  
HTML

An Accurate, Robust Visual Odometry and Detail-Preserving Reconstruction System  
Xiaoxi Gong;Yuanpeng Liu;Qiaoyun Wu;Jiayi Huang;Hua Zong;Jun Wang  
Publication Year: 2021,Page(s):2820 - 2832  
HTML

StyleGuide: Zero-Shot Sketch-Based Image Retrieval Using Style-Guided Image Generation  
Titir Dutta;Anurag Singh;Soma Biswas  
Publication Year: 2021,Page(s):2833 - 2842  
Cited by: Papers (1)  
HTML

DLGAN: Depth-Preserving Latent Generative Adversarial Network for 3D Reconstruction  
Caixia Liu;Dehui Kong;Shaofan Wang;Jinghua Li;Baocai Yin  
Publication Year: 2021,Page(s):2843 - 2856  
HTML

Hardness-Aware Dictionary Learning: Boosting Dictionary for Recognition  
Lichun Wang;Shuang Li;Shaofan Wang;Dehui Kong;Baocai Yin  
Publication Year: 2021,Page(s):2857 - 2867  
HTML

Fine Granularity Access in Interactive Compression of 360-Degree Images Based on Rate-adaptive Channel Codes  
Navid Mahmoudian Bidgoli;Thomas Maugey;Aline Roumy  
Publication Year: 2021,Page(s):2868 - 2882  
Cited by: Papers (2)  
HTML

An Adaptive Arbitrary Multiresolution Decomposition for Multiscale Geometric Analysis  
Zhengzhi Lu;Guoan Yang;Junjie Yang;Yuhao Wang  
Publication Year: 2021,Page(s):2883 - 2893  
HTML

Learning Diverse Fashion Collocation by Neural Graph Filtering  
Xin Liu;Yongbin Sun;Ziwei Liu;Dahua Lin  
Publication Year: 2021,Page(s):2894 - 2901  
HTML

Saliency Detection Using Deep Features and Affinity-Based Robust Background Subtraction  
Mehmood Nawaz;Hong Yan  
Publication Year: 2021,Page(s):2902 - 2916  
HTML

Hybrid-Attention Enhanced Two-Stream Fusion Network for Video Venue Prediction  
Yanchao Zhang;Weiqing Min;Liqiang Nie;Shuqiang Jiang  
Publication Year: 2021,Page(s):2917 - 2929  
HTML

Learning Compact Multifeature Codes for Palmprint Recognition From a Single Training Image per Palm  
Lunke Fei;Bob Zhang;Lin Zhang;Wei Jia;Jie Wen;Jigang Wu  
Publication Year: 2021,Page(s):2930 - 2942  
Cited by: Papers (9)  
HTML

Unsupervised Multi-View Clustering by Squeezing Hybrid Knowledge From Cross View and Each View  
Junpeng Tan;Yukai Shi;Zhijing Yang;Caizhen Wen;Liang Lin  
Publication Year: 2021,Page(s):2943 - 2956  
HTML

Towards Coding for Human and Machine Vision: Scalable Face Image Coding  
Shuai Yang;Yueyu Hu;Wenhan Yang;Ling-Yu Duan;Jiaying Liu  
Publication Year: 2021,Page(s):2957 - 2971  
HTML

Light Field Image Coding Using VVC Standard and View Synthesis Based on Dual Discriminator GAN  
Nader Bakir;Wassim Hamidouche;Sid Ahmed Fezza;Khouloud Samrouth;Olivier Déforges  
Publication Year: 2021,Page(s):2972 - 2985  
HTML

Motion Blur Removal With Quality Assessment Guidance  
Jichun Li;Bo Yan;Qing Lin;Ang Li;Chenxi Ma  
Publication Year: 2021,Page(s):2986 - 2997  
HTML

Expression-Aware Face Reconstruction via a Dual-Stream Network  
Xiaoyu Chai;Jun Chen;Chao Liang;Dongshu Xu;Chia-Wen Lin  
Publication Year: 2021,Page(s):2998 - 3012  
HTML

Learned Multi-Resolution Variable-Rate Image Compression With Octave-Based Residual Blocks  
Mohammad Akbari;Jie Liang;Jingning Han;Chengjie Tu  
Publication Year: 2021,Page(s):3013 - 3021  
HTML

Dynamic Point Cloud Inpainting via Spatial-Temporal Graph Learning  
Zeqing Fu;Wei Hu  
Publication Year: 2021,Page(s):3022 - 3034  
HTML

Intelligibility Enhancement Via Normal-to-Lombard Speech Conversion With Long Short-Term Memory Network and Bayesian Gaussian Mixture Model  
Gang Li;Xiaochen Wang;Ruimin Hu;Huyin Zhang;Shanfa Ke  
Publication Year: 2021,Page(s):3035 - 3047  
HTML

Spatial Pyramid Attention for Deep Convolutional Neural Networks  
Xu Ma;Jingda Guo;Andrew Sansom;Mara McGuire;Andrew Kalaani;Qi Chen;Sihai Tang;Qing Yang;Song Fu  
Publication Year: 2021,Page(s):3048 - 3058  
HTML

Attentive Composite Residual Network for Robust Rain Removal from Single Images  
Yue Que;Suli Li;Hyo Jong Lee  
Publication Year: 2021,Page(s):3059 - 3072  
HTML

Interclass-Relativity-Adaptive Metric Learning for Cross-Modal Matching and Beyond  
Feiyu Chen;Jie Shao;Yonghui Zhang;Xing Xu;Heng Tao Shen  
Publication Year: 2021,Page(s):3073 - 3084  
Cited by: Papers (1)  
HTML

Attribute-Aware Pedestrian Detection in a Crowd  
Jialiang Zhang;Lixiang Lin;Jianke Zhu;Yang Li;Yun-chen Chen;Yao Hu;Steven C. H. Hoi  
Publication Year: 2021,Page(s):3085 - 3097  
Cited by: Papers (1)  
HTML

Mesh Convolution: A Novel Feature Extraction Method for 3D Nonrigid Object Classification  
Yu Chen;Jieyu Zhao;Congwei Shi;Dongdong Yuan  
Publication Year: 2021,Page(s):3098 - 3111  
HTML

Learning to Segment Video Object With Accurate Boundaries  
Jingchun Cheng;Yuhui Yuan;Yali Li;Jingdong Wang;Shengjin Wang  
Publication Year: 2021,Page(s):3112 - 3123  
HTML

Graph Regularized Encoder-Decoder Networks for Image Representation Learning  
Shijie Yang;Liang Li;Shuhui Wang;Weigang Zhang;Qingming Huang;Qi Tian  
Publication Year: 2021,Page(s):3124 - 3136  
HTML

Latent Representation Learning Model for Multi-Band Images Fusion via Low-Rank and Sparse Embedding  
Bin Wang;Huifang Niu;Jianchao Zeng;Guifeng Bai;Suzhen Lin;Yanbo Wang  
Publication Year: 2021,Page(s):3137 - 3152  
HTML

Luminance-Aware Pyramid Network for Low-Light Image Enhancement  
Jiaqian Li;Juncheng Li;Faming Fang;Fang Li;Guixu Zhang  
Publication Year: 2021,Page(s):3153 - 3165  
Cited by: Papers (1)  
HTML

Optimizing Video QoE for Mobile eMBMS Users in Cellular Networks  
Ahmed Khalid;Ahmed H. Zahran;Cormac J. Sreenan  
Publication Year: 2021,Page(s):3166 - 3178  
HTML

Frame-Wise Detection of Double HEVC Compression by Learning Deep Spatio-Temporal Representations in Compression Domain  
Peisong He;Haoliang Li;Hongxia Wang;Shiqi Wang;Xinghao Jiang;Ruimei Zhang  
Publication Year: 2021,Page(s):3179 - 3192  
HTML

Co-Saliency Detection via a General Optimization Model and Adaptive Graph Learning  
Bo Jiang;Xingyue Jiang;Jin Tang;Bin Luo  
Publication Year: 2021,Page(s):3193 - 3202  
Cited by: Papers (1)  
HTML

Unsupervised Video Summarization via Relation-Aware Assignment Learning  
Junyu Gao;Xiaoshan Yang;Yingying Zhang;Changsheng Xu  
Publication Year: 2021,Page(s):3203 - 3214  
HTML

Handling Outliers by Robust M-Estimation in Blind Image Deblurring  
Xinxin Zhang;Ronggang Wang;Da Chen;Yang Zhao;Wen Gao  
Publication Year: 2021,Page(s):3215 - 3226  
HTML

Attention-Based Deep Reinforcement Learning for Virtual Cinematography of 360° Videos  
Jianyi Wang;Mai Xu;Lai Jiang;Yuhang Song  
Publication Year: 2021,Page(s):3227 - 3238  
Cited by: Papers (1)  
HTML

Global Manifold Learning for Interactive Image Segmentation  
Tao Wang;Zexuan Ji;Jian Yang;Quansen Sun;Peng Fu  
Publication Year: 2021,Page(s):3239 - 3249  
HTML

NDN-MMRA: Multi-Stage Multicast Rate Adaptation in Named Data Networking WLAN  
Fan Wu;Wang Yang;Ju Ren;Feng Lyu;Peng Yang;Yaoxue Zhang;Xuemin Shen  
Publication Year: 2021,Page(s):3250 - 3263  
Cited by: Papers (5)  
HTML

Adaptive and Robust Partition Learning for Person Retrieval With Policy Gradient  
Yuxuan Shi;Zhen Wei;Hefei Ling;Ziyang Wang;Pengfei Zhu;Jialie Shen;Ping Li  
Publication Year: 2021,Page(s):3264 - 3277  
HTML

Model-Based Joint Bit Allocation Between Geometry and Color for Video-Based 3D Point Cloud Compression  
Qi Liu;Hui Yuan;Junhui Hou;Raouf Hamzaoui;Honglei Su  
Publication Year: 2021,Page(s):3278 - 3291  
Cited by: Papers (2)  
HTML

Adversarial 3D Convolutional Auto-Encoder for Abnormal Event Detection in Videos  
Che Sun;Yunde Jia;Hao Song;Yuwei Wu  
Publication Year: 2021,Page(s):3292 - 3305  
HTML

Temporal Textual Localization in Video via Adversarial Bi-Directional Interaction Networks  
Zijian Zhang;Zhou Zhao;Zhu Zhang;Zhijie Lin;Qi Wang;Richang Hong  
Publication Year: 2021,Page(s):3306 - 3317  
Cited by: Papers (1)  
HTML

KTransGAN: Variational Inference-Based Knowledge Transfer for Unsupervised Conditional Generative Learning  
Mohamed Azzam;Wenhao Wu;Wenming Cao;Si Wu;Hau-San Wong  
Publication Year: 2021,Page(s):3318 - 3331  
HTML

DCR: A Unified Framework for Holistic/Partial Person ReID

Zan Gao;Lishuai Gao;Hua Zhang;Zhiyong Cheng;Richang

Hong;Shengyong Chen

Publication Year: 2021,Page(s):3332 - 3345

Cited by: Papers (1)

HTML

Temporal Constraint Background-Aware Correlation Filter With

Saliency Map

Jiawen Liao;Chun Qi;Jianzhong Cao

Publication Year: 2021,Page(s):3346 - 3361

HTML

PFAN++: Bi-Directional Image-Text Retrieval With Position

Focused Attention Network

Yaxiong Wang;Hao Yang;Xiuxiu Bai;Xueming Qian;Lin Ma;Jing

Lu;Biao Li;Xin Fan

Publication Year: 2021,Page(s):3362 - 3376

HTML

Speaker Clustering by Co-Optimizing Deep Representation

Learning and Cluster Estimation

Yanxiong Li;Wucheng Wang;Mingle Liu;Zhongjie Jiang;Qianhua He

Publication Year: 2021,Page(s):3377 - 3387

HTML

Salient Object Detection in Stereoscopic 3D Images Using a Deep

Convolutional Residual Autoencoder

Wujie Zhou;Junwei Wu;Jingsheng Lei;Jenq-Neng Hwang;Lu Yu

Publication Year: 2021,Page(s):3388 - 3399

Cited by: Papers (10)

HTML

Deep Unsupervised Self-Evolutionary Hashing for Image Retrieval

Haofeng Zhang;Yifan Gu;Yazhou Yao;Zheng Zhang;Li Liu;Jian

Zhang;Ling Shao

Publication Year: 2021,Page(s):3400 - 3413

Cited by: Papers (1)

HTML

Speech Personality Recognition Based on Annotation Classification

Using Log-Likelihood Distance and Extraction of Essential Audio

Features

Zhen-Tao Liu;Abdul Rehman;Min Wu;Wei-Hua Cao;Man Hao

Publication Year: 2021,Page(s):3414 - 3426

Cited by: Papers (2)

HTML

LCSegNet: An Efficient Semantic Segmentation Network for Large-

Scale Complex Chinese Character Recognition

Xiangping Wu;Qingcai Chen;Yulun Xiao;Wei Li;Xin Liu;Baotian Hu

Publication Year: 2021,Page(s):3427 - 3440

HTML

Universal-to-Specific Framework for Complex Action Recognition

Peisen Zhao;Lingxi Xie;Ya Zhang;Qi Tian

Publication Year: 2021,Page(s):3441 - 3453

HTML

Explore Video Clip Order With Self-Supervised and Curriculum

Learning for Video Applications

Jun Xiao;Lin Li;Dejing Xu;Chengjiang Long;Jian Shao;Shifeng

Zhang;Shiliang Pu;Yueting Zhuang

Publication Year: 2021,Page(s):3454 - 3466

HTML

Blind 3D-Printing Watermarking Using Moment Alignment and

Surface Norm Distribution

Arnaud Delmotte;Kenichiro Tanaka;Hiroyuki Kubo;Takuya

Funatomi;Yasuhiro Mukaigawa

Publication Year: 2021,Page(s):3467 - 3482

Cited by: Papers (1)

HTML

Deep Multi-View Subspace Clustering With Unified and

Discriminative Learning

Qianqian Wang;Jiafeng Cheng;Quanxue Gao;Guoshuai

Zhao;Licheng Jiao

Publication Year: 2021,Page(s):3483 - 3493

Cited by: Papers (2)

HTML

Improving Student Learning Satisfaction by Using an Innovative

DASH-Based Multiple Sensorial Media Delivery Solution

Ting Bi;Roisin Lyons;Grace Fox;Gabriel-Miro Muntean

Publication Year: 2021,Page(s):3494 - 3505

Cited by: Papers (1)

HTML

A Serial Image Copy-Move Forgery Localization Scheme With

Source/Target Distinguishment

Beijing Chen;Weijin Tan;Gouenou Coatrieux;Yuhui Zheng;Yun-

Qing Shi

Publication Year: 2021,Page(s):3506 - 3517

HTML

Visual Question Answering With Dense Inter- and Intra-Modality

Interactions

Fei Liu;Jing Liu;Zhiwei Fang;Richang Hong;Hanqing Lu

Publication Year: 2021,Page(s):3518 - 3529

HTML

Self-Supervised Deep TripleNet for Video Object Segmentation

Kai Xu;Longyin Wen;Guorong Li;Qingming Huang

Publication Year: 2021,Page(s):3530 - 3539

Cited by: Papers (1)

HTML

Monocular 3D Facial Expression Features for Continuous Affect

Recognition

Ercheng Pei;Meshia Cédric Oveneke;Yong Zhao;Dongmei

Jiang;Hichem Sahli

Publication Year: 2021,Page(s):3540 - 3550

HTML

MVANet: Multi-Task Guided Multi-View Attention Network for

Chinese Food Recognition

Haozan Liang;Guihua Wen;Yang Hu;Mingnan Luo;Pei

Yang;Yingxue Xu

Publication Year: 2021,Page(s):3551 - 3561

HTML

Learning Spatial-Temporal Representations Over Walking Tracklet

for Long-Term Person Re-Identification in the Wild

Peng Zhang;Jingsong Xu;Qiang Wu;Yan Huang;Xianye Ben

Publication Year: 2021,Page(s):3562 - 3576

HTML

A New Multihypothesis-Based Compressed Video Sensing

Reconstruction System

Shuai Zheng;Jian Chen;Xiao-Ping Zhang;Yonghong Kuo

Publication Year: 2021,Page(s):3577 - 3589

HTML



Deep Semantic Parsing of Freehand Sketches With Homogeneous Transformation, Soft-Weighted Loss, and Staged Learning  
Ying Zheng;Hongxun Yao;Xiaoshuai Sun  
Publication Year: 2021,Page(s):3590 - 3602  
HTML

Wildfish++: A Comprehensive Fish Benchmark for Multimedia Research  
Peiqin Zhuang;Yali Wang;Yu Qiao  
Publication Year: 2021,Page(s):3603 - 3617  
HTML

Learning the Relation Between Interested Objects and Aesthetic Region for Image Cropping  
Peng Lu;Hao Zhang;Xujun Peng;Xiaofu Jin  
Publication Year: 2021,Page(s):3618 - 3630  
Cited by: Papers (1)  
HTML

CoLEAP: Cooperative Learning-Based Edge Scheme With Caching and Prefetching for DASH Video Delivery  
Wanxin Shi;Chao Wang;Yong Jiang;Qing Li;Gengbiao Shen;Gabriel-Miro Muntean  
Publication Year: 2021,Page(s):3631 - 3645  
HTML

Collaborative Image Relevance Learning for Visual Re-Ranking  
Jianbo Ouyang;Wengang Zhou;Min Wang;Qi Tian;Houqiang Li  
Publication Year: 2021,Page(s):3646 - 3656  
HTML

Parametric Shape Estimation of Human Body Under Wide Clothing  
Yucheng Lu;Jin-Hyuck Cha;Se-Kyoung Youm;Seung-Won Jung  
Publication Year: 2021,Page(s):3657 - 3669  
HTML

Optimal Wireless Streaming of Multi-Quality 360 VR Video By Exploiting Natural, Relative Smoothness-Enabled, and Transcoding-Enabled Multicast Opportunities  
Kaixuan Long;Ying Cui;Chencheng Ye;Zhi Liu  
Publication Year: 2021,Page(s):3670 - 3683  
Cited by: Papers (6)  
HTML

Privacy-Preserving In-Home Fall Detection Using Visual Shielding Sensing and Private Information-Embedding  
Jixin Liu;Rong Tan;Guang Han;Ning Sun;Sam Kwong  
Publication Year: 2021,Page(s):3684 - 3699  
HTML

Comparative Perceptual Assessment of Visual Signals Using Free Energy Features  
Guangtao Zhai;Yucheng Zhu;Xiongkuo Min  
Publication Year: 2021,Page(s):3700 - 3713  
HTML

An Approximation Algorithm to Maximize User Capacity for an Auto-Scaling VoD System  
Zhangyu Chang;S.-H. Gary Chan  
Publication Year: 2021,Page(s):3714 - 3725  
HTML

One-Shot Texture Retrieval Using Global Grouping Metric  
Kai Zhu;Yang Cao;Wei Zhai;Zheng-Jun Zha  
Publication Year: 2021,Page(s):3726 - 3737  
HTML

Hard Pixel Mining for Depth Privileged Semantic Segmentation  
Zhangxuan Gu;Li Niu;Haohua Zhao;Liqing Zhang  
Publication Year: 2021,Page(s):3738 - 3751  
Cited by: Papers (3)  
HTML

Low-Cost Anti-Copying 2D Barcode by Exploiting Channel Noise Characteristics  
Ning Xie;Qiqi Zhang;Yicong Chen;Ji Hu;Gang Luo;Changsheng Chen  
Publication Year: 2021,Page(s):3752 - 3767  
Cited by: Papers (1)  
HTML

A New Approach for Character Recognition of Multi-Style Vehicle License Plates  
Qiuying Huang;Zhanchuan Cai;Ting Lan  
Publication Year: 2021,Page(s):3768 - 3777  
HTML

Deep Hashing With Weighted Spatial Importance  
Yang Shi;Xiushan Nie;Meng Chen;Li Lian;Yilong Yin  
Publication Year: 2021,Page(s):3778 - 3792  
HTML

C-GCN: Correlation Based Graph Convolutional Network for Audio-Video Emotion Recognition  
Weizhi Nie;Minjie Ren;Jie Nie;Sicheng Zhao  
Publication Year: 2021,Page(s):3793 - 3804  
Cited by: Papers (1)  
HTML

Controlling P2P-CDN Live Streaming Services at SDN-Enabled Multi-Access Edge Datacenters  
Selin Nacakli;A. Murat Tekalp  
Publication Year: 2021,Page(s):3805 - 3816  
HTML

Wide Color Gamut Image Content Characterization: Method, Evaluation, and Applications  
Junghyuk Lee;Toinon Vigier;Patrick Le Callet;Jong-Seok Lee  
Publication Year: 2021,Page(s):3817 - 3827  
HTML

Kernelized Multiview Subspace Analysis By Self-Weighted Learning  
Huibing Wang;Yang Wang;Zhao Zhang;Xianping Fu;Li Zhuo;Mingliang Xu;Meng Wang  
Publication Year: 2021,Page(s):3828 - 3840  
Cited by: Papers (3)  
HTML

Adaptive Multi-Feature Reliability Re-Determinative Correlation Filter for Visual Tracking  
Mingyang Guan;Changyun Wen  
Publication Year: 2021,Page(s):3841 - 3852  
HTML

Sparkle: User-Aware Viewport Prediction in 360-Degree Video Streaming  
Jinyu Chen;Xianzhuo Luo;Miao Hu;Di Wu;Yipeng Zhou  
Publication Year: 2021,Page(s):3853 - 3866  
Cited by: Papers (1)  
HTML



String Prediction for 4:2:0 Format Screen Content Coding and Its Implementation in AVS3

Qingyang Zhou;Liping Zhao;Kailun Zhou;Tao Lin;Huihui Wang;Shuhui Wang;Mengcao Jiao

Publication Year: 2021,Page(s):3867 - 3876

Cited by: Papers (2)

[HTML](#)

Predicting the Perceptual Quality of Point Cloud: A 3D-to-2D Projection-Based Exploration

Qi Yang;Hao Chen;Zhan Ma;Yiling Xu;Rongjun Tang;Jun Sun

Publication Year: 2021,Page(s):3877 - 3891

Cited by: Papers (6)

[HTML](#)

Hierarchical Group-Level Emotion Recognition

Katsuya Fujii;Daisuke Sugimura;Takayuki Hamamoto

Publication Year: 2021,Page(s):3892 - 3906

[HTML](#)

Learning to Hash With Dimension Analysis Based Quantizer for Image Retrieval

Yuan Cao;Heng Qi;Jie Gui;Keqiu Li;Yuan Yan Tang;James Tin-Yau Kwok

Publication Year: 2021,Page(s):3907 - 3918

Cited by: Papers (1)

[HTML](#)

Domain-Oriented Semantic Embedding for Zero-Shot Learning

Shaobo Min;Hantao Yao;Hongtao Xie;Zheng-Jun Zha;Yongdong Zhang

Publication Year: 2021,Page(s):3919 - 3930

[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



## 2021: July -

Column Partition Based Distributed Algorithms for Coupled Convex Sparse Optimization: Dual and Exact Regularization Approaches  
Jinglai Shen; Jianghai Hu; Eswar Kumar Hathibelagal Kammara  
Publication Year: 2021, Page(s): 375 - 391  
[HTML](#)

A General Framework for Distributed Inference With Uncertain Models  
James Z. Hare; César A. Uribe; Lance Kaplan; Ali Jadbabaie  
Publication Year: 2021, Page(s): 392 - 405  
[HTML](#)

Full Euclidean Distance Based Selection Combining for SSK DF Cooperative Diversity Systems  
A. Ananth; M. D. Selvaraj  
Publication Year: 2021, Page(s): 406 - 422  
[HTML](#)

Adaptive Kernel Learning in Heterogeneous Networks  
Hrusikesha Pradhan; Amrit Singh Bedi; Alec Koppel; Ketan Rajawat  
Publication Year: 2021, Page(s): 423 - 437  
[HTML](#)

Collision Resolution With FM0 Signal Separation for Short-Range Random Multi-Access Wireless Network  
Haifeng Wu; Xiaogang Wu; Yi Li; Yu Zeng  
Publication Year: 2021, Page(s): 438 - 450  
[HTML](#)

Change Detection in Dynamic Networks Using Network Characteristics  
Jonathan Flossdorf; Carsten Jentsch  
Publication Year: 2021, Page(s): 451 - 464  
[HTML](#)

Probability-Guaranteed Distributed Secure Estimation for Nonlinear Systems Over Sensor Networks Under Deception Attacks on Innovations  
Lifeng Ma; Zidong Wang; Yun Chen; Xiaojian Yi  
Publication Year: 2021, Page(s): 465 - 477  
[HTML](#)

Distributed Adaptive Signal Estimation in Wireless Sensor Networks With Partial Prior Knowledge of the Desired Sources Steering Matrix  
Robbe Van Rompaey; Marc Moonen  
Publication Year: 2021, Page(s): 478 - 492  
[HTML](#)

Improving J-Divergence of Brain Connectivity States by Graph Laplacian Denoising  
Tiziana Cattai; Gaetano Scarano; Marie-Constance Corsi; Danielle S. Bassett; Fabrizio De Vico Fallani; Stefania Colonnese  
Publication Year: 2021, Page(s): 493 - 508  
[HTML](#)

On Fully-Distributed Composite Tests With General Parametric Data Distributions in Sensor Networks  
Juan Augusto Maya; Leonardo Rey Vega  
Publication Year: 2021, Page(s): 509 - 521  
[HTML](#)

Distributed Adaptive Multi-Task Learning Based on Partially Observed Graph Signals  
Wei Xia; Junbin Chen; Lisha Yu  
Publication Year: 2021, Page(s): 522 - 538  
[HTML](#)

Data Reconstruction in Heterogeneous Environmental Wireless Sensor Networks Using Robust Tensor Principal Component Analysis  
G Rajesh; Ashvini Chaturvedi  
Publication Year: 2021, Page(s): 539 - 550  
[HTML](#)

Multi-Slope Path Loss and Position Estimation With Grid Search and Experimental Results  
Giulio Maria Bianco; Romeo Giuliano; Franco Mazzenga; Gaetano Marrocco  
Publication Year: 2021, Page(s): 551 - 561  
[HTML](#)

Tensor Recursive Least Squares Filters for Multichannel Interrelational Signals  
Shih Yu Chang; Hsiao-Chun Wu  
Publication Year: 2021, Page(s): 562 - 577  
[HTML](#)

Identification of Edge Disconnections in Networks Based on Graph Filter Outputs  
Shlomit Shaked; Tirza Routtenberg  
Publication Year: 2021, Page(s): 578 - 594  
[HTML](#)

Multi-Scale Graph Convolutional Network With Spectral Graph Wavelet Frame  
Yangmei Shen; Wenrui Dai; Chenglin Li; Junni Zou; Hongkai Xiong  
Publication Year: 2021, Page(s): 595 - 610  
[HTML](#)

Distributed Partially Linear Additive Models With a High Dimensional Linear Part

Yue Wang;Weiping Zhang;Heng Lian

Publication Year: 2021,Page(s):611 - 625

[HTML](#)

Distributed Task Privacy for Aggregation Using Linear Codes

Matt O'Connor;W. Bastiaan Kleijn

Publication Year: 2021,Page(s):626 - 635

[HTML](#)

A Resilient Approach to Recursive Distributed Filtering for Multirate Systems Over Sensor Networks With Time-Correlated Fading Channels

Qi Li;Zidong Wang;Bo Shen;Hongjian Liu;Weiguo Sheng

Publication Year: 2021,Page(s):636 - 647

[HTML](#)

Traffic Signal Prediction on Transportation Networks Using Spatio-Temporal Correlations on Graphs

Semin Kwak;Nikolas Geroliminis;Pascal Frossard

Publication Year: 2021,Page(s):648 - 659

[HTML](#)

Distributed Network Time Synchronization: Social Learning Versus Consensus

Ian Ellis Lamptey Hulede;Hyuck M. Kwon

Publication Year: 2021,Page(s):660 - 675

[HTML](#)

Detection of False Data Injection Attacks in Industrial Wireless Sensor Networks Exploiting Network Numerical Sparsity

Jiachen Liu;Fabrice Labeau

Publication Year: 2021,Page(s):676 - 688

[HTML](#)

Asynchronous Distributed Model Predictive Control for Optimal Output Consensus of High-Order Multi-Agent Systems

Huaqing Li;Lifeng Zheng;Zheng Wang;Yongfu Li;Lianghao

Ji;Dawen Xia

Publication Year: 2021,Page(s):689 - 698

[HTML](#)

Distributed Principal Subspace Analysis for Partitioned Big Data: Algorithms, Analysis, and Implementation

Arpita Gang;Bingqing Xiang;Waheed U. Bajwa

Publication Year: 2021,Page(s):699 - 715

[HTML](#)

A JOINT PUBLICATION OF THE IEEE SENSORS COUNCIL THE IEEE COMMUNICATIONS SOCIETY THE IEEE COMPUTER SOCIETY THE IEEE SIGNAL PROCESSING SOCIETY 

NOVEMBER 1, 2021

VOLUME 8

NUMBER 21

IITJAU

(ISSN 2327-4662)

[Front Cover](#)

Publication Year: 2021,Page(s):C1 - C1

[IEEE Internet of Things Journal](#)

Publication Year: 2021,Page(s):C2 - C2

[Table of contents](#)

Publication Year: 2021,Page(s):i - iii

[Special Issue on "Toward Intelligent Internet of Medical Things and its COVID-19 Applications and Beyond"](#)

Xiping Hu;Edith C. H. Ngai;Ginevra Castellano;Bin Hu;Joel J. P. C. Rodrigues;Jaeseung Song

Publication Year: 2021,Page(s):15649 - 15651

[HTML](#)[Efficient Security and Authentication for Edge-Based Internet of Medical Things](#)

Shabir A. Parah;Javaid A. Kaw;Paolo Bellavista;Nazir A. Loan;G. M. Bhat;Khan Muhammad;Victor Hugo C. de Albuquerque

Publication Year: 2021,Page(s):15652 - 15662

Cited by: [Papers \(1\)](#)[HTML](#)[Mutual Authentication Scheme for the Device-to-Server Communication in the Internet of Medical Things](#)

Jiangfeng Sun;Fazlullah Khan;Junxia Li;Mohammad Dahman Alshehri;Ryan Alturki;Mohammad Wedyan

Publication Year: 2021,Page(s):15663 - 15671

Cited by: [Papers \(1\)](#)[HTML](#)[NeuroTrust—Artificial-Neural-Network-Based Intelligent Trust Management Mechanism for Large-Scale Internet of Medical Things](#)

Kamran Ahmad Awan;Ikram Ud Din;Ahmad Almogren;Hisham Almajed;Irfan Mohiuddin;Mohsen Guizani

Publication Year: 2021,Page(s):15672 - 15682

Cited by: [Papers \(1\)](#)[HTML](#)[Privacy-Enhanced Data Fusion for COVID-19 Applications in Intelligent Internet of Medical Things](#)

Hui Lin;Sahil Garg;Jia Hu;Xiaoding Wang;Md. Jalil Piran;M. Shamim Hossain

Publication Year: 2021,Page(s):15683 - 15693

Cited by: [Papers \(9\)](#)[HTML](#)[A Lightweight and Robust Secure Key Establishment Protocol for Internet of Medical Things in COVID-19 Patients Care](#)

Mehedi Masud;Gurjot Singh Gaba;Salman Alqahtani;Ghulam Muhammad;B. B. Gupta;Pardeep Kumar;Ahmed Ghoneim

Publication Year: 2021,Page(s):15694 - 15703

Cited by: [Papers \(1\)](#)[HTML](#)[Dependability and Security Quantification of an Internet of Medical Things Infrastructure Based on Cloud-Fog-Edge Continuum for Healthcare Monitoring Using Hierarchical Models](#)

Tuan Anh Nguyen;Dugki Min;Eunmi Choi;Jae-Woo Lee

Publication Year: 2021,Page(s):15704 - 15748

[HTML](#)[Task Offloading for Wireless VR-Enabled Medical Treatment With Blockchain Security Using Collective Reinforcement Learning](#)

Peng Lin;Qingyang Song;F. Richard Yu;Dan Wang;Lei Guo

Publication Year: 2021,Page(s):15749 - 15761

Cited by: [Papers \(2\)](#)[HTML](#)[MEdge-Chain: Leveraging Edge Computing and Blockchain for Efficient Medical Data Exchange](#)

Alaa Awad Abdellatif;Lutfi Samara;Amr Mohamed;Aiman Erbad;Carla Fabiana Chiasserini;Mohsen Guizani;Mark Dennis O'Connor;James Laughton

Publication Year: 2021,Page(s):15762 - 15775

[HTML](#)[Cross-Cluster Federated Learning and Blockchain for Internet of Medical Things](#)

Hai Jin;Xiaohai Dai;Jiang Xiao;Baochun Li;Huichuwu Li;Yan Zhang

Publication Year: 2021,Page(s):15776 - 15784

[HTML](#)[Blockchain and SGX-Enabled Edge-Computing-Empowered Secure IoMT Data Analysis](#)

Ying Gao;Hongliang Lin;Yijian Chen;Yangliang Liu

Publication Year: 2021,Page(s):15785 - 15795

[HTML](#)

[A First Look at Privacy Analysis of COVID-19 Contact-Tracing Mobile Applications](#)  
Muhammad Ajmal Azad;Junaid Arshad;Syed Muhammad Ali Akmal;Farhan Riaz;Sidrah Abdullah;Muhammad Imran;Farhan Ahmad  
Publication Year: 2021,Page(s):15796 - 15806  
Cited by: [Papers \(2\)](#)  
[HTML](#)

[A Noncontact Ballistocardiography-Based IoMT System for Cardiopulmonary Health Monitoring of Discharged COVID-19 Patients](#)  
Jikui Liu;Fen Miao;Liyan Yin;Zhiqiang Pang;Ye Li  
Publication Year: 2021,Page(s):15807 - 15817  
[HTML](#)

[A Smartphone App-Based Application Enabling Remote Assessments of Standing Balance During the COVID-19 Pandemic and Beyond](#)  
Junhong Zhou;Xin Jiang;Wanting Yu;Hao Zhu;On-Yee Lo;Natalia A. Gouskova;Thomas Trivison;Lewis A. Lipsitz;Alvaro Pascual-Leone;Brad Manor  
Publication Year: 2021,Page(s):15818 - 15828  
[HTML](#)

[An Adaptive Neurofeedback Method for Attention Regulation Based on the Internet of Things](#)  
Hanshu Cai;Yi Zhang;Han Xiao;Jian Zhang;Bin Hu;Xiping Hu  
Publication Year: 2021,Page(s):15829 - 15838  
[HTML](#)

[An Explainable System for Diagnosis and Prognosis of COVID-19](#)  
Jiayi Lu;Renchao Jin;Enmin Song;Mubarak Alrashoud;Khaled N. Al-Mutib;Mabrook S. Al-Rakhami  
Publication Year: 2021,Page(s):15839 - 15846  
[HTML](#)

[An Internet-of-Medical-Things-Enabled Edge Computing Framework for Tackling COVID-19](#)  
Md. Abdur Rahman;M. Shamim Hossain  
Publication Year: 2021,Page(s):15847 - 15854  
Cited by: [Papers \(4\)](#)  
[HTML](#)

[An IoT-Based Deep Learning Framework for Early Assessment of Covid-19](#)  
Imran Ahmed;Awais Ahmad;Gwanggil Jeon  
Publication Year: 2021,Page(s):15855 - 15862  
Cited by: [Papers \(4\)](#)  
[HTML](#)

[Contact Tracing Incentive for COVID-19 and Other Pandemic Diseases From a Crowdsourcing Perspective](#)  
Pengfei Wang;Chi Lin;Mohammad S. Obaidat;Zhen Yu;Ziqi Wei;Qiang Zhang  
Publication Year: 2021,Page(s):15863 - 15874  
Cited by: [Papers \(1\)](#)  
[HTML](#)

[Computation Offloading and Wireless Resource Management for Healthcare Monitoring in Fog-Computing-Based Internet of Medical Things](#)  
Yu Qiu;Haijun Zhang;Keping Long  
Publication Year: 2021,Page(s):15875 - 15883  
Cited by: [Papers \(3\)](#)  
[HTML](#)

[Dynamic-Fusion-Based Federated Learning for COVID-19 Detection](#)  
Weishan Zhang;Tao Zhou;Qinghua Lu;Xiao Wang;Chunsheng Zhu;Haoyun Sun;Zhipeng Wang;Sin Kit Lo;Fei-Yue Wang  
Publication Year: 2021,Page(s):15884 - 15891  
[HTML](#)

[Internet-of-Things-Enabled Data Fusion Method for Sleep Healthcare Applications](#)  
Fan Yang;Qilu Wu;Xiping Hu;Jiancong Ye;Yuting Yang;Haocong Rao;Rong Ma;Bin Hu  
Publication Year: 2021,Page(s):15892 - 15905  
Cited by: [Papers \(1\)](#)  
[HTML](#)

[Random-Forest-Bagging Broad Learning System With Applications for COVID-19 Pandemic](#)  
Choujun Zhan;Yufan Zheng;Haijun Zhang;Quansi Wen  
Publication Year: 2021,Page(s):15906 - 15918  
[HTML](#)

[Realizing an Effective COVID-19 Diagnosis System Based on Machine Learning and IoT in Smart Hospital Environment](#)  
Karrar Hameed Abdulkareem;Mazin Abed Mohammed;Ahmad Salim;Muhammad Arif;Oana Geman;Deepak Gupta;Ashish Khanna  
Publication Year: 2021,Page(s):15919 - 15928  
Cited by: [Papers \(8\)](#)  
[HTML](#)

[Real-Time Mask Identification for COVID-19: An Edge-Computing-Based Deep Learning Framework](#)  
Xiangjie Kong;Kailai Wang;Shupeng Wang;Xiaojie Wang;Xin Jiang;Yi Guo;Guojiang Shen;Xin Chen;Qichao Ni  
Publication Year: 2021,Page(s):15929 - 15938  
Cited by: [Papers \(5\)](#)  
[HTML](#)

[Resource Allocation for Multiuser Molecular Communication Systems Oriented to the Internet of Medical Things](#)  
Xuan Chen;Miaowen Wen;Chan-Byoung Chae;Lie-Liang Yang;Fei Ji;Kostromitin Konstantin Igorevich  
Publication Year: 2021,Page(s):15939 - 15952  
[HTML](#)

[Toward Combatting COVID-19: A Risk Assessment System](#)  
Qianlong Wang;Yifan Guo;Tianxi Ji;Xufei Wang;Bingfang Hu;Pan Li  
Publication Year: 2021,Page(s):15953 - 15964  
[HTML](#)

[Trustworthy and Intelligent COVID-19 Diagnostic IoMT Through XR and Deep-Learning-Based Clinic Data Access](#)  
Yonghang Tai;Bixuan Gao;Qiong Li;Zhengtao Yu;Chunsheng Zhu;Victor Chang  
Publication Year: 2021,Page(s):15965 - 15976  
Cited by: [Papers \(1\)](#)  
[HTML](#)

[ξboost: An AI-Based Data Analytics Scheme for COVID-19 Prediction and Economy Boosting](#)  
Darshan Vekaria;Aparna Kumari;Sudeep Tanwar;Neeraj Kumar  
Publication Year: 2021,Page(s):15977 - 15989  
Cited by: [Papers \(2\)](#)  
[HTML](#)

[Attention-Based Multilevel Co-Occurrence Graph Convolutional LSTM for 3-D Action Recognition](#)  
Shihao Xu;Haocong Rao;Hong Peng;Xin Jiang;Yi Guo;Xiping Hu;Bin Hu  
Publication Year: 2021,Page(s):15990 - 16001  
[HTML](#)

Emotion-Aware and Intelligent Internet of Medical Things Toward Emotion Recognition During COVID-19 Pandemic  
Tao Zhang;Minjie Liu;Tian Yuan;Najla Al-Nabhan  
Publication Year: 2021,Page(s):16002 - 16013  
Cited by: [Papers \(1\)](#)  
[HTML](#)

Hybrid Emotion-Aware Monitoring System Based on Brainwaves for Internet of Medical Things  
Weizhi Meng;Yong Cai;Laurence T. Yang;Wei-Yang Chiu  
Publication Year: 2021,Page(s):16014 - 16022  
[HTML](#)

Molecular-Type Permutation Shift Keying in Molecular MIMO Communications for IoBNT  
Yuankun Tang;Yu Huang;Chan-Byoung Chae;Wei Duan;Miaowen Wen;Lie-Liang Yang  
Publication Year: 2021,Page(s):16023 - 16034  
[HTML](#)

Computer Audition for Fighting the SARS-CoV-2 Corona Crisis—Introducing the Multitask Speech Corpus for COVID-19  
Kun Qian;Maximilian Schmitt;Huaiyuan Zheng;Tomoya Koike;Jing Han;Juan Liu;Wei Ji;Junjun Duan;Meishu Song;Zijiang Yang;Zhao Ren;Shuo Liu;Zixing Zhang;Yoshiharu Yamamoto;Björn W. Schuller  
Publication Year: 2021,Page(s):16035 - 16046  
Cited by: [Papers \(1\)](#)  
[HTML](#)

Disaster and Pandemic Management Using Machine Learning: A Survey  
Vinay Chamola;Vikas Hassija;Sakshi Gupta;Adit Goyal;Mohsen Guizani;Biplab Sikdar  
Publication Year: 2021,Page(s):16047 - 16071  
Cited by: [Papers \(2\)](#)  
[HTML](#)

The Role of Internet of Things to Control the Outbreak of COVID-19 Pandemic  
Aniello Castiglione;Muhammad Umer;Saima Sadiq;Mohammad S. Obaidat;Pandi Vijayakumar  
Publication Year: 2021,Page(s):16072 - 16082  
[HTML](#)

Mobile Sensor Deployment Optimization Algorithm for Maximizing Monitoring Capacity of Large-Scale Acyclic Directed Pipeline Networks in Smart Cities  
Junbin Liang;Jingke Tu;Victor C. M. Leung  
Publication Year: 2021,Page(s):16083 - 16095  
[HTML](#)

Distributed Soft Clustering Algorithm for IoT Based on Finite Time Average Consensus  
Hao Yu;Hui Chen;Shengjie Zhao;Qingjiang Shi  
Publication Year: 2021,Page(s):16096 - 16107  
[HTML](#)

Missing Data Imputation With Bayesian Maximum Entropy for Internet of Things Applications  
Aurora González-Vidal;Punit Rathore;Aravinda S. Rao;José Mendoza-Bernal;Marimuthu Palaniswami;Antonio F. Skarmeta-Gómez  
Publication Year: 2021,Page(s):16108 - 16120  
[HTML](#)

A Trusted Attestation Scheme for Data Source of Internet of Things in Smart City Based on Dynamic Trust Classification  
Bei Gong;Jianli Liu;Shaoyong Guo  
Publication Year: 2021,Page(s):16121 - 16141  
[HTML](#)

Heterogeneous Signcryption With Equality Test for IIoT Environment  
Hu Xiong;Yanan Zhao;Yingzhe Hou;Xin Huang;Chuanjie Jin;Lili Wang;Saru Kumari  
Publication Year: 2021,Page(s):16142 - 16152  
Cited by: [Papers \(4\)](#)  
[HTML](#)

Deep Q-Network-Based Feature Selection for Multisourced Data Cleaning  
Qianlong Wang;Yifan Guo;Lixing Yu;Xuhui Chen;Pan Li  
Publication Year: 2021,Page(s):16153 - 16164  
[HTML](#)

Mobile Semantic-Aware Trajectory for Personalized Location Privacy Preservation  
Guoying Qiu;Deke Guo;Yulong Shen;Guoming Tang;Sheng Chen  
Publication Year: 2021,Page(s):16165 - 16180  
[HTML](#)

I-ViSE: Interactive Video Surveillance as an Edge Service Using Unsupervised Feature Queries  
Seyed Yahya Nikouei;Yu Chen;Alex J. Aved;Erik Blasch  
Publication Year: 2021,Page(s):16181 - 16190  
Cited by: [Papers \(3\)](#)  
[HTML](#)

IEEE Internet of Things Journal  
Publication Year: 2021,Page(s):C3 - C3

Information for Authors  
Publication Year: 2021,Page(s):C4 - C4



# 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



NOVEMBER 15, 2021

VOLUME 8

NUMBER 22

IITJAU

(ISSN 2327-4662)

Front Cover

Publication Year: 2021,Page(s):C1 - C1

IEEE Internet of Things Journal

Publication Year: 2021,Page(s):C2 - C2

Table of contents

Publication Year: 2021,Page(s):i - iii

Guest Editorial Special Issue on Cybertwin-Driven 6G:  
Architectures, Methods, and Applications

Quan Yu;Miao Wang;Haibo Zhou;Jianbing Ni;Jiacheng  
Chen;Sandra Céspedes

Publication Year: 2021,Page(s):16191 - 16194

HTML

Efficient and Privacy-Preserving Speaker Recognition for  
Cybertwin-Driven 6G

Qi Li;Xiaodong Lin

Publication Year: 2021,Page(s):16195 - 16206

HTML

Reliable Cybertwin-Driven Concurrent Multipath Transfer With  
Deep Reinforcement Learning

Chengxiao Yu;Wei Quan;Deyun Gao;Yuming Zhang;Kang Liu;Wen  
Wu;Hongke Zhang;Xuemin Shen

Publication Year: 2021,Page(s):16207 - 16218

HTML

Adaptive Edge Association for Wireless Digital Twin Networks in 6G

Yunlong Lu;Sabita Maharjan;Yan Zhang

Publication Year: 2021,Page(s):16219 - 16230

HTML

Application of Cybertwin for Offloading in Mobile Multiaccess Edge  
Computing for 6G Networks

Tiago Koketsu Rodrigues;Jiajia Liu;Nei Kato

Publication Year: 2021,Page(s):16231 - 16242

HTML

Toward Privacy-Preserving Cybertwin-Based Spatiotemporal  
Keyword Query for ITS in 6G Era

Yunguo Guan;Rongxing Lu;Yandong Zheng;Songnian Zhang;Jun  
Shao;Guiyi Wei

Publication Year: 2021,Page(s):16243 - 16255

HTML

Multiagent Deep Reinforcement Learning for Task Offloading and  
Resource Allocation in Cybertwin-Based Networks

Wenjing Hou;Hong Wen;Huanhuan Song;Wenxin Lei;Wei Zhang

Publication Year: 2021,Page(s):16256 - 16268

HTML

Adaptive Artificial Intelligence for Resource-Constrained Connected  
Vehicles in Cybertwin-Driven 6G Network

Shuaiqi Shen;Chong Yu;Kuan Zhang;Song Ci

Publication Year: 2021,Page(s):16269 - 16278

HTML

Performance Study of Cybertwin-Assisted Random Access NOMA

Ziru Chen;Ran Zhang;Yong Liu;Lin X. Cai;Qingchun Chen

Publication Year: 2021,Page(s):16279 - 16289

HTML

Post-Quantum Secure Ring Signatures for Security and Privacy in  
the Cybertwin-Driven 6G

Jinhui Liu;Yong Yu;Kai Li;Le Gao

Publication Year: 2021,Page(s):16290 - 16300

HTML

Digital Twin for Federated Analytics Using a Bayesian Approach

Dawei Chen;Dan Wang;Yifei Zhu;Zhu Han

Publication Year: 2021,Page(s):16301 - 16312

HTML

Joint Virtual Network Topology Design and Embedding for  
Cybertwin-Enabled 6G Core Networks

Junling Li;Weisen Shi;Qiang Ye;Shan Zhang;Weihua

Zhuang;Xuemin Shen

Publication Year: 2021,Page(s):16313 - 16325

HTML

Learning-Based Transmission Protocol Customization for VoD

Streaming in Cybertwin-Enabled Next-Generation Core Networks

Si Yan;Qiang Ye;Weihua Zhuang

Publication Year: 2021,Page(s):16326 - 16336

HTML

Deep-Reinforcement-Learning-Based Cybertwin Architecture for 6G  
IIoT: An Integrated Design of Control, Communication, and  
Computing

Hansong Xu;Jun Wu;Jianhua Li;Xi Lin

Publication Year: 2021,Page(s):16337 - 16348

HTML

A Combinatorial Auction Resource Trading Mechanism for  
Cybertwin-Based 6G Network

Hui Liang;Huan Li;Wei Zhang

Publication Year: 2021,Page(s):16349 - 16358

HTML

GraphComm: Efficient Graph Convolutional Communication for  
Multiagent Cooperation

Quan Yuan;Xiaoyuan Fu;Ziyan Li;Guiyang Luo;Jinglin Li;Fangchun  
Yang

Publication Year: 2021,Page(s):16359 - 16369

HTML

Joint Placement of UPF and Edge Server for 6G Network

Yuanzhe Li;Xiao Ma;Mengwei Xu;Ao Zhou;Qibo Sun;Ning  
Zhang;Shangguang Wang

Publication Year: 2021,Page(s):16370 - 16378

HTML

Securing IoT Devices Using Dynamic Power Management:  
Machine Learning Approach

Nikhil Chawla;Arvind Singh;Harshit Kumar;Monodeep Kar;Saibal  
Mukhopadhyay

Publication Year: 2021,Page(s):16379 - 16394

Cited by: Papers (1)

HTML

Interdependence-Aware Game-Theoretic Framework for Secure  
Intelligent Transportation Systems

Aidin Ferdowsi;Abdelrahman Eldosouky;Walid Saad

Publication Year: 2021,Page(s):16395 - 16405

HTML

ComFlex: Composable and Flexible Resource Management for the  
IoT

Gyeongmin Lee;Bongjun Kim;Seungbin Song;Seonyeong  
Heo;Hanjun Kim

Publication Year: 2021,Page(s):16406 - 16417

HTML

OCF-to-ZigBee (O2Z) Bridging Technique and IoTivity-Based  
Implementation

Hyun Seob Oh;Seung Beom Seo;Gang Toe Lee;Wha Sook  
Jeon;Min Gyu Lee

Publication Year: 2021,Page(s):16418 - 16426

HTML

Energy-Efficient Deployment of IoT Applications in Edge-Based  
Infrastructures: A Software Product Line Approach

Angel Cañete;Mercedes Amor;Lidia Fuentes

Publication Year: 2021,Page(s):16427 - 16439

HTML

Dimension Reduction Algorithm Based on Adaptive Maximum  
Linear Neighborhood Selection in Edge Computing

Guangshun Li;Jiabin Cao;Junhua Wu;Xinrong Ren;Haili Yu

Publication Year: 2021,Page(s):16440 - 16451

Cited by: Papers (2)

HTML

Development of Mobile IoT Solutions: Approaches, Architectures,  
and Methodologies

Naercio Magaia;Pedro Gomes;Lion Silva;Breno

Sousa;Constantinos X. Mavromoustakis;George Mastorakis

Publication Year: 2021,Page(s):16452 - 16472

HTML

Fast Containment of Infectious Diseases With E-Healthcare Mobile  
Social Internet of Things

Qichao Xu;Zhou Su;Kuan Zhang;Shui Yu

Publication Year: 2021,Page(s):16473 - 16485

Cited by: Papers (3)

HTML

E-Textile Battery-Less Displacement and Strain Sensor for Human  
Activities Tracking

Yulong Liu;Mengxia Yu;Bingyi Xia;Silong Wang;Miao

Wang;Mingxun Chen;Siqi Dai;Tingzhe Wang;Terry Tao Ye

Publication Year: 2021,Page(s):16486 - 16497

HTML

Centipede: Leveraging the Distributed Camera Crowd for  
Cooperative Video Data Storage

Jiaping Yu;Haiwen Chen;Kui Wu;Tongqing Zhou;Zhiping Cai;Fang  
Liu

Publication Year: 2021,Page(s):16498 - 16509

Cited by: Papers (1)

HTML

FLAG: Flexible, Accurate, and Long-Time User Load Prediction in  
Large-Scale WiFi System Using Deep RNN

Wenxiong Chen;Feng Lyu;Fan Wu;Peng Yang;Ju Ren

Publication Year: 2021,Page(s):16510 - 16521

HTML

Centralized Resource Allocation and Distributed Power Control for  
NOMA-Integrated NR V2X

Fenghui Zhang;Michael Mao Wang;Xuecai Bao;Weirong Liu

Publication Year: 2021,Page(s):16522 - 16534

HTML

Enhancing IoT Security via Cancelable HD-sEMG-Based Biometric  
Authentication Password, Encoded by Gesture

Xinyu Jiang;Xiangyu Liu;Jiahao Fan;Xinming Ye;Chenyun

Dai;Edward A. Clancy;Dario Farina;Wei Chen

Publication Year: 2021,Page(s):16535 - 16547

Cited by: Papers (2)

HTML

Agents-Based Algorithm for a Distributed Information System in  
Internet of Things

Agostino Forestiero;Giuseppe Papuzzo

Publication Year: 2021,Page(s):16548 - 16558

Cited by: Papers (1)

HTML

Optimization of Relay Power and Load Control Period Based on  
Cost-Sharing Contract in Smart Grid Communications

Pei Liu;Kai Ma;Jie Yang;Bo Yang;Zhixin Liu;Xinping Guan

Publication Year: 2021,Page(s):16559 - 16570

HTML

Reliable Random Access for Decentralized UAV Networks Based  
on Raptor Codes

Jin Shang;Wenjun Xu;Zhi Zhang;Yongjian Fan;Jiaru Lin

Publication Year: 2021,Page(s):16571 - 16584

HTML

$\alpha$ -BAME: Distributed Blockchain-Based Anonymous Mobile  
Electronic Voting

Ehab Zaghloul;Tongtong Li;Jian Ren

Publication Year: 2021,Page(s):16585 - 16597

HTML

Performance Analysis of Delay Distribution and Packet Loss Ratio for Body-to-Body Networks  
Xiaolong Li;Jun Cai;Junfeng Yang;Liyong Guo;Shaonian Huang;Yunfei Yi  
Publication Year: 2021,Page(s):16598 - 16612  
HTML

Provably Secure Authentication Protocol for Mobile Clients in IoT Environment Using Puncturable Pseudorandom Function  
Muhammad Asad Saleem;Zahid Ghaffar;Khalid Mahmood;Ashok Kumar Das;Joel J. P. C. Rodrigues;Muhammad Khurram Khan  
Publication Year: 2021,Page(s):16613 - 16622  
HTML

mmHRV: Contactless Heart Rate Variability Monitoring Using Millimeter-Wave Radio  
Fengyu Wang;Xiaolu Zeng;Chenshu Wu;Beibei Wang;K. J. Ray Liu  
Publication Year: 2021,Page(s):16623 - 16636  
HTML

SCUBA: An In-Device Multiplexed Protocol for Sidelink Communication on Unlicensed Bands  
Vishnu Rajendran;Gautham Prasad;Lutz Lampe;Gus Vos  
Publication Year: 2021,Page(s):16637 - 16652  
HTML

Relay-Aided Wireless Sensor Network Discovery Algorithm for Dense Industrial IoT Utilizing ESPAR Antennas  
Fjolla Ademaj;Mateusz Rzymowski;Hans-Peter Bernhard;Krzysztof Nyka;Lukasz Kulas  
Publication Year: 2021,Page(s):16653 - 16665  
HTML

*SenseMag*: Enabling Low-Cost Traffic Monitoring Using Noninvasive Magnetic Sensing  
Kafeng Wang;Haoyi Xiong;Jie Zhang;Hongyang Chen;Dejing Dou;Cheng-Zhong Xu  
Publication Year: 2021,Page(s):16666 - 16679  
HTML

Detecting Video Game Player Burnout With the Use of Sensor Data and Machine Learning  
Anton Smerdov;Andrey Somov;Evgeny Burnaev;Bo Zhou;Paul Lukowicz  
Publication Year: 2021,Page(s):16680 - 16691  
HTML

Collection of Data With Drones in Precision Agriculture: Analytical Model and LoRa Case Study  
Antonio Caruso;Stefano Chessa;Soledad Escolar;Jesús Barba;Juan Carlos López  
Publication Year: 2021,Page(s):16692 - 16704  
Cited by: Papers (2)  
HTML

Chitchat: Efficient and Reliable Decoding of Two-Transmitter Superimposed Signals for IoT  
Wen Cui;Chen Liu;Lin Cai  
Publication Year: 2021,Page(s):16705 - 16717  
HTML

IEEE Internet of Things Journal  
Publication Year: 2021,Page(s):C3 - C3

Information for Authors  
Publication Year: 2021,Page(s):C4 - C4

# 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



NOVEMBER 2021

VOLUME 25

NUMBER 11

IJBHA9

(ISSN 2168-2194)

Frontcover

Publication Year: 2021,Page(s):C1 - C1

IEEE Journal of Biomedical and Health Informatics

Publication Year: 2021,Page(s):C2 - C2

Table of Contents

Publication Year: 2021,Page(s):4064 - 4065

Guest Editorial Innovative Data Analysis Methods for Biomedicine  
Pierangelo Veltri

Publication Year: 2021,Page(s):4066 - 4067

HTML

Effective Clustering for Single Cell Sequencing Cancer Data

Simone Ciccolella;Murray Patterson;Paola Bonizzoni;Gianluca Della Vedova

Publication Year: 2021,Page(s):4068 - 4078

HTML

Human Protein Complex-Based Drug Signatures for Personalized  
Cancer Medicine

Fei Wang;Yulian Ding;Xiujuan Lei;Bo Liao;Fang-Xiang Wu

Publication Year: 2021,Page(s):4079 - 4088

HTML

Proximity of Cellular and Physiological Response Failures in Sepsis

Ali Jazayeri;Muge Capan;Julie Ivy;Ryan Arnold;Christopher C. Yang

Publication Year: 2021,Page(s):4089 - 4097

HTML

A Computational Framework to Analyze the Associations Between  
Symptoms and Cancer Patient Attributes Post Chemotherapy Using  
EHR Data

Xiao Luo;Priyanka Gandhi;Susan Storey;Zuoyi Zhang;Zhi Han;Kun  
Huang

Publication Year: 2021,Page(s):4098 - 4109

HTML

Integrated Clinical and CT Based Artificial Intelligence Nomogram  
for Predicting Severity and Need for Ventilator Support in COVID-  
19 Patients: A Multi-Site Study

Amogh Hiremath;Kaustav Bera;Lei Yuan;Pranjal Vaidya;Mehdi  
Alilou;Jennifer Furin;Keith Armitage;Robert Gilkeson;Mengyao  
Ji;Pingfu Fu;Amit Gupta;Cheng Lu;Anant Madabhushi

Publication Year: 2021,Page(s):4110 - 4118

HTML

COVID-19 Screening in Chest X-Ray Images Using Lung Region  
Priors

Jianpeng An;Qing Cai;Zhiyong Qu;Zhongke Gao

Publication Year: 2021,Page(s):4119 - 4127

HTML

Systematic Review of Artificial Intelligence in Acute Respiratory  
Distress Syndrome for COVID-19 Lung Patients: A Biomedical  
Imaging Perspective

Jasjit S. Suri;Sushant Agarwal;Suneet K. Gupta;Anudeep  
Puvvula;Klaudija Viskovic;Neha Suri;Azra Alizad;Ayman El-  
Baz;Luca Saba;Mostafa Fatemi;D. Subbaram Naidu

Publication Year: 2021,Page(s):4128 - 4139

HTML

Self-Ensembling Co-Training Framework for Semi-Supervised COVID-19 CT Segmentation  
Caizi Li;Li Dong;Qi Dou;Fan Lin;Kebao Zhang;Zuxin Feng;Weixin Si;Xuesong Deng;Zhe Deng;Pheng-Ann Heng  
Publication Year: 2021,Page(s):4140 - 4151  
HTML

Exploiting Shared Knowledge From Non-COVID Lesions for Annotation-Efficient COVID-19 CT Lung Infection Segmentation  
Yichi Zhang;Qingcheng Liao;Lin Yuan;He Zhu;Jiezhen Xing;Jicong Zhang  
Publication Year: 2021,Page(s):4152 - 4162  
Cited by: Papers (1)  
HTML

Interactive Effects of HRV and P-QRS-T on the Power Density Spectra of ECG Signals  
Ting Xiang;Nan Ji;David A. Clifton;Lei Lu;Yuan-Ting Zhang  
Publication Year: 2021,Page(s):4163 - 4174  
HTML

Heartbeats Classification Using Hybrid Time-Frequency Analysis and Transfer Learning Based on ResNet  
Yatao Zhang;Junyan Li;Shoushui Wei;Fengyu Zhou;Dong Li  
Publication Year: 2021,Page(s):4175 - 4184  
HTML

Estimation of Apnea-Hypopnea Index Using Deep Learning On 3-D Craniofacial Scans  
Umaer Hanif;Eileen B. Leary;Logan D. Schneider;Rasmus R. Paulsen;Anne Marie Morse;Adam Blackman;Paula K. Schweitzer;Clete A. Kushida;Stanley Y. Liu;Poul Jennum;Helge B. D. Sorensen;Emmanuel J. M. Mignot  
Publication Year: 2021,Page(s):4185 - 4194  
HTML

Towards Predictive Analysis on Disease Progression: A Variational Hawkes Process Model  
Zhaohong Sun;Zhoujian Sun;Wei Dong;Jinlong Shi;Zhengxing Huang  
Publication Year: 2021,Page(s):4195 - 4206  
HTML

Prediction of Sepsis Related Mortality: An Optimization Approach  
Joseph K. Agor;Ni Luh Putu S. P. Paramita;Osman Y. Özaltn  
Publication Year: 2021,Page(s):4207 - 4216  
HTML

Toward a Remote Assessment of Walking Bout and Speed: Application in Patients With Multiple Sclerosis  
Arash Atrsaee;Farzin Dadashi;Benoit Mariani;Roman Gonzenbach;Kamiar Aminian  
Publication Year: 2021,Page(s):4217 - 4228  
HTML

dbMCS: A Database for Exploring the Mutation Markers of Anti-Cancer Drug Sensitivity  
Yueyue Shen;Youhua Zhang;Wei Xue;Zhenyu Yue  
Publication Year: 2021,Page(s):4229 - 4237  
HTML

IEEE Journal of Biomedical and Health Informatics (J-BHI)  
Publication Year: 2021,Page(s):C3 - C3

# IEEE TRANSACTIONS ON SMART GRID

A PUBLICATION OF THE IEEE POWER & ENERGY SOCIETY



TECHNICALLY COSPONSORED BY THE IEEE COMMUNICATIONS SOCIETY,  
THE IEEE COMPUTATIONAL INTELLIGENCE SOCIETY, THE IEEE COMPUTER SOCIETY,  
THE IEEE CONSUMER ELECTRONICS SOCIETY, THE IEEE CONTROL SYSTEMS SOCIETY,  
THE IEEE INDUSTRIAL ELECTRONICS SOCIETY, THE IEEE INDUSTRY APPLICATIONS SOCIETY,  
THE IEEE INSTRUMENTATION AND MEASUREMENT SOCIETY, THE IEEE POWER ELECTRONICS SOCIETY  
AND THE IEEE SIGNAL PROCESSING SOCIETY



NOVEMBER 2021

VOLUME 12

NUMBER 6

ITSGBQ

(ISSN 1949-3053)

## Table of contents

Publication Year: 2021,Page(s):C1 - 4583

## IEEE Transactions on Smart Grid Publication Information

Publication Year: 2021,Page(s):C2 - C2

Distributed State of Charge-Based Droop Control Algorithm for Reducing Power Losses in Multi-Port Converter-Enabled Solar DC Nano-Grids

Cephas Samende;Sivapriya M. Bhagavathy;Malcolm McCulloch  
Publication Year: 2021,Page(s):4584 - 4594  
HTML

Distributed Optimization for Integrated Frequency Regulation and Economic Dispatch in Microgrids

Yiqiao Xu;Zhen Dong;Zhongguo Li;Yixing Liu;Zhengtao Ding  
Publication Year: 2021,Page(s):4595 - 4606  
HTML

Distributed Control of DC Microgrids for Optimal Coordination of Conventional and Renewable Generators

Zhen Fan;Bo Fan;Wenxin Liu  
Publication Year: 2021,Page(s):4607 - 4615  
HTML

A Converter-Based Power System Stabilizer for Stability Enhancement of Droop-Controlled Islanded Microgrids

Ke Guo;Yang Qi;Jiale Yu;David Frey;Yi Tang  
Publication Year: 2021,Page(s):4616 - 4626  
HTML

Parallel and Distributed Optimization Method With Constraint Decomposition for Energy Management of Microgrids

Qiang Li;Yuexi Liao;Kunming Wu;Leiqi Zhang;Jiayang Lin;Minyou Chen;Josep M. Guerrero;Derek Abbott  
Publication Year: 2021,Page(s):4627 - 4640  
HTML

Supplementary Feedforward Control of DGs in a Reconfigurable Microgrid for Load Restoration

Jae-Young Park;Jaepil Ban;Young-Jin Kim;Xiaonan Lu  
Publication Year: 2021,Page(s):4641 - 4654  
HTML

Stability Analysis of Microgrid Islanding Transients Based on Interconnected Dissipative Subsystems

Martijn H. Roos;Phuong H. Nguyen;Johan Morren;J. G. Slootweg  
Publication Year: 2021,Page(s):4655 - 4667  
HTML

An Energy Management System With Short-Term Fluctuation Reserves and Battery Degradation for Isolated Microgrids

Samuel Córdova;Claudio Cañizares;Álvaro Lorca;Daniel E. Olivares  
Publication Year: 2021,Page(s):4668 - 4680  
HTML

Stability Analysis of Low-Voltage Distribution Feeders Operated as Islanded Microgrids

Bowen Wang;Gregor Verbič  
Publication Year: 2021,Page(s):4681 - 4689  
HTML



Characteristics of Parallel Inverters Applying Virtual Synchronous Generator Control  
Meng Chen;Dao Zhou;Chao Wu;Frede Blaabjerg  
Publication Year: 2021,Page(s):4690 - 4701  
HTML

Blockchain for Transacting Energy and Carbon Allowance in Networked Microgrids  
Mingyu Yan;Mohammad Shahidehpour;Ahmed Alabdulwahab;Abdullah Abusorrah;Niroj Gurung;Honghao Zheng;Oladipupo Ogunnubi;Aleksandar Vukojevic;Esa Aleks Paaso  
Publication Year: 2021,Page(s):4702 - 4714  
HTML

Power Loss Minimization of Off-Grid Solar DC Nano-Grids—Part I: Centralized Control Algorithm  
Cephas Samende;Sivapriya M. Bhagavathy;Malcolm McCulloch  
Publication Year: 2021,Page(s):4715 - 4725  
HTML

A Scalable Control Design for Grid-Forming Inverters in Microgrids  
Jeremy D. Watson;Yemi Ojo;Khaled Laib;Ioannis Lestas  
Publication Year: 2021,Page(s):4726 - 4739  
HTML

An MILP Model for Optimal Placement of Sectionalizing Switches and Tie Lines in Distribution Networks With Complex Topologies  
Mohammad Jooshaki;Sahand Karimi-Arpanahi;Matti Lehtonen;R. John Millar;Mahmud Fotuhi-Firuzabad  
Publication Year: 2021,Page(s):4740 - 4751  
HTML

Hierarchical Voltage Control Strategy in Distribution Networks Considering Customized Charging Navigation of Electric Vehicles  
Xianzhuo Sun;Jing Qiu  
Publication Year: 2021,Page(s):4752 - 4764  
HTML

Adaptive Master-Slave Control Strategy for Medium Voltage DC Distribution Systems Based on a Novel Nonlinear Droop Controller  
Xingfeng Xie;Xiangjun Quan;Zaijun Wu;Xiaoyong Cao;Xiaobo Dou;Qinran Hu  
Publication Year: 2021,Page(s):4765 - 4777  
HTML

Two-Time-Scale Energy Management for Microgrids With Data-Based Day-Ahead Distributionally Robust Chance-Constrained Scheduling  
Zhi-Peng Yuan;Jing Xia;Peng Li  
Publication Year: 2021,Page(s):4778 - 4787  
HTML

Dynamic Security Control in Heat and Electricity Integrated Energy System With an Equivalent Heating Network Model  
Suhan Zhang;Wei Gu;Shuai Lu;Shuai Yao;Suyang Zhou;Xiaogang Chen  
Publication Year: 2021,Page(s):4788 - 4798  
HTML

Resilience-Motivated Distribution System Restoration Considering Electricity-Water-Gas Interdependency  
Jiaxu Li;Yin Xu;Ying Wang;Meng Li;Jinghan He;Chen-Ching Liu;Kevin P. Schneider  
Publication Year: 2021,Page(s):4799 - 4812  
HTML

Dynamic Stochastic Demand Response With Energy Storage  
Yuanzhang Xiao;Mihaela van der Schaar  
Publication Year: 2021,Page(s):4813 - 4821  
HTML

Continuous Group-Wise Double Auction for Prosumers in Distribution-Level Markets  
Ankun Yu;Xiaoying Tang;Ying Jun Zhang;Jianwei Huang  
Publication Year: 2021,Page(s):4822 - 4833  
HTML

Optimal Energy Management of Microgrids Using Quantum Teaching Learning Based Algorithm  
L. Phani Raghav;R. Seshu Kumar;D. Koteswara Raju;Arvind R. Singh  
Publication Year: 2021,Page(s):4834 - 4842  
Cited by: Papers (4)  
HTML

Online Learning and Distributed Control for Residential Demand Response  
Xin Chen;Yingying Li;Jun Shimada;Na Li  
Publication Year: 2021,Page(s):4843 - 4853  
HTML

Linear Quadratic Regulator Based Smooth Transition Between Microgrid Operation Modes  
Mohyedin Ganjian-Aboukheili;Majid Shahabi;Qobad Shafiee;Josep M. Guerrero  
Publication Year: 2021,Page(s):4854 - 4864  
HTML

Robust Hybrid Control for Demand Side Management in Islanded Microgrids  
Carolina Albea;Carlos Bordons;Miguel A. Ridao  
Publication Year: 2021,Page(s):4865 - 4875  
HTML

Two-Stage Decoupled Estimation Approach of Aggregated Baseline Load Under High Penetration of Behind-the-Meter PV System  
Kangping Li;Jichuan Yan;Lin Hu;Fei Wang;Ning Zhang  
Publication Year: 2021,Page(s):4876 - 4885  
HTML

Iteration-Based Linearized Distribution-Level Locational Marginal Price for Three-Phase Unbalanced Distribution Systems  
Mengmeng Cai;Rui Yang;Yingchen Zhang  
Publication Year: 2021,Page(s):4886 - 4896  
HTML

Learning-Based Predictive Control via Real-Time Aggregate Flexibility  
Tongxin Li;Bo Sun;Yue Chen;Zixin Ye;Steven H. Low;Adam Wierman  
Publication Year: 2021,Page(s):4897 - 4913  
HTML

Frequency-Constrained Resilient Scheduling of Microgrid: A Distributionally Robust Approach  
Zhongda Chu;Ning Zhang;Fei Teng  
Publication Year: 2021,Page(s):4914 - 4925  
HTML

Distributionally Robust Microgrid Formation Approach for Service Restoration Under Random Contingency  
Sheng Cai;Yunyun Xie;Qiuwei Wu;Menglin Zhang;Xiaolong Jin;Zhengrong Xiang  
Publication Year: 2021,Page(s):4926 - 4937  
Cited by: Papers (1)  
HTML

Comprehensive Analytical Expressions for Assessing and Maximizing Technical Benefits of Photovoltaics to Distribution Systems  
Karar Mahmoud;Matti Lehtonen  
Publication Year: 2021,Page(s):4938 - 4949  
Cited by: Papers (4)  
HTML

Prioritized Replay Dueling DDQN Based Grid-Edge Control of Community Energy Storage System  
Hang Song;Youbu Liu;Junbo Zhao;Junyong Liu;Gang Wu  
Publication Year: 2021,Page(s):4950 - 4961  
HTML

Fast Islanding Detection of Nested Grids Including Multiple Resources Based on Phase Criteria  
Reza Zamani;Mohsen Parsa Moghaddam;Habib Panahi;Majid Sanaye-Pasand  
Publication Year: 2021,Page(s):4962 - 4970  
HTML

Provision of Primary Frequency Response as Ancillary Service From Active Distribution Networks to the Transmission System  
Eleftherios O. Kontis;Álvaro Rodríguez del Nozal;Juan M. Mauricio;Charis S. Demoulias  
Publication Year: 2021,Page(s):4971 - 4982  
HTML

Transient Voltage Stability of Paralleled Synchronous and Virtual Synchronous Generators With Induction Motor Loads  
Huijie Cheng;Wen Huang;Chao Shen;Yelun Peng;Zhikang Shuai;Z. John Shen  
Publication Year: 2021,Page(s):4983 - 4999  
HTML

Privacy-Preserving Distributed Average Observers in Distribution Systems With Grid-Forming Inverters  
Yuhua Du;Hao Tu;Xiaonan Lu;Srdjan Lukic  
Publication Year: 2021,Page(s):5000 - 5010  
HTML

Probabilistic Forecasting of Regional Net-Load With Conditional Extremes and Gridded NWP  
Jethro Browell;Matteo Fasiolo  
Publication Year: 2021,Page(s):5011 - 5019  
HTML

LVRT Operation Enhancement of Single-Stage Photovoltaic Power Plants: An Analytical Approach  
Mojtaba Nasiri;Ali Arzani;Josep M. Guerrero  
Publication Year: 2021,Page(s):5020 - 5029  
HTML

Chance Constrained Scheduling and Pricing for Multi-Service Battery Energy Storage  
Weifeng Zhong;Kan Xie;Yi Liu;Shengli Xie;Lihua Xie  
Publication Year: 2021,Page(s):5030 - 5042  
HTML

Aggregate Flexibility of Virtual Power Plants With Temporal Coupling Constraints  
Siyuan Wang;Wenchuan Wu  
Publication Year: 2021,Page(s):5043 - 5051  
HTML

Including Dynamic Line Rating Into the Optimal Planning of Distributed Energy Resources  
Kateryna Morozovska;Miguel Heleno;Alan Valenzuela Meza;Patrik Hilber  
Publication Year: 2021,Page(s):5052 - 5059  
HTML

On the Use of Common Information Model for Smart Grid Applications — A Conceptual Approach  
Kamal Shahid;Karthikeyan Nainar;Rasmus Løvenstein Olsen;Florin Iov;Michael Lyhne;Gabriele Morgante  
Publication Year: 2021,Page(s):5060 - 5072  
HTML

Online Detection of Inter-Turn Winding Faults in Single-Phase Distribution Transformers Using Smart Meter Data  
Kavya Ashok;Dan Li;Nagi Gebraeel;Deepak Divan  
Publication Year: 2021,Page(s):5073 - 5083  
HTML

Enriching Load Data Using Micro-PMUs and Smart Meters  
Fankun Bu;Kaveh Dehghanpour;Zhaoyu Wang  
Publication Year: 2021,Page(s):5084 - 5094  
HTML

Fault Location Method for Three-Terminal Lines in Distribution Network Based on Line Voltage Measured by  $\mu$ MPMU  
Zhihao Yun;Tao Wen;Chengbin Wang  
Publication Year: 2021,Page(s):5095 - 5112  
HTML

ACN-Sim: An Open-Source Simulator for Data-Driven Electric Vehicle Charging Research  
Zachary J. Lee;Sunash Sharma;Daniel Johansson;Steven H. Low  
Publication Year: 2021,Page(s):5113 - 5123  
Cited by: Papers (1)  
HTML

Deep Reinforcement Learning for Continuous Electric Vehicles Charging Control With Dynamic User Behaviors  
Linfang Yan;Xia Chen;Jianyu Zhou;Yin Chen;Jinyu Wen  
Publication Year: 2021,Page(s):5124 - 5134  
HTML

Integrating Battery Aging in the Optimization for Bidirectional Charging of Electric Vehicles  
Karl Schwenk;Stefan Meisenbacher;Benjamin Briegel;Tim Harr;Veit Hagenmeyer;Ralf Mikut  
Publication Year: 2021,Page(s):5135 - 5145  
HTML

Hierarchical Coupled Driving-and-Charging Model of Electric Vehicles, Stations and Grid Operators  
Benoit Sohet;Yezekael Hayel;Olivier Beaude;Alban Jeandin  
Publication Year: 2021,Page(s):5146 - 5157  
HTML

Data-Driven Stochastic Game With Social Attributes for Peer-to-Peer Energy Sharing  
Liudong Chen;Nian Liu;Liangying Liu;Xinghuo Yu;Yusheng Xue  
Publication Year: 2021,Page(s):5158 - 5171  
HTML

Data-Driven Distributionally Robust Co-Optimization of P2P Energy Trading and Network Operation for Interconnected Microgrids  
Jiayong Li;Mohammad E. Khodayar;Jianhui Wang;Bin Zhou  
Publication Year: 2021,Page(s):5172 - 5184  
HTML

A Scalable Privacy-Preserving Multi-Agent Deep Reinforcement Learning Approach for Large-Scale Peer-to-Peer Transactive Energy Trading  
Yujian Ye;Yi Tang;Huiyu Wang;Xiao-Ping Zhang;Goran Strbac  
Publication Year: 2021,Page(s):5185 - 5200  
HTML

Price-Maker Bidding and Offering Strategies for Networked Microgrids in Day-Ahead Electricity Markets  
Bo Hu;Yuzhong Gong;C. Y. Chung;Bram F. Noble;Greg Poelzer  
Publication Year: 2021,Page(s):5201 - 5211  
HTML

A Privacy-Preserving Homomorphic Scheme With Multiple Dimensions and Fault Tolerance for Metering Data Aggregation in Smart Grid  
Amin Mohammadali;Mohammad Sayad Haghighi  
Publication Year: 2021,Page(s):5212 - 5220  
Cited by: Papers (1)  
HTML

A Cyber Attack Mitigation Scheme for Series Compensated DFIG-Based Wind Parks  
Mohsen Ghafouri;Ulas Karaagac;Amir Ameli;Jun Yan;Chadi Assi  
Publication Year: 2021,Page(s):5221 - 5232  
HTML

A Homomorphic Encryption-Based Private Collaborative Distributed Energy Management System  
Zheyuan Cheng;Feng Ye;Xianghui Cao;Mo-Yuen Chow  
Publication Year: 2021,Page(s):5233 - 5243  
Cited by: Papers (1)  
HTML

Moving-Target Defense Against Cyber-Physical Attacks in Power Grids via Game Theory  
Subhash Lakshminarayana;E. Veronica Belmega;H. Vincent Poor  
Publication Year: 2021,Page(s):5244 - 5257  
HTML

Protection Against False Data Injection Attacks Considering Degrees of Freedom in Attack Vectors  
T. S. Sreeram;S. Krishna  
Publication Year: 2021,Page(s):5258 - 5267  
HTML

Blockchain Based Secure Data Aggregation and Distributed Power Dispatching for Microgrids  
Xinyi Luo;Kaiping Xue;Jie Xu;Qibin Sun;Yongdong Zhang  
Publication Year: 2021,Page(s):5268 - 5279  
HTML

A New AC False Data Injection Attack Method Without Network Information  
Runhai Jiao;Gangyi Xun;Xuan Liu;Guangwei Yan  
Publication Year: 2021,Page(s):5280 - 5289  
HTML

Signcryption Based Authenticated and Key Exchange Protocol for EI-Based V2G Environment  
Shafiq Ahmed;Salman Shamshad;Zahid Ghaffar;Khalid Mahmood;Neeraj Kumar;Reza M. Parizi;Kim-Kwang Raymond Choo  
Publication Year: 2021,Page(s):5290 - 5298  
HTML

Joint Topology Identification and State Estimation in Unobservable Distribution Grids  
Hazhar Sufi Karimi;Balasubramaniam Natarajan  
Publication Year: 2021,Page(s):5299 - 5309  
HTML

Artificial Neural Network-Based Stealth Attack on Battery Energy Storage Systems  
Marco Pasetti;Paolo Ferrari;Paolo Bellagente;Emiliano Sisinni;Alan Oliveira de Sá;Charles B. do Prado;Rodrigo P. David;Raphael Carlos Santos Machado  
Publication Year: 2021,Page(s):5310 - 5321  
HTML

An Optimization-Based Approach to Recover the Detected Attacked Grid Variables After False Data Injection Attack  
Mohsen Jorjani;Hossein Seifi;Ali Yazdian Varjani;Hamed Delkhosh  
Publication Year: 2021,Page(s):5322 - 5334  
HTML

A Privacy-Aware Reconfigurable Authenticated Key Exchange Scheme for Secure Communication in Smart Grids  
Prosanta Gope;Biplab Sikdar  
Publication Year: 2021,Page(s):5335 - 5348  
HTML

Targeted False Data Injection Attacks Against AC State Estimation Without Network Parameters  
Mingqiu Du;Georgia Pierrou;Xiaozhe Wang;Marthe Kassouf  
Publication Year: 2021,Page(s):5349 - 5361  
HTML

Hybrid Multitask Multi-Information Fusion Deep Learning for Household Short-Term Load Forecasting  
Lianjie Jiang;Xinli Wang;Wei Li;Lei Wang;Xiaohong Yin;Lei Jia  
Publication Year: 2021,Page(s):5362 - 5372  
HTML

Spatial-Temporal Residential Short-Term Load Forecasting via Graph Neural Networks  
Weixuan Lin;Di Wu;Benoit Boulet  
Publication Year: 2021,Page(s):5373 - 5384  
HTML

Distribution Network Reconfiguration for Short-Term Voltage Stability Enhancement: An Efficient Deep Learning Approach  
Wanjun Huang;Weiye Zheng;David J. Hill  
Publication Year: 2021,Page(s):5385 - 5395  
HTML

An Adaptive Ensemble Data Driven Approach for Nonparametric Probabilistic Forecasting of Electricity Load  
Can Wan;Zhaojing Cao;Wei-Jen Lee;Yonghua Song;Ping Ju  
Publication Year: 2021,Page(s):5396 - 5408  
HTML

Data-Driven Copy-Paste Imputation for Energy Time Series  
Moritz Weber;Marian Turowski;Hüseyin K. Çakmak;Ralf Mikut;Uwe Kühnapfel;Veit Hagenmeyer  
Publication Year: 2021,Page(s):5409 - 5419  
HTML

Robust Regional Coordination of Inverter-Based Volt/Var Control via Multi-Agent Deep Reinforcement Learning  
Hangyue Liu;Cuo Zhang;Qingmian Chai;Ke Meng;Qinglai Guo;Zhao Yang Dong  
Publication Year: 2021,Page(s):5420 - 5433  
HTML

Enhancing the Spatio-Temporal Observability of Grid-Edge Resources in Distribution Grids  
Shanny Lin;Hao Zhu  
Publication Year: 2021,Page(s):5434 - 5443  
HTML

Deep Learning Method With Manual Post-Processing for Identification of Spectral Patterns of Waveform Distortion in PV Installations  
Roger Alves de Oliveira;Vineetha Ravindran;Sarah K. Rönnberg;Math H. J. Bollen  
Publication Year: 2021,Page(s):5444 - 5456  
HTML

An Asynchronous Forward-Backward-Splitting Power Flow Algorithm of Coupled Transmission and Active Distribution Systems  
Kunjie Tang;Shufeng Dong;Yonghua Song  
Publication Year: 2021,Page(s):5457 - 5471  
HTML

Spatial–Temporal Data Analysis-Based Event Detection in Weakly Damped Power Systems  
Lipeng Zhu;David J. Hill  
Publication Year: 2021,Page(s):5472 - 5474  
HTML

A Novel Energy Sharing Mechanism for Smart Microgrid  
Shenglin Li;Jizhong Zhu;Hanjiang Dong  
Publication Year: 2021,Page(s):5475 - 5478  
HTML

Branching Dueling Q-Network-Based Online Scheduling of a Microgrid With Distributed Energy Storage Systems  
Hang Shuai;Fangxing Li;Héctor Pulgar-Painemal;Yaosuo Xue  
Publication Year: 2021,Page(s):5479 - 5482  
HTML

TechRxiv: Share Your Preprint Research with the World  
Publication Year: 2021,Page(s):5483 - 5483

Introducing IEEE Collabratec  
Publication Year: 2021,Page(s):5484 - 5484

IEEE Power Engineering Society Information for Authors  
Publication Year: 2021,Page(s):C3 - C3

Blank Page  
Publication Year: 2021,Page(s):C4 - C4

# IEEE Open Journal of the Communications Society

## 2021: July-

Cell-Free and User-Centric Massive MIMO Architectures for Reliable Communications in Indoor Factory Environments  
Mario Alonzo;Paolo Baracca;Saeed R. Khosravirad;Stefano Buzzi  
Publication Year: 2021,Page(s):1390 - 1404  
HTML

Continuous-Phase Modulation for DFT-Spread Localized OFDM  
Jeonghoon Choi;Joon Ho Cho;James S. Lehnert  
Publication Year: 2021,Page(s):1405 - 1418  
HTML

A Three Dimensional MIMO Channel Model for Unmanned Aerial Vehicle in Urban Environments  
Horacio A. Mendoza;Graciela Corral-Briones  
Publication Year: 2021,Page(s):1419 - 1430  
HTML

Energy Efficiency Maximization for Symbiotic Radio Networks With Multiple Backscatter Devices  
Haohang Yang;Yinghui Ye;Kai Liang;Xiaoli Chu  
Publication Year: 2021,Page(s):1431 - 1444  
HTML

An Adaptive Full-Duplex/Half-Duplex Multiuser Cooperative D2D Communications System With Best User Selection  
Rahul Bajpai;Naveen Gupta;Vivek Ashok Bohara  
Publication Year: 2021,Page(s):1445 - 1457  
HTML

Coded Caching for Time-Varying Files Popularities and Asynchronous Delivery  
Mohamed Amir;Ebrahim Bedeer;Mohamed Hossam Ahmed;Tamer Khattab  
Publication Year: 2021,Page(s):1458 - 1472  
HTML

Hardware and Interference Limited Cooperative CR-NOMA Networks Under Imperfect SIC and CSI  
Sultangali Arzykulov;Galymzhan Naurzybayev;Abdulkadir Celik;Ahmed M. Eltawil  
Publication Year: 2021,Page(s):1473 - 1485  
HTML

*Learning to Fly*: A Distributed Deep Reinforcement Learning Framework for Software-Defined UAV Network Control  
Hai Cheng;Lorenzo Bertizzolo;Salvatore D'oro;John Buczek;Tommaso Melodia;Elizabeth Serena Bentley  
Publication Year: 2021,Page(s):1486 - 1504  
HTML

Point-to-Point Communication in Integrated Satellite-Aerial 6G Networks: State-of-the-Art and Future Challenges  
Nasir Saeed;Heba Almorad;Hayssam Dahrouj;Tareq Y. Al-Naffouri;Jeff S. Shamma;Mohamed-Slim Alouini  
Publication Year: 2021,Page(s):1505 - 1525  
HTML

Demand-Based Adaptive Multi-Beam Pattern and Footprint Planning for High Throughput GEO Satellite Systems  
Puneeth Jubba Honnaiah;Nicola Maturo;Symeon Chatzinotas;Steven Kisseleff;Jens Krause  
Publication Year: 2021,Page(s):1526 - 1540  
HTML

Rate Splitting With Finite Constellations: The Benefits of Interference Exploitation vs Suppression  
Abdelhamid Salem;Christos Masouros;Bruno Clerckx  
Publication Year: 2021,Page(s):1541 - 1557  
HTML

Performance Analysis of Energy Harvesting-Assisted Overlay Cognitive NOMA Systems With Incremental Relaying  
Alok Kumar Shukla;Vibhum Singh;Prabhat K. Upadhyay;Abhinav Kumar;Jules M. Moualeu  
Publication Year: 2021,Page(s):1558 - 1576  
HTML

Electromagnetic Model of Reflective Intelligent Surfaces  
Filippo Costa;Michele Borgese  
Publication Year: 2021,Page(s):1577 - 1589  
HTML

Securing Public Safety Communications on Commercial and Tactical 5G Networks: A Survey and Future Research Directions  
Jani Suomalainen;Jukka Julku;Mikko Vehkaperä;Harri Posti  
Publication Year: 2021,Page(s):1590 - 1615  
HTML

RIS of Flight: RIS-Empowered UAV Communications for Robust and Reliable Air-to-Ground Networks  
Placido Mursia;Francesco Devoti;Vincenzo Sciancalepore;Xavier Costa-Pérez  
Publication Year: 2021,Page(s):1616 - 1629  
HTML

Spread Spectrum Symbol Detection With Blind Interference Suppression in FBMC-SS  
David B. Haab;Hussein Moradi;Behrouz Farhang-Boroujeny  
Publication Year: 2021,Page(s):1630 - 1646  
HTML

Joint Analog Beam Selection and Digital Beamforming in Millimeter Wave Cell-Free Massive MIMO Systems  
Cenk M. Yetis;Emil Björnson;Pontus Giselsson  
Publication Year: 2021,Page(s):1647 - 1662  
HTML

Analysis of LDPC Codes in FSO Communication System Under Fast Fading Channel Conditions  
Sonali;Abhishek Dixit;Virander Kumar Jain  
Publication Year: 2021,Page(s):1663 - 1673  
HTML

On Energy Allocation and Data Scheduling in Backscatter Networks With Multi-Antenna Readers  
Mohammad Movahednasab;Mohammad Reza Pakravan;Behrooz Makki;Tommy Svensson  
Publication Year: 2021,Page(s):1674 - 1689  
HTML

Power Scalable Angle of Arrival Estimation Using Pilot Design With Orthogonal Subsequences  
Mahbuba S. Ullah;Ahmed Tewfik;Robert W. Heath  
Publication Year: 2021,Page(s):1690 - 1709  
HTML



Deep Learning Enabled Beam Tracking for Non-Line of Sight Millimeter Wave Communications  
Ruiyu Wang;Paulo Valente Klaine;Oluwakayode Onireti;Yao Sun;Muhammad Ali Imran;Lei Zhang  
Publication Year: 2021,Page(s):1710 - 1720  
HTML

Comparing Delay-Constrained ALOHA and CSMA: A Learning-Based Low-Complexity Approximate Approach  
Lei Deng;Youzhi Yu;Yijin Zhang;Yunghsiang S. Han  
Publication Year: 2021,Page(s):1721 - 1735  
HTML

Millimeter-Wave Based Localization Using a Two-Stage Channel Estimation Relying on Few-Bit ADCs  
Kunlun Li;Mohammed El-Hajjar;Lie-liang Yang  
Publication Year: 2021,Page(s):1736 - 1752  
HTML

A Survey and Quantitative Evaluation of Integrated Circuit-Based Antenna Interfaces and Self-Interference Cancellers for Full-Duplex  
Tingjun Chen;Sasank Garikapati;Aravind Nagulu;Aditya Gaonkar;Manav Kohli;Igor Kadota;Harish Krishnaswamy;Gil Zussman  
Publication Year: 2021,Page(s):1753 - 1776  
HTML

Dimming-Based Modulation Schemes for Visible Light Communication: Spectral Analysis and ISI Mitigation  
Rishu Raj;Sonu Jaiswal;Abhishek Dixit  
Publication Year: 2021,Page(s):1777 - 1798  
HTML

Secure Communication With Energy-Harvesting Buffer-Aided Jammer  
Kirti Kant Sharma;Ranjan Bose  
Publication Year: 2021,Page(s):1799 - 1808  
HTML

Characterization and Exploitation of Quasi Determinism in Multi-Conductor Power Line Communication Noise  
Davide Righini;Andrea M. Tonello  
Publication Year: 2021,Page(s):1809 - 1825  
HTML

Access Point Placement for Hybrid UAV-Terrestrial Small-Cell Networks  
Govind R. Gopal;Bhaskar D. Rao;Gabriel Porto Villardi  
Publication Year: 2021,Page(s):1826 - 1841  
HTML

Energy-Efficient MU-Massive-MIMO Hybrid Precoder Design: Low-Resolution Phase Shifters and Digital-to-Analog Converters for 2D Antenna Array Structures  
Mobeen Mahmood;Asil Koc;Tho Le-Ngoc  
Publication Year: 2021,Page(s):1842 - 1861  
Cited by: Papers (1)  
HTML

Performance Analysis of Hybrid Buffer-Aided Cooperative Protocol Based on Half-Duplex and Virtual Full-Duplex Relay Selections  
Gan Srirutchataboon;Jun Kochi;Shinya Sugiura  
Publication Year: 2021,Page(s):1862 - 1873  
HTML

Network Function Decomposition and Offloading on Heterogeneous Networks With Programmable Data Planes  
Daniele Moro;Giacomo Verticale;Antonio Capone  
Publication Year: 2021,Page(s):1874 - 1885  
HTML

Signal Conditioning for Selective OFDM SWIPT Systems  
Raquel F. Buckley;Robert W. Heath  
Publication Year: 2021,Page(s):1886 - 1900  
HTML

Physical-Layer Security in 6G Networks  
Lorenzo Mucchi;Sara Jayousi;Stefano Caputo;Erdal Panayirci;Shahriar Shahabuddin;Jonathan Bechtold;Iván Morales;Razvan-Andrei Stoica;Giuseppe Abreu;Harald Haas  
Publication Year: 2021,Page(s):1901 - 1914  
Cited by: Papers (1)  
HTML

Zero-Crossing Modulation for Wideband Systems Employing 1-Bit Quantization and Temporal Oversampling: Transceiver Design and Performance Evaluation  
Peter Neuhaus;Meik Dörpinghaus;Gerhard Fettweis  
Publication Year: 2021,Page(s):1915 - 1934  
Cited by: Papers (1)  
HTML

Privacy for 5G-Supported Vehicular Networks  
Meng Li;Liehuang Zhu;Zijian Zhang;Chhagan Lal;Mauro Conti;Fabio Martinelli  
Publication Year: 2021,Page(s):1935 - 1956  
HTML

Defeating Jamming Using Outage Performance Aware Joint Power Allocation and Access Point Placement in Uplink Pairwise NOMA  
Van-Lan Dao;Le-Nam Hoang;Svetlana Girs;Elisabeth Uhlemann  
Publication Year: 2021,Page(s):1957 - 1979  
HTML

Link Budget Analysis for Reconfigurable Smart Surfaces in Aerial Platforms  
Safwan Alfattani;Wael Jaafar;Yassine Hmamouche;Halim Yanikomeroglu;Abbas Yongaçoglu  
Publication Year: 2021,Page(s):1980 - 1995  
HTML

Coexistence of Cellular and IEEE 802.11 Technologies in Unlicensed Spectrum Bands -A Survey  
Rony Kumer Saha  
Publication Year: 2021,Page(s):1996 - 2028  
HTML

Massive Measurements of 5G Exposure in a Town: Methodology and Results  
Luca Chiaraviglio;Chiara Lodovisi;Daniele Franci;Settimio Pavoncello;Tommaso Aureli;Nicola Blefari-Melazzi;Mohamed-Slim Alouini  
Publication Year: 2021,Page(s):2029 - 2048  
HTML

Quantum Key Distribution Secured Optical Networks: A Survey  
Purva Sharma;Anuj Agrawal;Vimal Bhatia;Shashi Prakash;Amit Kumar Mishra  
Publication Year: 2021,Page(s):2049 - 2083  
HTML

Tracking Model Predictive Control Paradigm for Underwater Optical Communication  
Asem Alalwan;Fahad Albalawi;Taous Meriem Laleg-Kirati  
Publication Year: 2021,Page(s):2084 - 2094  
HTML



FPV Video Adaptation for UAV Collision Avoidance  
Simran Singh;Hee Won Lee;Tuyen X. Tran;Yu Zhou;Mihail L. Sichitiu;Ismail Güvenç;Arupiyoti Bhuyan  
Publication Year: 2021,Page(s):2095 - 2110  
HTML

Fundamental Limits on Detection of UAVs by Existing Terrestrial RF Networks  
Priyanka Sinha;Ismail Güvenç;M. Cenk Gürsoy  
Publication Year: 2021,Page(s):2111 - 2130  
HTML

Health Risks Associated With 5G Exposure: A View From the Communications Engineering Perspective  
Luca Chiaraviglio;Ahmed Elzanaty;Mohamed-Slim Alouini  
Publication Year: 2021,Page(s):2131 - 2179  
HTML

Artificially Time-Varying Differential MIMO for Achieving Practical Physical Layer Security  
Naoki Ishikawa;Jehad M. Hamamreh;Eiji Okamoto;Chao Xu;Lixia Xiao  
Publication Year: 2021,Page(s):2180 - 2194  
HTML

Experimental Exploration of Unlicensed Sub-GHz Massive MIMO for Massive Internet-of-Things  
Gilles Callebaut;Sara Gunnarsson;Andrea P. Guevara;Anders J. Johansson;Liesbet Van Der Perre;Fredrik Tufvesson  
Publication Year: 2021,Page(s):2195 - 2204  
HTML

Wireless-Powered Full-Duplex UAV Relay Networks Over FTR Channels  
Daniel De Paiva Mucin;Diana Pamela Moya Osorio;Edgar Eduardo Benitez Olivo  
Publication Year: 2021,Page(s):2205 - 2218  
HTML

Attacking Massive MIMO Cognitive Radio Networks by Optimized Jamming  
S. Fatemeh Zamanian;Mohammad Hossein Kahaei;S. Mohammad Razavizadeh;Tommy Svensson  
Publication Year: 2021,Page(s):2219 - 2231  
HTML

Physical Layer Security for Beyond 5G: Ultra Secure Low Latency Communications  
Anil Kumar Yerrapragada;Taylor Eisman;Brian Kelley  
Publication Year: 2021,Page(s):2232 - 2242  
HTML

An RFML Ecosystem: Considerations for the Application of Deep Learning to Spectrum Situational Awareness  
Lauren J. Wong;William H. Clark;Bryse Flowers;R. Michael Buehrer;William C. Headley;Alan J. Michaels  
Publication Year: 2021,Page(s):2243 - 2264  
HTML

On Information Rates Over a Binary-Input Filtered Gaussian Channel  
Michael Peleg;Tomer Michaeli;Shlomo Shamai  
Publication Year: 2021,Page(s):2265 - 2272  
HTML

On Topology Optimization and Routing in Integrated Access and Backhaul Networks: A Genetic Algorithm-Based Approach  
Charitha Madapatha;Behrooz Makki;Ajmal Muhammad;Erik Dahlman;Mohamed-Slim Alouini;Tommy Svensson  
Publication Year: 2021,Page(s):2273 - 2291  
HTML

Average Rate Analysis of Cooperative NOMA Aided Underwater Optical Wireless Systems  
Kapila W. S. Palitharathna;Himal A. Suraweera;Roshan I. Godaliyadda;Vijitha R. Herath;John S. Thompson  
Publication Year: 2021,Page(s):2292 - 2310  
HTML

Enabling and Leveraging AI in the Intelligent Edge: A Review of Current Trends and Future Directions  
Tom Goethals;Bruno Volckaert;Filip De Turck  
Publication Year: 2021,Page(s):2311 - 2341  
HTML

Low-Complexity Algorithm for Radio Astronomy Observation Data Transport in an Integrated NGSO Satellite Communication and Radio Astronomy System  
Ahmed M. Mohamed;Hlaing Minn  
Publication Year: 2021,Page(s):2342 - 2356  
HTML

Multipair Relaying With Space-Constrained Large-Scale MIMO Arrays: Spectral and Energy Efficiency Analysis With Incomplete CSI  
Jun Qian;Christos Masouros  
Publication Year: 2021,Page(s):2357 - 2371  
HTML

Detection of Covert Timing Channel Based on Time Series Symbolization  
Shuhong Wu;Yonghong Chen;Hui Tian;Chonggao Sun  
Publication Year: 2021,Page(s):2372 - 2382  
HTML

Quantum Codes in Classical Communication: A Space-Time Block Code From Quantum Error Correction  
Travis C. Cuvelier;S. Andrew Lanham;Brian R. La Cour;Robert W. Heath  
Publication Year: 2021,Page(s):2383 - 2412  
HTML

Hyperloop Communications: Challenges, Advances, and Approaches  
Wafa Hedhly;Osama Amin;Basem Shihada;Mohamed-Slim Alouini  
Publication Year: 2021,Page(s):2413 - 2435  
HTML

A Capacity Achieving MIMO Detector Based on Stochastic Sampling  
Jonathan C. Hedstrom;Ahmad Rezazadehrehyani;Chung Him Yuen;Behrouz Farhang-Boroujeny  
Publication Year: 2021,Page(s):2436 - 2448  
HTML

TV White Space Based Wireless Broadband Internet Connectivity: A Case Study With Implementation Details and Performance Analysis  
Md Zobaer Islam;John F. O'Hara;Dylan Shadoan;Mostafa Ibrahim;Sabit Ekin  
Publication Year: 2021,Page(s):2449 - 2462  
HTML

Special Section on Full-Duplex Transceivers for Future Networks:  
Theory and Techniques

Nghi H. Tran;Himal A. Suraweera;Taneli Riihonen;Negar  
Reiskarimian;Hardik Jain;Robert Schober

Publication Year: 2021,Page(s):2463 - 2468

[HTML](#)