Report NA DLT #1_Dallas_Houston_Galveston Bay_Han_1803

Zhu Han, John and Rebecca Moore Professor

ECE Department, University of Houston, TX USA

Lecture 1 at Texas Southern University

1. Presentation Date and Time: 12pm May 26th, 2018

2. Presentation Venue: Professor Wei Li

3. Preferred length of talk: (Including Q & A): 60 minutes

4. Topic: Big Data Analysis and Cross-Layer Optimization for Communication, Caching, and Computing Networks

5. Estimated Audience size: 20

NSF CENTER FOR RESEARCH ON COMPLEX NETWORKS

EEWSN RESEARCH SEMINAR

Big Data Analysis and Cross-Layer Optimization for Communications, Caching and Computing Networks

Zhu Han, Ph.D.
Electrical and Computer Engineering Department
University of Houston
12:00 – 12:50, Wednesday, March 26, 2018
Conference Room 316 at Technology Building

Abstract

The recent advances of computing, caching, and communication (C^3) can have significant impacts on the future network design. In addition, there are many new technologies for big data analysis and cross-layer optimization. In this talk, we limit our scope to three specific cases, while want to give insights. First, a new formulation for bandwidth allocation and routing problem is formulated for wireless network virtualization, and the decomposition algorithms are constructed using the alternating direction method of multipliers that can be implemented in a parallel and distributed fashion. Second, the caching based D2D communication scheme is investigated by taking social ties among users and common interests into consideration, and the hypergraph and matching frameworks are employed for optimization. Third, we consider mobile social networks together with C^3 networks using deep learning to study social networks and a novel deep reinforcement learning approach to automatically make a decision for optimally allocating the network resources.

Biography

Dr. Zhu Han received the B.S. degree in electronic engineering from Tsinghua University, in 1997, and the M.S. and Ph.D. degrees in electrical engineering from the University of Maryland, College Park, in 1999 and 2003, respectively. From 2000 to 2002, he was an R&D Engineer of JDSU, Germantown, Maryland. From 2003 to 2006, he was a Research Associate at the University of Maryland. From 2006 to 2008, he was an assistant professor in Boise State University, Idaho. Currently, he is a full Professor in Electrical and Computer Engineering Department as well as Computer Science Department at University of Houston, Texas. His research interests include security, wireless resource allocation and management, wireless communications and networking, game theory, and wireless multimedia. Dr. Han is an NSF CAREER award recipient 2010. Dr. Han has several IEEE conference best paper awards, and winner of 2011 IEEE Fred W. Ellersick Prize, 2015 EURASIP Best Paper Award for the Journal on Advances in Signal Processing and 2016 IEEE Leonard G. Abraham Prize in the field of Communications Systems (Best Paper Award for IEEE Journal on Selected Areas on Communications). Dr. Han has been IEEE fellow since 2014 and IEEE Distinguished Lecturer since 2015. Dr. Han is 1% highly cited researcher 2017 according to Web of Science.

Lecture 2 at NASA, Galveston

1. Presentation Date and Time: 12pm March 29th, 2018

2. Presentation Venue: Dr. Zafar Taqvi

3. Preferred length of talk: (Including Q & A): 60 minutes

4. Topic: Big Data Analysis and Cross-Layer Optimization for Communication, Caching, and Computing Networks

5. Estimated Audience size: 10

The Institute of Electrical and Electronics Engineers
(IEEE)
Galveston Bay Section Meeting
Organized by Communication Society and Joint Societies Chapters

March 29th, 2018 (Thursday) Luncheon Meeting

TOPIC: "Big Data Analysis and Cross-Layer Optimization for Communications, Caching and Computing (C^3) Networks"

SPEAKER: Dr. Zhu Han, IEEE/ComSoc Distinguished Speaker
ECE Department and CS Department, University of Houston

PRESENTATION: The recent advances of computing, caching, and communication (C^3) can have significant impacts on the future network design. In addition, there are many new technologies for big data analysis and cross-layer optimization. In this talk, we limit our scope to three specific cases, while want to give insights. First, a new formulation for bandwidth allocation and routing problem is formulated for wireless network virtualization, and the decomposition algorithms are constructed using the alternating direction method of multipliers that can be implemented in a parallel and distributed fashion. Second, the caching based D2D communication scheme is investigated by taking social ties among users and common interests into consideration, and the hypergraph and matching frameworks are employed for optimization. Third, we consider mobile social networks together with C^3 networks using deep learning to study social networks and a novel deep reinforcement learning approach to automatically make a decision for optimally allocating the network resources.

GUEST SPEAKER:

Zhu Han received the B.S. degree in electronic engineering from Tsinghua University, in 1997, and the M.S. and Ph.D. degrees in electrical engineering from the University of Maryland, College Park, in 1999 and 2003, respectively. From 2000 to 2002, he was an R&D Engineer of JDSU, Germantown, Maryland. From 2003 to 2006, he was a Research Associate at the University of Maryland. From 2006 to 2008, he was an assistant professor in Boise State University, Idaho. Currently, he is a full Professor in Electrical and Computer Engineering Department as well as Computer Science Department at University of Houston, Texas. His research interests include security, wireless resource allocation and management, wireless communications and networking, game theory, and wireless multimedia. Dr. Han is an NSF CAREER award recipient 2010. Dr. Han has several IEEE conference best paper awards, and winner of 2011 IEEE Fred W. Ellersick Prize, 2015 EURASIP Best Paper Award for the Journal on Advances in Signal Processing and 2016 IEEE Leonard G. Abraham Prize in the field of Communications Systems (Best Paper Award for IEEE Journal on Selected Areas on Communications). Dr. Han has been IEEE fellow since 2014 and IEEE Distinguished Lecturer since 2015. Dr. Han is 1% highly cited researcher 2017 according to Web of Science.

Gilruth Recreation Center NASA-JSC, Discovery Room (downstairs)

Free parking. No security processing required. Easy drive in at Space Center Blvd. See website below for map.
Interested non-IEEE engineers, technicians, scientists, IEEE Members and guests alike are welcome!

12:00 PM – 1:00 PM - Program and Q&A

11:50 AM - Light Lunch with reservation ($10.00 donation). Complimentary for IEEE student members with reservation. Please RSVP Before Noon Tuesday March 27th, 2018

Number of lunches is limited. Please reserve early

Reservations for lunch or to attend this meeting should be made by email to:
e.k.sullivan.pe@ieee.org

Please check IEEE 0.00 website http://sites.ieee.org/gb/communities/ for map and more.

Lecture 3 at UT Dallas

1. Presentation Date and Time: 230pm April 30th, 2018

2. Presentation Venue: Dr. Al-Dhahir, Naofal

3. Preferred length of talk: (Including Q & A): 60 minutes

4. Topic: Case Study of Big Data Analysis for Smart Grid

5. Estimated Audience size: 20

The University of Texas at Dallas Computer Engineering Program
Presents
IEEE Communications Society
Distinguished Speaker Talk

Zhu Han:
Case Study of Big Data Analysis for Smart Grid

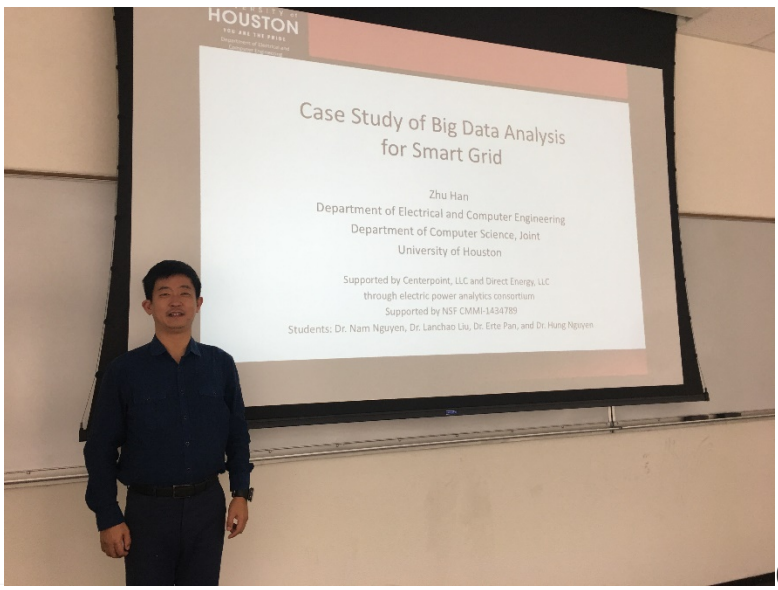
Abstract: The advent of big data offers unprecedented opportunities for data-driven discovery and decision-making in virtually every area of human endeavor. In this talk, we zoom in to the applications of smart grid, which refers to the next generation electrical power grid that aims to provide reliable, efficient, secure, and quality energy generation/distribution/consumption using modern information, communications, and electronics technology. We further zoom in to study two specific cases. First, supported by local utility companies through electric power analytics consortium, we analyze real smart meter big data for load profiling and smart pricing. We employ techniques such as Bayesian nonparametric learning, sublinear algorithm, and deep learning. Second, we investigate how to solve Security-constrained Optimal Power Flow (SCOPF) Problem, through sparse optimization and alternating direction method of multipliers (ADMM). Finally, other research activities of our group will also be briefly described.

About the Speaker: Zhu Han received the B.S. degree in electronic engineering from Tsinghua University, in 1997, and the M.S. and Ph.D. degrees in electrical engineering from the University of Maryland, College Park, in 1999 and 2003, respectively. From 2000 to 2002, he was an R&D Engineer of JDSU, Germantown, Maryland. From 2003 to 2006, he was a Research Associate at the University of Maryland. From 2006 to 2008, he was an assistant professor in Boise State University, Idaho. Currently, he is a full Professor in Electrical and Computer Engineering Department as well as Computer Science Department at University of Houston, Texas. His research interests include security, wireless resource allocation and management, wireless communications and networking, game theory, and wireless multimedia. Dr. Han is an NSF CAREER award recipient 2010. Dr. Han has several IEEE conference best paper awards, and winner of 2011 IEEE Fred W. Ellersick Prize, 2015 EURASIP Best Paper Award for the Journal on Advances in Signal Processing and 2016 IEEE Leonard G. Abraham Prize in the field of Communications Systems (Best Paper Award for IEEE Journal on Selected Areas on Communications). Dr. Han has been IEEE fellow since 2014 and IEEE Distinguished Lecturer since 2015. Dr. Han is 1% highly cited researcher according to Web of Science.

2:30 pm - 3:30pm / Friday March 30th / ECSN 2.110

FOR MORE INFORMATION, CONTACT:
Dr. Naofal Aldhahir: aldhahir@utdallas.edu

UTDALLAS



0

There are many questions from audiences and the hosts are extremely friendly. I did enjoy every min of the DLT tour.