UAV Applications over Cellular Networks: Sensing, Communication, and Control

Zhu Han, John and Rebecca Moores Professor

ECE Department and CS Department, University of Houston

Abstract: The emerging unmanned aerial vehicles (UAVs) have been playing an increasing role in the military, public, and civil applications. Very recently, 3GPP has approved the study item on enhanced support to seamlessly integrate UAVs into future cellular networks. Unlike terrestrial cellular networks, UAV communications have many distinctive features such as high dynamic network topologies and weakly connected communication links. In addition, they still suffer from some practical constraints such as battery power, no-fly zone, etc. As such, many standards, protocols, and design methodologies used in terrestrial wireless networks are not directly applicable to airborne communication networks. Therefore, it is essential to develop new communication, signal processing, and optimization techniques in support of the ultra-reliable and real-time sensing applications, but enabling high data-rate transmissions to assist the terrestrial communications in LTE. In this talk, we discuss three scenarios: First, for UAV sensing applications, we obtain realtime profiling of fine-grained air quality index distribution using sparse optimization techniques. Second, for UAV communication scenarios, we conduct spectrum sharing planning for UAV relaying systems to enhance 5G communications. Finally, to control a large number of UAVs, we propose mean field game approaches.

Bio: 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 John and Rebecca Moores 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 ACM distinguished member since 2019. Dr. Han is 1% highly cited researcher according to Web of Science since 2017.

Dr. Zhu Han

Contact Information	W302 Engineering Building 2 University of Houston Houston, TX 77004, USA	*Phone:* (713) 743-4437 (o), (301) 996-2011 (c) *E-mail:* hanzhu22@gmail.com, zhan2@uh.edu *http://www2.egr.uh.edu/ ∼ zhan2*

Highlight

18 graduated Ph.D. and graduated 4 M.S., 4 former postdoc, and currently 15 Ph.D. students and 1 postdoc

15 NSF funding (including **US NSF career award** 2010), >$4,000,000 with 100% credit, Multidisciplinary University Research Initiative (MURI), Department of Defense, Department of Interior, Gulf of Mexico research, Qatar, and Power Analysis Consortium since 2008

IEEE Fellow in 2013 (class of 2014) for contributions to resource allocation and security in wireless communications

IEEE Distinguished Lecturer, 2015-2018

2016 IEEE Leonard G. Abraham Prize in the field of Communications Systems (Best Paper Award for IEEE Journal on Selected Areas on Communications).

2015 EURASIP Best Paper Award for Journal on Advances in Signal Processing.

2011 IEEE Communications Society Fred W. Ellersick Prize (Best Paper Award for IEEE Wireless Communications Magazine).

14 IEEE conference best paper awards

Award for Excellence in Research, Scholarship or Creative Activity, Twice, 2010–2011, 2014-2015, the highest in University of Houston, 2 winners per year

7 published textbooks/1 edited book/1 textbook in print/1 textbook working in process, all by Cambridge University Press

422 published/accepted transactions/magazines/letters, ≥400 conference papers, 17 book chapters, 10 brief books, and 2 patents

Web of Science top 1% Highly Cited Researcher since 2017
google citation >33,000 and **H factor** 91

First Chinese in **Grand Slam Marathon Club** to Finish North Pole Marathon and Seven Marathons in Seven Continents (including Antarctica). Half Ironman 2016.

Education

University of Maryland, College Park, Maryland, USA

Ph.D. in Electrical and Computer Engineering, November, 2003
M.S. in Electrical and Computer Engineering, May, 1999

Tsinghua University, Beijing, China

B.S. in Electronic Engineering, June, 1997
Major: Communication, Minor: English
Rank No.7 in Tsinghua New Student Exam 1992

Academia Employment

University of Houston, Houston, Texas, USA

John and Rebecca Moores Professor	**April, 2018 - Present**
Full Professor in ECE Department	**September, 2015 - April 2018**
Joint Appointment with CS Department	
Director of Computer & Systems Engineering Program	
Associate Professor in ECE Department	**August, 2012 - August, 2015**
Assistant Professor in ECE Department	**August, 2008 - August, 2012**

Boise State University, Boise, Idaho, USA
Assistant Professor in ECE Department	**August, 2006 - May, 2008**

University of Maryland, College Park, Maryland, USA
Faculty Research Associate	**November, 2003 - June, 2006**
Faculty Research Assistant	**November, 2002 - November, 2003**

Advisor: Professor K. J. Ray Liu.

University of Maryland, College Park, Maryland, USA
Graduate Research Assistant	**August, 1997 - June, 2000**

INDUSTRY EMPLOYMENT

JDS Uniphase Corporation (JDSU), Germantown, Maryland, USA
Electrical Engineer	**July, 2000 - November, 2002**

Hughes Network Systems, Germantown, Maryland, USA
Summer Intern	**May 1998 - August, 1998**

National Meteorology Center, Beijing, China
Intern	**June, 1996 - July, 1997**

GRANT

National Science Foundation Projects

1. **CO-Principal Investigator** of "Advanced Mean-Field Game Theory for Complex Physical & Soci-Economical Systems," collaborative with University of California at Los Angles, Princeton University, and University of Maryland at College Park, Multidisciplinary University Research Initiative (MURI), Air Force Office of Scientific Research (AFOSR), 18RT0073, $1,200,000 out of $7,500,000, 2018-2023.

2. **Principal Investigator** of "NeTS: Small: Collaborative Research: Hierarchical Framework with Distributed Resource Allocation for Mobile Fog Computing," collaborative with University of North Carolina at Charlotte, National Science Foundation, $249,999, out of $500,000, CNS-1717454, 2017-2020.

3. **Principal Investigator** of "Collaborative Research: Energy-Efficient Heterogeneous Network Virtualization with Spectrum-Power Trading," collaborative with Georgia Tech., National Science Foundation, $200,000, out of $500,000, CNS-1731424, 2017-2020.

4. **CO-Principal Investigator** of "WiFIUS: Collaborative Research: Ambient Re-Scatter Inspired Machine Type Communication for Heterogeneous IoT Systems,"

collaborative with Aalto University, Finland, National Science Foundation, $150,000, out of $300,000, CNS-1702850, 2017-2019

5. **CO-Principal Investigator** of "CPS: Synergy: Collaborative Research: DEUS: Distributed, Efficient, Ubiquitous and Secure Data Delivery Using Autonomous Underwater Vehicles," collaborative with Missouri University of Science and Technology, National Science Foundation, $150,000, out of $600,000, CNS-1646607, 2016-2019.

6. **Principal Investigator** of "EARS: Collaborative Research: Full-Duplex Cognitive Radio: A New Design Paradigm for Enhancing Spectrum Usage," collaborative with Rice University, National Science Foundation, $200,000, out of $400,000, ECCS-1547201, %100 credit, 2015-2018. INTERN Supplementary Funding, $28,205, 2018.

7. **Principal Investigator** of "Collaborative Research: WiFiUS: Heterogeneous Resource Allocation for Hierarchical Software-Defined Radio Access Networks at the Edge," collaborative with Arizona State University, University of Oulu, VTT Finland, National Science Foundation, $140,000, CCF-1456921, 2015-2017.

8. **Principal Investigator** of "Collaborative Research: Proactive Recovery of Electric Power Assets for Resiliency Enhancement (PREPARE)", collaborative with University of Denver, National Science Foundation, CMMI-1434789, funded, $249,999 out of a total of $500,000, 2014-2017.

9. **Principal Investigator** of "EARS: Collaborative Research: Laying the Foundations of Social Network-Aware Cellular Device-to-Device Communications", collaborative with University of Florida and Virginia Tech., National Science Foundation, CNS-1443917, funded, $234,001 out of a total of $680,000, 2015-2017.

10. **Principal Investigator** of "Collaborative Research: CCSS: D2D Wireless Networks: An Interference Nightmare or Resource Allocation Auspice," collaborative with Georgia Tech, , National Science Foundation, ECCS-1405121, funded, $185,000 out of a total of $370,000, 2014-2017.

11. **Principal Investigator** of "EAGER: Collaborative Research: Joint Adaptation of Multiple Cognitive Systems without Explicit Coordination", collaborative with Virginia Tech., National Science Foundation, CNS-1265268, funded, $150,000 out of a total of $500,000, 2013-2015.

12. **Principal Investigator** of "NeTS:Small:Toward Wireless Co-existence For Safety-critical Applications", National Science Foundation, CNS-1117560, funded, $300,000 out of a total of $500,000, 2011-2014 (Co-PI at submission. Change to PI since original PI left).

13. **Principal Investigator** of "IHCS: Collaborative Research: Compressive Spectrum Sensing in Cognitive Radio Networks," collaborative with Rice University, National Science Foundation, ECCS-1028782, funded, $256,000 out of a total of $500,000, 2010-2014.

14. **Principal Investigator** of "CAREER: Mutual Benefit in Cognitive Radio Networks: A Coalitional Game Framework," Career Award, National Science Foundation, CNS-0953377, funded, $416,000, 2010-2015.

15. **Principal Investigator** of "NeTS: Medium: Collaborative Research: Cooperative Beamforming for Efficient and Secure Wireless Communication," collaborative

with Drexel University, Princeton University, and Colorado School of Mines, National Science Foundation, CNS-0905556, NeTS, funded, $150,000 out of a total of $675,000, 2009-2012.

16. **Principal Investigator** of "Collaborative Research: Trusted Cooperative Transmission: Turning a Security Weakness into a Security Enhancement," collaborative with the University of Rhode Island, National Science Foundation, CNS-0910461, Cyber Trust, funded, $108,000 out of a total of $216,000, 2008-2011.

Other Federal Projects

17. **Co-Principal Investigator** of "Distributed chemical sensing for sub-surface oil spill sensing", U.S. Department of Interior - Minerals Management, funded, $89,670 out of a total of $896,700, 2014-2015.

18. **Co-Principal Investigator** of "Novel Sensor System for the Early Detection and Monitoring of Offshore Oil Spills", Gulf of Mexico Research Initiative RFP-II, funded, GoMRI-030, $112,500 out of a total of $750,000, 2012-2015.

19. **Co-Principal Investigator** of "Reconfigurable Electronics and Non-Volatile Memory Research," Air Force Office of Scientific Research, FA9453-8-2-0252, funded, $100,000 out of a total of $2,500,000, 2008-2010.

Industrial Projects

20. **Principal Investigator** of "Optimization Framework for Flow Balance in Edge Computing, based on Big Data Analysis," gift, Tencent, 2018-2019, $156,000.

21. **Principal Investigator** of "Deep Learning For Image Analytics In Energy Industry," Chevron, 2017-2018, $50,000.

22. **Principal Investigator** of "Data Analysis and Resource Management for Mobile Edge Computing," gift, Toyota, 2018, $50,000.

23. **Principal Investigator** of "Hierarchical Architectural Design Alternatives based on Edge Computing for Connected Vehicles," gift, Toyota, 2017, $47,500.

24. **Co-Principal Investigator** of "Deep Transfer Learning Enabled Machine Vision Inspection and Its Applications in Exploration Geophysics," Advanced Geophysical Technology Inc. 2017-2018, based on SBIR 1746824, $45,000.

25. **Co-Principal Investigator** of "Video Analytics for Quantifying the Cuttings at Shale Shaker," Shell, 2017-2018, $50,000.

26. **Founder** of Electric Power Analytics Consortium, 2012. Current members: Centerpoint and Direct Energy, $200,000.

27. **Principal Investigator** of "Teaching and Research Proposal for Texas Instrument Digital Signal Processor," Texas Instruments and Micron Technology, funded, $151,580, 2007.

Other Projects

27. **CO-Principal Investigator** of "Reconstructing high-resolution infrared spectroscopic images from high-speed multimodal microscopes," CACDS: Seed Funding For Advanced Computing, University of Houston, $40,000, 2017-2018.

28. **Principal Investigator** of "A Context Aware Framework for Optimized Resource Management in Fourth Generation Wireless Systems," collaborative with American University of Beirut and Nanyang Technological University, Qatar National Research Fund, NPRP 4 - 347 - 2 - 127, funded, $125,000 out of a total of $400,000, 2012-2015.

29. **Co-Principal Investigator** of "Super-Resolution Signal Processing for Lidar," Optical Air Data Systems, L.L.C., funded, $90,433, 2005.

30. **New Faculty Award**, $6,000, University of Houston, Houston, Texas, 2008.

Participants (Senior Personnel) of European Projects

31. "Rate Allocation for Satellite Systems with Correlated Channels Based on a Stackelberg Game," funded, European Space Agency PRESTIGE Programme, 2009-2012.

32. "Theoretical Foundations of Mobile Flexible Networks," VERDIKT project supported by Research Council of Norway, 2007-2010.

33. "Optimized Heterogeneous Multiuser MIMO Networks - OptiMO," VERDIKT project supported by Research Council of Norway, 2008-2011.

34. "Mobile-to-Mobile Communication Systems - M2M," VERDIKT project supported by Research Council of Norway, 2009-2012.

HONORS FOR RESEARCH

Best Paper Award, IEEE International Conference on Communications, Shanghai, China 2019.

Best Conference Paper, IEEE Technical Committee on Green Communications & Computing, 2019

IEEE Distinguished Lecturer, 2015-2018.

Best Journal Paper, IEEE Technical Committee on Green Communications & Computing, 2018

Best Paper Award, IEEE Globecom, Singapore, 2017

Best Paper Award, IEEE International Conference on Communications in China, Qingdao, China, 2017.

Best Paper Award 2016, IEEE Journal on Selected Areas on Communications (IEEE Leonard G. Abraham Prize in the field of Communications Systems).

Best Paper Award, IEEE International Conference on Communications, Kuala Lumpur, Malaysia, 2016.

Best Paper Award, IEEE International Conference on Communication Systems, Shengzhen, China, 2016.

Best Paper Award 2015 EURASIP Best Paper Award for the Journal on Advances in Signal Processing.

Best Paper Award, IEEE International Conference on Communications, London, UK, 2015.

Best Paper Award, IEEE Globe Communication Conference, Austin, Texas, 2014.

Best Paper Award, IEEE Wireless Communication and Networking Conference, Shanghai, China, 2013.

Best Paper Award, IEEE International Conference on Smart Grid Communications, Tainan, Taiwan, 2012.

Best Paper Award, International Conference on Wireless Communications and Signal Processing (WCSP), Huangshang, China, 2012.

Best Paper Award, Two in IEEE Wireless Communication and Networking Conference, Paris, France, 2012.

The 2011 IEEE Communications Society Fred W. Ellersick Prize, IEEE Wireless Communications Magazine Best Paper Award.

Award for Excellence in Research & Scholarship, the highest level (2 awardees per year) in University of Houston, 2011 and 2015.

NSF Career Award, 2010.

Best Paper Award, IEEE International Conference on Communications, Dresden, Germany, 2009.

Best Paper Award, 7th International Symposium on Modeling and Optimization in Mobile, Ad Hoc, and Wireless Networks, (WiOpt09), South Korea, 2009.

VISITING EXPERIENCE	**Beijing University**, Beijing China

Beijing University, Beijing China
Tsinghua University, Beijing China
Visiting Professor   **August, 2013**

Hongkong RGC visitor program, Hong Kong
International Visiting Professor   **August, 2012**

Kyung Hee University, South Korea
International Scholar   **June-July, 2011, January 2012**
Host: Professor Ju Bin Song.
Visiting Korean University, Seoul National University, Sungkyunkwan University, KAIST, Gwangju Institute of Science and Technology, National Taiwan University, National Chiao Tung University, Tsinghua University, Shanghai Jiaotong University, Chinese University of Hongkong, Hong Kong University of Science and Technology, Hong Kong Polytech. Nanyang Technology Singapore, and National University of Singapore.

Inria, France
Visiting Professor **June, 2010**
Host: Professor Eitan Altman

University of Illinois, Urbana-Champaign, USA
Visiting Professor **July, 2009**
Host: Professor Tamer Basar

University of Oslo, Oslo, Norway; **Supelec**, Paris, France
Visiting Professor **May, 2008 - July, 2008**
Host: Professor Are Hjørungnes and Professor Mérouane Debbah

Stanford University, Stanford, California, USA
Visiting Professor **May, 2007 - August, 2007**
Host: Professor John M. Cioffi

Princeton University, Princeton, New Jersey, USA
Visiting Scholar **July, 2006 - August, 2006**
Host: Professor H. Vincent Poor

TEACHING EXPERIENCE

University of Houston, Houston, USA
ECE6397 Selective Topics in Optimization **Fall, 2012**

ECE6333 Detection and Estimation **Spring, 2011, 2013, 2015**

ECE6332 Wireless Communication **Spring, 2010, 2014, 2016, 2017, 2018**

ECE6331 Advanced Telecommunications **Spring, 2009**

ECE4371 Introduction to Telecommunication Engineering
ECE4117 Telecommunication Laboratory **Fall, 2008-present**

Boise State University, Boise, Idaho, USA
EE 552/452: Wireless Communications and Networks **Spring, 2007-2008**

EE 554/454: Digital Signal Processing **Fall, 2007**

EE 551/451: Communication Systems **Fall, 2006-2007**

University of Maryland, College Park, Maryland, USA
Guest Lecturer, Undergraduate ENES100 **Fall, 2004; Fall, 2005**

CURRENT GROUP MEMBER

1. Xunsheng Du, Ph.D. student
2. Mohamed Elmossalamy, Ph.D. student
3. Neetu Raveendran, Ph.D. student
4. Kevin Tsai, Ph.D. student

5. Reginald Banez, Ph.D. student

6. Dawei Chen, Ph.D. student

7. Hao Gao, Ph.D. student

8. Jing Li, Ph.D. student

9. Wen Xie, Ph.D. student

10. Yuhan Kang, Ph.D. student

11. Nguyen Tran, Ph.D. student, joint with Dr. David Mayerich

12. Saeed Ahmadian, Ph.D. student, joint with Dr. Heidar Malki

13. Kai-Chu Tsai, Ph.D. student, joint with Dr. Ricardo, Lent

14. Shahira Hany, Ph.D. student, joint with Dr. Ahmed Abdelhadi

15. Eyad Shtaiwi, Ph.D. student, joint with Dr. Ahmed Abdelhadi

16. Dr. Hongliang Zhang, Postdoc

Alumni

1. Qiuyang Shen, Ph.D. 2019, "Statistical Bayesian Inversion of Directional Electromagnetic Logging Data", joint with Dr. Jiefu Chen

2. Mounika Sai Errapotu, Ph.D. 2018, "Secure Computing with Privacy Preservation for Cyber-Physical Systems," joint with Dr. Miao Pan

3. Huaqing Zhang, Ph.D. 2017, "A Hierarchical Game Framework for Distributive Resource Allocation in Future HetNet."

4. Radwa Aly, Ph.D. 2017, "Utilizing Full Duplex Multiple Antenna System in Heterogeneous Networks."

5. Fahira Sangare, Ph.D. 2017, "RF Energy Harvesting and Information Transfer Implementation in the Internet of Things."

6. Hung Nguyen, Ph.D. 2017, "Big Data Optimization for Distributed Resource Management in Smart Grid."

7. Yunan Gu, Ph.D. 2016, "Matching Theory Framework for 5G Wireless Communications."

8. Yanru Zhang, Ph.D. 2016, "Contract Theory Framework for Wireless Networking."

9. Erte Pan, Ph.D. 2016, "Big Data Analysis of Complex Networks using Machine Learning Methods."

10. Ali Arab, Ph.D. 2015, "Asset Management Of Smart Grid Infrastructure For Resiliency Enhancement", Industrial Engineering, joint with Professor Suresh Khator.

11. Ateeth Kumar Thirukkovulur, M.S. 2015, "Novel Infrastructure Quantification For Utility Of Virtualized Network Debugging Using Openflow As Visualization Of Packets And Software Defined Networking," joint with Professor Deniz Gurkan.

12. Lanchao Liu, Ph.D. 2014, "Big Data Optimization for Modern Communication Networks," winner of National Excellent Ph.D Student Scholarship.

13. Najmeh Forouzandeh Mehr, Ph.D. 2013, "Game Theoretical Framework for Dynamic Control in Smart Grid".

14. Nam Tuan Nguyen, Ph.D. 2013, "A Nonparametric Bayesian Framework For Mobile Device Security And Location Based Services".

15. Guanbo Zheng, Ph.D. 2013, joint with professor Rong Zheng, "Toward Reliable and Robust Wireless Personal Area Networks".

16. Mohammad Esmalifalak, Ph.D. 2013, "Attack and Defense Mechanisms for State Estimation in Smart Grid".

17. Thanh Le, M.S. 2013, "Sequential Learning for Passive Monitoring of Multi-Channel Wireless Network".

18. Yi Huang, Ph.D. 2012, "A Quickest Detection Framework for Smart Grid".

19. Tina Mathews, M.S. 2012, "USRP2 Implementation of Compressive Sensing based Channel Estimation in OFDM".

20. Zhou Yuan, Ph.D. 2012, "A Framework Of Belief Propagation and Game Theory for Cognitive Radio Security and Routing".

21. Jia Meng, Ph.D. 2010, "Compressive Sensing Applications for Wireless Communications".

22. Barsha Shrestha, MS. 2008, "Wireless Access in Vehicular Environments using Bit Torrent and Bargaining,".

23. Yong Xiao, Postdoc, now in Arizona State University, AZ.

24. Samir Medina Perlaza, Ph.D. Supelec, France, joint with Princeton University, now in Inria, France.

25. Walid Saad, Postdoc, Ph.D. University of Oslo, joint with Princeton University, now in professor in University of Miami.

26. Yingying Li, Postdoc, Ph.D. University of California, Los Angeles, joint with Rice University, now in Wall street.

VISITORS
- Professor Dusit (Tao) Niyato, School of Computer Engineering, Nanyang University, Singapore, Feb - Mar. 2008, July 2011
- Professor Husheng Li, Department of EECS, University of Tennessee, TN, Oct. 2008
- Professor Are Hjørungnes, UNIK, University of Oslo, Norway, Dec. 2008
- Dr. Nam Tran Nguyen, University of New South Wales, Australia, Jan. 2009
- Dr. Ninoslav Marina, University of Oslo, Norway, Feb. 2009
- Professor Ekram Hossain, University of Manitoba, Canada, Feb. 2009
- Professor Lijun Qian, Prairie View A&M University, TX, Mar. 2009
- Professor Walid, Saad, UNIK, University of Oslo, Norway, University of Miami, Mar. 2009, Mar. 2010
- Professor Ruhai Wang, Lamar University, TX, Sep. 2009
- Professor Ju Bin Song, Kyung Hee University, South Korean, Aug. 2009 - Aug. 2010
- Dr. Quanyan Zhu, University of Illinois at Urbana-Champaign, IL, Jan. 2010
- Dr. Lei Jiang, University Autonoma de Barcelona, Spain, Jan. 2010 - Mar. 2010
- Professor Wotao Yin, Rice University, TX, Jan. 2010; UCLA, CA, Apr. 2015
- Professor Jake Baker, Boise State University, ID, Jan. 2010
- Professor Andres Kwasinski, Rochester Institute of Technology, NY, Mar. 2010
- Professor Ashutosh Sabharwal, Rice University, TX, Apr. 2010
- Professor Tie Liu, Texas A&M University, TX, Apr. 2010
- Professor Wei Zhang, New South Wales University, Australia, Jun. 2010
- Professor Shuguang (Robert) Cui, Texas A&M University, TX, Sep. 2010
- Professor Zixiang Xiong, Texas A&M University, TX, Feb. 2011, Apr. 2012

- Professor Zhi Tian, Michigan Technological University, MI, Feb. 2011
- Professor Yang Xiao, University of Alabama, AL, Feb. 2011
- Professor Yu Cheng, Illinois Institute of Technology, IL, Mar. 2011
- Professor Le Xie, Texas A&M University, TX, Mar. 2011
- Professor Hamed Mohsenian-Rad, Texas Tech University, TX, Apr. 2011
- Dr. Yifan Li, Nanyang Technology University, Singapore, Apr. 2011
- Professor Jianwei Huang, Chinese University of Hong Kong, Dec. 2011
- Professor Angela Zhang, Chinese University of Hong Kong, Dec. 2011
- Professor Guoqiang Mao, National University of Australia, Dec. 2011
- Professor Xinbin Wang, Shanghai Jiaotong University, Dec. 2011
- Professor Eryk Dutkiewicz, Macquarie University, Australia, Dec. 2011
- Mr. Chen Wang, Shanghai Jiaotong University, Jan. 2012 – Jun. 2012
- Professor Thad Welch, Boise State University, Feb. 2012
- Dr. Wooyeol Choi, GIST, South Korea, Mar. 2012
- Professor Hongyi Wu, University of Louisiana at Lafayette, Apr. 2012
- Professor Rao Thammavaram, University of Louisiana at Lafayette, Apr. 2012
- Professor Guowang Miao, KTH, the Royal Institute of Technology, Sweden, Jul. 2012
- Professor Qing Ling, University of Science and Technology of China, Aug. 2012 – Aug. 2013
- Professor Miao Pan, Texas Southern University, Oct. 2012
- Professor Chengshan Xiao, Missouri University of Science and Technology, Jan. 2013
- Professor Mehdi Abolhassani, College of Technology, University of Houston, Dec. 2013
- Professor Qi Su, Newcastle University, UK, Jun., 2014
- Dr. Yangqing Li, Beijing University of Posts and Telecommunications, Aug. 2014- Aug. 2015
- Dr. Jia You, Beijing Jiaotong University, May 2014- May 2015
- Dr. Yingyu Li, Xidian University, Aug. 2014- Aug. 2016
- Dr. Yun Hu, Xidian University, Aug. 2014- Aug. 2015
- Professor Hang Qin, Yangtze University, China, Aug. 2014- Aug. 2015.
- Professor Mingyi Hong, Iowa State University, Nov. 2014
- Professor Nguyen Hoang Tran, Kyung Hee University, South Korea, Dec., 2014
- Professor Zaher Dawy, American University of Beirut, Lebanon, Dec. 2014
- Professor Minming Ni, Beijing Jiaotong University, China, Dec. 2014
- Professor Hui Yang, University of South Florida, Mar. 2015
- Professor Fang Yang, Tsinghua University, China, Apr. 2015
- Professor Amin Khodaei, University of Denver, Apr. 2015
- Professor Chungang Yang, Xidian University, China, Mar. 2015 - Mar. 2016
- Dr. Chufei Ouyang, Wuhan University, Aug. 2015- Sep. 2015.
- Dr. Xiao Tang, Xi'an Jiaotong University, Sep. 2015- Aug. 2016.
- Professor Shaolei Ren, University of California, Riverside, Sep. 2015.
- Professor Husheng Li, University of Tennessee, Sep. 2015- Aug. 2016.
- Professor Guiling Wang, NJIT, Nov. 2015,
- Dr. Huu Ngoc Duy Nguyen, McGill, Nov. - Dec. 2015.
- Professor Liang Xiao, Xiamen University, China, Dec. 2015.
- Dr. Wenbo Wang, Tsinghua University, China, Jan.-Mar. 2016.
- Dr. Xianfu Chen, VTT, Finland, Mar.-Apr. 2016.
- Professor Wei Song, University of New Brunswick, Canada, Mar.-Apr. 2016.

- Professor Yu Wang, University of North Carolina at Charlotte, May 2016.
- Professor Mei Li, China University of Geosciences, August 2016 - July 2017.
- Dr. Minsu Shin, Samsung, Korea, August 2016-November 2016.
- Professor Xuefang Liu, Xidian University, China, September 2016 - September 2017.
- Ye Yu, Beijing Institute of Technology, September 2016 - September 2018.
- Hui Chen, Beijing University of Posts and Telecommunications, September 2016 - September 2017.
- Professor Haitao Xu, University of Science and Technology Beijing, October 2016 - April 2017.
- Professor YiFei Wei, Beijing University of Posts and Telecommunications, November 2016 - May 2017.
- Dr. Chen-Feng Liu, University of Oulu, Finland, December 2016.
- Dr. Liangliang Zhang, University of Electronic Science and Technology of China, December 2016 - December 2017.
- Professor Shaohua Qin, Shandong Normal University, China, December 2016– December 2017.
- Professor Francis Bui, University of Saskatchewan, Canada, July 2017 – July 2018.
- Professor Francis Bui, University of Ulsan, South Korea, July 2017 – July 2018.
- Dr. Xuelin Cao, Northwestern Polytechical University, China, September 2017 – September 2018.
- Dr. Zhikun Wu, Beijing Institute of Technology, China, September 2017 – September 2018.
- Dr. Chunxia Su, Harbin Engineering University, China, September 2017 – September 2018.
- Dr. Chuanyin Li, Xidian University, China, September 2017 – September 2018.
- Dr. Di Zhou, Xidian University, China, September 2017 – September 2018.
- Professor Hongyuan Yang, Jilin University, October 2018 - October 2019.
- Dr. Junhua Wang, Chongqing University, October 2018 - October 2019.
- Professor Tingting Liu, Nanjing University of Posts and Telecommunications, November 2017 - November 2018.
- Dr. Ruoguang Li, Beijing University of Posts and Telecommunications, December 2017 - December 2018.
- Dr. Zhongyu Miao, Beijing University of Posts and Telecommunications, December 2017 - December 2018.
- Professor Wu Fang, Suzhou Institute of Trade & Commerce, February 2018- February 2019.
- Professor Jian Zhou, Anhui University of Finance and Economics, China, March 2018 - March 2019
- Professor Lisheng Yang, Congqing Uiversity, China, April 2018- April 2019.
- Dr. Benedetta Picano, University of Florence, Italy, May 2018 - May 2019.
- Dr. Zejian Feng, Tsinghua University, China, May 2018- May 2019.
- Dr. Yue Yu, Southeast University, China, September 2018- September 2019.
- Professor Guobin Zhang, Dongguan University of Technology, China, September 2018- September 2019.
- Professor Long Zhang, Hebei University of Engineering, China, September 2018- September 2019.
- Dr. Ziyi Jia, Xidian University, China, October 2018-October 2019.
- Dr. Yan Zhu, Xidian University, China, October 2018-October 2019.

- Dr. Yu Zhang, Tsinghua University, China, October 2018-October 2019.
- Professor Huaizhu Zhang, Jilin University, China, October 2018-October 2019.
- Professor Qixun Zhang, BUPT China, October 2018-October 2019.
- Lun Li, Beijing Jiaotong University, China, November 2018, November 2019.
- Jingxian Liu, Beijing Jiaotong University, China, November 2018, November 2019.
- Professor Li Wang, BUPT China, Janurary 2019-February 2019.
- Dr. Minghui Min, Xiamen University, February 2019 - February 2020.
- Professor Enchang Sun, Beijing University of Technology, April 2019 - April 2020.
- Dr. Zirui Zhuang, BUPT China, June-December 2019.
- Dr. Mykola Sevetnyk, National Chiao Tun University, Taiwan China, July-September 2019.

Invited Talks   Southern Methodist University, UT Dallas, UT Arlington, Rice University, Texas A&M University, UT Austin, Prairie view A&M University, Texas Southern University, University of Washington, MIT, Columbia University, Rutgers University, Wright State University, University of Hawaii, UCLA, UIUC, SUNY Buffalo, University of Miami, Florida International University, Arizona State University, Stanford, Virginia Tech, Kentucky State University, UC Davis, George Mason University, George Washington University, Auburn University, University of North Carolina at Greensboro, Oregon State University, California State University at San Diego, UC Irvine, UC Riverside, Illinois Institute of Technology, Northwestern University, Simon Fraser University, University of British Columbia, University of Toronto, University of Waterloo, Mcmaster University, Carleton University, Tshinghua University, Shanghai Jiaotong University, Zhejiang University, Beijing University, University of Science and Technology of China, Chinese Academy of Sciences, Xidian University, Xian Jiaotong University, Beijing University of Posts and Telecommunications, Beijing Jiaotong University, Chinese University of Hongkong, Hongkong University of Science and Technology, HongKong Polytech University, Nanyang Technological University of Singapore, National University of Singapore, I2R of Singapore, INFOCOMM of Singapore, National Taiwan University, Taiwan Chiao Tung University, Korean University, SKKU University, Kyung Hee University, Seoul National University, KAIST University, GIST University, Qualcomm Research, Schlumberger Research, Centerpoint, LLC, Inria France, University of Oslo, Supelec France, University of Avignon France, University of Luxembourg, University of Oulu, University of Florence, KTH Sweden, University of New South Wales, American University of Beirut, Qatar University, Texas A&M University at Qatar, Brazil Federal University of Rio de Janeiro.

PROFESSIONAL   **Editor**
ACTIVITIES
- Online Editorial Team, IEEE Transactions on Wireless Communications, 2019 - Present
- Associate Editor, IEEE Access, 2016 - Present.
- Associate Editor, Journal of Communications and Networks, 2015 - Present.
- Associate Editor, IEEE Transactions on Wireless Communications, 2010 - 2015.
- Guest Editor, Hindawi Wireless Communications and Mobile Computing, Special issue for Deep Learning Driven Wireless Communications and Mobile Computing, 2019.
- Guest Editor, IEEE Signal Processing Magazine Special Issue for Contactless Moni-

toring of Critical Infrastructure, 2018.

- Guest Editor, IEEE Internet of Things Journal Special Issue on Wireless Energy Harvesting for Internet of Things, 2018.
- Guest Editor, IEEE Wireless Communication Magazine on Content-Centric Collaborative Edge Caching in 5G Mobile Internet, 2017.
- Guest Editor, IEEE Communication Magazine Special Issue on Heterogeneous Ultra Dense Networks, 2017.
- Guest Editor, IEEE Transactions on Emerging Topics in Computing, "Spectrum Sharing and Aggregation for Future Wireless Networks," 2016.
- Guest Editor, IEEE Transactions on Emerging Topics in Computing, Special Issue on "Big Data Computing for Smart Grid" 2016.
- Guest Editor, IEEE Wireless Communications Magazine, Special Issue on Wireless Powered Communications Networks, 2016.
- Guest Editor, IEEE Access, Special Issue on Ultra-Dense Cellular Networks, 2016.
- Guest Editor, EURASIP Journal on Wireless Communications and Networking thematic series on "Full-Duplex Radio: Theory, Design, and Applications", 2016.
- Guest Editor, JCN Special Issue On Big Data Over Networks, 2015.
- Guest Editor, JCN Special Issue On Cyber Physical Systems, 2013.
- Guest Editor, IEEE Network Magazine, Special Issue on Security in Cognitive Radio Networks, 2012.
- Guest Editor, IEEE Journal on Selected Areas in Communications, "Cooperative Networking: Challenges and Applications," 2011.
- Guest Editor, Special Issue on Game Theory in Wireless Networks, EURASIP Journal on Advances in Signal Processing, 2009.
- Guest Editor, Special Issue on Fairness of Radio Resource Management Techniques in Wireless Networks, EURASIP Journal on Wireless Communications and Networking, 2009.
- Guest Editor, Special Issue on Cross-layer Optimized Wireless Multimedia Communications, Journal of Advances in Multimedia, 2007.

Conference Organizer
- Workshop co-Chair, Edge Machine Learning for 5G Mobile Networks and Beyond, IEEE International Conference on Communications, 2020.
- General Chair, MobiQuitous, 2019.
- TPC Co-chairs, IEEE Smartgridcom, 2019.
- Workshop Organizer, Wireless Energy Harvesting Communication Networks, IEEE Globecom, 2018.
- Workshop Organizer, 5G Ultra Dense Networks, IEEE International Conference on Communications, 2018.
- Publicity Chair, the 23rd Asia Pacific Conference on Communications, 2017.
- Publication Co-Chair, IEEE International Conference on Communications in China, 2017.
- Steering Committee, Wireless Energy Harvesting Communication Networks Workshop, IEEE Globecom, 2016.
- TPC Co-Chair, Wireless Communications Systems Symposium, IEEE International Conference on Communications in China, 2016.
- TPC Chair, IEEE International Conference on Communications, Workshop on Wireless Physical Layer Security, 2016.

- TPC Chair, the 2nd International Conference on Big Data Computing and Communication (BIGCOM), 2016.
- TPC Chair, IEEE Workshop on Wireless Powered Communication Networks (WPC-Nets), together with IEEE WCNC 2016.
- Chair, IEEE GlobalSIP 2014 Workshop on Game Theory for Signal Processing and Communications, 2014.
- Organizing Committee, IEEE International Conference on Communications, Workshop on Wireless Physical Layer Security, 2015.
- Symposium Chair, Wireless Networking, IEEE International Conference on Communications in China, 2013.
- General Chair, 1st IEEE INFOCOM Workshop on Communications and Control for Sustainable Energy Systems: Green Networking and Smart Grids, 2012.
- TPC Chair, IEEE INFOCOM Workshop on Communications and Control for Smart Energy Systems (CCSES), 2013, 2014.
- Program Chair, International Workshop on Practical Issues and Applications in Next Generation Wireless Networks (PINGEN), in conjunction with ACM MOBICOM 2012, Istanbul, Turkey, August 22-26, 2012.
- Organizing Committee, Communications Technologies for Smart Grid, IEEE Globecom Workshop, 2011.
- Wireless Communications Symposia Chair, IEEE International Conference on Computer Communications and Networks (ICCCN) Conference, 2011.
- Wireless Communications Symposia Co-Chair, 74th IEEE Vehicular Technology Conference (VTC), Fall 2011.
- Communication and Information Theory Symposia Co-Chair of the 6th International Wireless Communications and Mobile Computing Conference (IWCMC), 2010 (best symposium), 2012.
- Local Chair of The Seventh International ICST Conference on Heterogeneous Networking for Quality, Reliability, Security and Robustness (QShine), 2010.
- Publicity Co-chair of Conference on Decision and Game Theory for Security (GameSec), 2010.
- Cooperative and Cognitive Networks Workshop Co-Chair of International Wireless Communications and Mobile Computing Conference (IWCMC 2009).
- MAC Symposium Vice Chair of IEEE Wireless Communications and Networking Conference, 2008.
- Publicity Chair of Cognitive Radio Workshop with IEEE International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC) 2008, 2012.

Tutorials

- "UAV Applications over Cellular Networks: Sensing, Communication, and Computation," IEEE International Conference on Communication (ICC) 2019.
- "UAV-based Sensing and Communications for 5G and Beyond," IEEE/CIC International Conference on Communication in China (ICCC) 2019.
- "Signal Processing for Big Data Analytics: Fundamental and Applications," IEEE Global Communications Conference (Globecom), 2018.
- "Big Data Signal Processing for Communication Networks," IEEE Global Communications Conference (Globecom), 2017.
- "5G Wireless Communications: Enabling Technologies and Resource Management," IEEE Global Communications Conference (Globecom), 2016.

- "Full-Duplex Communications and Networks," IEEE International Conference on Communications in China (ICCC), 2016.
- "Distributed Resource Allocation for 5G Communications and Networks," IEEE International Conference on Communications (ICC), 2016.
- "Full-Duplex Communications and Networks: Fundamentals, Technologies, and Applications," IEEE Global Communications Conference (Globecom) 2015.
- "Resource Allocation for Full-Duplex Communication and Networks," IEEE International Conference on Communication (ICC) 2015.
- "Full-Duplex Wireless Communication and Networks: Key Technologies and Applications", IEEE International Conference on Communication in China (ICCC) 2014.
- "Game-theoretic Methods for Device-to-Device Communications", IEEE International Conference on Communication (ICC) 2014.
- "Wireless Device-to-Device Communications and Networks", IEEE Global Communications Conference (Globecom) 2013.
- "Smart Grid Communications and Networking", IEEE International Conference on Communication (ICC) 2013.
- "Resource Allocation in Wireless Physical Layer Security," IEEE Wireless Communications and Networking Conference (WCNC) 2013.
- "Device to Device Communication for Next Generation Wireless Networks", IEEE International Conference on Communication in China (ICCC) 2013.
- "Smart Grid Communications and Networking," CHINACOM-2012.
- "Application of Game Theory for Designing Cognitive Radio Networks," IEEE International Conference and Communication (ICC) 2010.
- "Coalitional Game Theory in Wireless Networks," IEEE Wireless Communications and Networking Conference (WCNC) 2010.
- "Game Theory for Cognitive Radio Networks," IEEE Global Communications Conference (Globecom) 2009.

Technical Program Committee
- Member of Technical Program Committee of IEEE/ACM INFOCOM, 2011-2020.
- Member of Technical Program Committee of IEEE Global Communications Conference, 2005-2019.
- Member of Technical Program Committee of IEEE International Conference on Communications, 2004-2020.
- Member of Technical Program Committee of IEEE Wireless Communications and Networking Conference, 2005-2020.
- Member of Technical Program Committee of IEEE SmartGridComm, 2012-2019.
- Member of Technical Program Committee of IEEE GlobalSIP, 2014-2018.
- Member of Technical Program Committee of IEEE International Conference on Distributed Computing Systems (ICDCS) 2019.
- Member of Technical Program Committee of IEEE COMNETSAT 2019.
- Member of Technical Program Committee of IEEE SPAWC 2019.
- Member of Technical Program Committee of IEEE WiSEE, 2018, 2019.
- Member of Technical Program Committee of IEEE COMNETSAT, 2018.
- Member of Technical Program Committee of IEEE 7th International Conference on Cloud Networking (CloudNet), 2018, 2019
- Member of Technical Program Committee of International Conference on Computing, Networking and Communications (ICNC), 2019, 2020

- Member of Technical Program Committee of IEEE International Conference on Computer Communications and Networks (ICCCN) Conference, 2007, 2009, 2014, 2017.
- Member of Technical Program Committee of IEEE Milcom, 2016, 2017, 2018, 2019.
- Member of Technical Program Committee of International Conference on Wireless Communications and Signal Processing, 2017-2020.
- Member of Technical Program Committee of IEEE International Symposium on New Frontiers in Dynamic Spectrum Access Networks (DYSPAN), 2011.
- Member of Technical Program Committee of IEEE 10th International Symposium of Modeling and Optimization of Mobile, Ad Hoc, and Wireless Networks (WiOpt), 2012, 2013, 2014.
- Member of Technical Program Committee of IEEE Conference on Communications and Network Security, 2013.
- Member of Technical Program Committee of IEEE International Conference on Green Computing and Communications, 2013
- Member of Technical Program Committee of IEEE International Conference on Communications, Workshop SmallNets, 2013.
- Member of Technical Program Committee of 8th international conference on Wireless algorithms, systems, and applications, 2013.
- Member of Technical Program Committee of Conference on Decision and Game Theory for Security (GameSec), 2012.
- Member of Technical Program Committee of IEEE/CIC International Conference on Communications in China, 2012, 2014, 2017, 2019.
- Member of Technical Program Committee of the 10th IEEE International Conference on Mobile Ad hoc and Sensor Systems (MASS), 2013.
- Member of Technical Program Committee of the 8th International workshop on Resource Allocation and Cooperation in Wireless Networks, 2012.
- Member of Technical Program Committee of 2012 International Conference on Wireless Communications and Signal Processing, 2012, 2014.
- Member of Technical Program Committee of Fifth International Workshop on Computational Advances in Multi-Sensor Adaptive Processing (CAMSAP), 2011.
- Member of Technical Program Committee of IEEE Consumer Communications and Networking Conference 2005, 2006, 2008, 2009.
- Member of Technical Program Committee of Workshop on "Cognitive Wireless Networks and Systems - Cognitive Radio Networking" 2009.
- Member of Technical Program Committee of ChinaCom 2008, 2009.
- Member of Technical Program Committee of IEEE International Conference on Wireless and Mobile Computing, Networking and Communications, 2008, 2009.
- Member of Technical Program Committee of IEEE International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC) 2010, 2013, 2014, 2015, 2016, 2017, 2018, 2019.
- Member of Technical Program Committee of Third IEEE Workshop on Networking Technologies for Software Defined Radio (SDR) Networks, 2008.
- Member of Technical Program Committee of First ACM International Workshop on Medical-Grade Wireless Networks, 2009.
- Member of Technical Program Committee of 3rd ICST/ACM International Workshop on Game Theory in Communication Networks, Gamecomm2009, 2009.
- Member of Technical Program Committee of Cognitive Wireless Communications and Networking (CWCN) Workshop, 2009.

- Member of Technical Program Committee of IEEE Vehicular Technology Conference Spring, 2004, Fall, 2007, Fall 2008, Spring 2009, Spring 2010, Spring 2011, Fall 2012.
- Member of Technical Program Committee of International Wireless Communications and Mobile Computing Conference 2007, 2009.
- Member of Technical Program Committee of The 8th IEEE International Symposium on a World of Wireless, Mobile and Multimedia Networks (IEEE WoWMoM 2007), 2007.
- Member of Technical Program Committee of International Symposium on Multimedia over Wireless (WirelessCom), 2005, 2006.
- Member of Technical Program Committee of International Wireless Communication and Mobile Computing Conference (IWCMC), 2006, 2008, 2014, 2017, 2018, 2019.
- Member of Technical Program Committee of IEEE Canadian Conference on Electrical & Computer Engineering (CCECE), 2018.
- Member of Technical Program Committee of 12th Communications and Networking Simulation Symposium (CNS'09).
- Member of Technical Program Committee of International Conference on Quality of Service in Heterogeneous Wired/Wireless Networks (QShine), 2004, 2005, 2006.
- Member of Technical Program Committee of Workshop on Game Theory for Networks (GameNets) in First International Conference on Performance Evaluation Methodologies and Tools, 2006.
- Member of Technical Program Committee of International Conference on Communications, Circuits and Systems, 2005, 2009.
- Member of Technical Program Committee of the 15th Asia-Pacific Conference on Communications, 2009.

Plenary, Keynote and Invited Talk in Conference
- Keynote, "Signal Processing for Big Data Analytics," 5th IEEE International Conference on Big Data Analysis, Xiamen, China, 2020.
- Keynote, "Resource Allocation for Full Duplex Communication and Networks," Full Duplex Workshop at IEEE International Conference on Communications, Shanghai, China, 2019.
- Distinguished Lecture, "Signal Processing for Big Data Analytics," International Conference on Computing, Networking and Communication, Honolulu, HA, February 2019.
- Keynote Talk, "Mean Field Game for Ultra Dense Networks," *8th EAI International Conference on Game Theory for Networks*, Seoul, South Korea, April 2018.
- Invited Talk, "Big Data Analysis for Smart Grid," *International Conference on Computing, Networking and Communications*, Hawaii, March 2018.
- Plenary Talk, "Case Study of Big Data Analysis for Smart Grid," IFOST, Ulsan, Korea, May 2017
- Plenary Talk, "Full Duplex Communication and its Impact on Wireless Networking", *IEEE Globecom Full Duplex Wireless Communications Workshop*, Washington DC, 2016.
- Keynote Speech, "Big Data Analysis: Techniques and Applications," *DELTA Summer workshop*, Finland, August 2016.
- Invited Talk, "Resource Allocation in Small Cell Networks with Massive MIMO," *International Conference on Computing, Networking and Communications*, Hawaii, February 2016.

- Invited Talk, "Multi-Block ADMM for Big Data Optimization in Smart Grid," *International Conference on Computing, Networking and Communications*, Anaheim, CA, February, 2015.
- Keynote Speak, "Wireless Device-to-Device Communications and Game Theoretical Resource Allocation," *International Workshop on Wireless Networks: Communication, Cooperation and Competition*, Hammamet, Tunisia, May 2014.
- Plenary Talk, "Cooperation for Cognitive Radios," *the 4th International Workshop on Game Theory in Communication Networks (Gamecomm)*, Paris, France, May 2011.

Other Services
- Best Paper Award Committee, IEEE International Conference on Communication, 2018
- Publication Award Committee, IEEE ComSoc Technical Committee on Cognitive Networks (TCCN), 2017, 2018
- Award Board Member, IEEE ComSoc Multimedia Communications Technical Committee (MMTC), 2010-2014.
- Panel, "The Data Scientist: Are they the missing link of analytics-enabled transformation?" Utility Analytics Week, Atlanta, GA, September, 2013.

Proposal, Book and Journal Reviewer
- National Science Foundation Panelist
- US Department of Energy Panelist
- American Association for the Advancement of Science Panelist
- European Research Council Panelist
- The Research Grants Council (RGC) of Hong Kong;
- U.S.-Israel Binational Science Foundation;
- Canada Foundation for Innovation;
- Cambridge University Press; John Wiley & Sons, Inc.;
- IEEE Transactions on Information Theory; IEEE Transactions on Communications; IEEE Journal on Selected Areas on Communications, IEEE Transactions on Wireless Communications; IEEE Transactions on Signal Processing; IEEE Transactions on Mobile Computing; IEEE Transactions on Image Processing; IEEE Transactions on Circuits and Systems for Video Technology; IEEE Communication Letters; IEEE Signal Processing Magazine; IEEE Network Magazine; IEEE Communications Magazine; IEEE Transactions on Broadcasting; IEEE Internet of Things Journal IEEE Transactions on Computational Intelligence and AI in Games; IEEE Transactions on Circuits and Systems I; Optimization and Engineering; Wiley Wireless Communications & Mobile Computing; EURASIP Journal on Applied Signal Processing; ACM Mobile Computing and Communications Review; IEE Proceeding on Communications; Transactions on Computational Intelligence and AI in Games.

University Services
- Cougar Chair Leadership Academy
- Director of Computer System Engineering MS Program
- College Promotion and Tenure Committee
- Faculty Search Committee
- Graduate Course Committee
- Graduate Admission Committee

- ECE Faculty Goal Setting Committee

Textbooks

1. Zhu Han and K. J. Ray Liu, *Resource Allocation for Wireless Networks: Basics, Techniques, and Applications*, Cambridge University Press, UK, April, 2008.

2. Ekram Hossain, Dusit Niyato, and Zhu Han, *Dynamic Spectrum Access and Management in Cognitive Radio Networks*, Cambridge University Press, UK, 2009.

3. Zhu Han, Dusit Niyato, Walid Saad, Tamer Basar, and Are Hjørungnes, *Game Theory in Wireless and Communication Networks: Theory, Models and Applications*, Cambridge University Press, UK, 2011.

4. Zhu Han, Husheng Li, and Wotao Yin, *Compressive Sensing for Wireless Networks*, Cambridge University Press, UK, 2013 (Chinese version by Tsinghua University Press Limited 2014).

5. Lingyang Song, Dusit Niyato, Zhu Han, and Ekram Hossain, *Wireless Device-to-Device Communications and Networks*, Cambridge University Press, UK, 2015 (Chinese version by China Machine Press 2016).

6. Zhu Han, Mingyi Hong, and Dan Wang, *Signal Processing and Networking for Big Data Applications*, Cambridge University Press, UK, 2017.

7. Lingyang Song, Risto Wichman, Yonghui Li, and Zhu Han, *Full-Duplex Communications and Networks*, Cambridge University Press, UK 2017.

8. Zhu Han, Dusit Niyato, Walid Saad, and Tamer Basar, *Game Theory for Next-Generation Wireless and Communication Networks: Modeling, Analysis, and Design*, Cambridge University Press, UK, 2019.

9. Dusit Niyato, Nguyen Cong Luong, Ping Wang, and Zhu Han, *Auction Theory for Data Communications and Networking: Fundamentals and Applications*, contract with Cambridge University Press, UK.

Edited Book

10. Ekram Hossain, Zhu Han, and Vincent Poor, *Smart Grid Communications and Networking*, Cambridge University Press, UK, 2012 (Chinese version by Publishing House of Electronic Industry, China, 2013).

Research Monograph Books

1. Hongliang Zhang, Lingyang Song, and Zhu Han, "UAV Communications over Cellular Networks," submitted to Springer Science + Business Media, LLC.

2. Miao Pan, Jinyi Wang, Sai Mounika Errapotu, Xinyue Zhang, Jiahao Ding, and Zhu Han, "Big Data Analytics: Privacy for Cyber-Physical Systems," Springer Science + Business Media, LLC, 2019.

3. Huaqing Zhang, Sami Khairy, Lin X. Cai, and Zhu Han, "Resource Allocation in Unlicensed Long Term Evolution HetNets," Springer Science + Business Media, LLC, 2017.

4. Zhu Han, Yunan Gu, and Walid Saad, "Matching Theory for Wireless Networks," Springer Science + Business Media, LLC, 2017.

5. Yanru Zhang and Zhu Han, "Contract Theory For Wireless Networks," Springer Science + Business Media, LLC, 2017.

6. Hongliang Zhang, Lingyang Song, Zhu Han, and Yingjun (Angela) Zhang, "Hyper-graph Theory in Wireless Communication Networks," Springer Science + Business Media, LLC, 2017.

7. Tianyu Wang, Lingyang Song, Walid Saad, and Zhu Han, "Overlapping Coalition Formation Games in Wireless Communication Networks," Springer Science + Business Media, LLC, 2016.

8. Yun Liao, Tianyu Wang, Lingyang Song and Zhu Han, "Listen and Talk: Full-duplex Cognitive Radio Networks," Springer Science + Business Media, LLC, 2016.

9. Dan Wang and Zhu Han, "Sublinear Algorithms for Big Data Applications," Springer Science + Business Media, LLC, 2015.

10. Chen Xu, Lingyang Song and Zhu Han, "Resource Management for Device-to-Device Underlay Communication," Springer Science + Business Media, LLC, 2013.

Book Chapters
1. Haijun Zhang, George K. Karagiannidis, and Zhu Han, "Power Control in Full Duplex Ultra-Dense Networks," *Ultra-Dense Networks*, Cambridge University Press, Cambridge, UH, editors: Haijun Zhang, Jemin Lee, Tony S. Quek and Chih-Lin I, 2019

2. Mbazingwa E. Mkiramweni, Chungang Yang, Zhu Han, "Mean Field Games for 5G Ultra-Dense Networks: A Resource Management Perspective," *Ultra-Dense Networks for 5G and Beyond: Modelling, Analysis and Design*, Wiley, Hoboken, NJ, editors: Trung Q. Duong, Xiaoli Chu, and Himal A Suraweera, 2019.

3. Huaqing Zhang and Zhu Han, "Distributed Resource Allocation for Network Virtualization," *Handbook of Cognitive Radio,* Springer, editors: Lingyang Song and Wei Zhang, 2019.

4. Neetu Raveendran, Kaigui Bian, Lingyang Song, and Zhu Han, "A Social Choice Theoretic Approach for Analyzing User Behavior in Online Streaming Mobile Applications," *Game Theory for Networking Applications*, EAI/Springer, editors: Ju Bin Song, Husheng Li, and Marceau Coupechoux, 2019.

5. Fahira Sangare and Zhu Han, "RF Energy Harvesting Networks: Existing Techniques and Hardware Technology," *Wireless Energy Harvesting for Future Wireless Communications*, Springer-Verlag New York, USA, editors: Nalin Jayakody, John Thompson, Symeon Chatzinotas, and Salman Durrani, 2018.

6. Yunan Gu, Lin Cai, Lingyang Song, and Zhu Han, "LTE-Unlicensed and Corresponding Distributed Resource Allocation," *Emerging Technologies for 5G Wireless Systems*, Cambridge University Press, editors: Vincent Wong, Robert Schober, Wing Kwan Ng and Li-Chun Wang, 2017

7. Lanchao Liu, Zhu Han, Shuguang Cui, and Vincent Poor, "Big Data Processing for Smart Grid Security," *Big Data over Networks*, Cambridge University Press, edited by Alfred Hero, Jose' Moura, Tom Luo, and Shuguang Cui, 2014.

8. Ju Bin Song and Zhu Han, "Nonparametric Bayesian prediction of primary users' air traffics in cognitive radio networks," *Software-Defined and Cognitive Radio*

Technologies for Dynamic Spectrum Access and Management, IGI-Global, editors: Naima Kaabouch and Wen Chen Hu, 2014.

9. Rongqing Zhang, Lingyang Song, Zhu Han, and Bingli Jiao, "Relay and Jammer Cooperation as a Coalitional Game," *Physical Layer Security in Wireless Communications*, Auerbach Publications, CRC Press, Taylor&Francis Group, editors: Sean Zhou, Lingyang Song, and Yan Zhang, 2013.

10. Rongqing Zhang, Lingyang Song, Zhu Han, and Bingli Jiao, "Ascending Clock Auction for Physical Layer Security," *Physical Layer Security in Wireless Communications*, Auerbach Publications, CRC Press, Taylor&Francis Group, editors: Sean Zhou, Lingyang Song, and Yan Zhang, 2013.

11. Tianyu Wang, Lingyang Song, Zhu Han, and Bingli Jiao, "Dynamic Resource Allocation in Cognitive Radio Relay Networks Using Sequential Auctions," *Mechanisms and Games for Dynamic Spectrum Allocation*, Cambridge University Press, editors: H. Vincent Poor, Holger Boche, Tansu Alpcan, and Michael Honig, 2013.

12. Walid Saad, Zhu Han, and Are Hjørungnes, "Coalitional Games for Cooperative Wireless Cellular Networks," *Cooperative Cellular Wireless Networks*, Cambridge University Press, editors: Ekram Hossain, Dong In Kim, and Vijay K. Bhargava, 2011.

13. Ninoslav Marina, Walid Saad, Zhu Han, and Are Hjørungnes, "Modeling Malicious Behavior in Cooperative Cellular Wireless Networks," *Cooperative Cellular Wireless Networks*, Cambridge University Press, editors: Ekram Hossain, Dong In Kim, and Vijay K. Bhargava, 2011.

14. Guan-Ming Su and Zhu Han, "Auction Based Resource Allocation for Cooperative Wireless Video Transmission," *Multimedia Analysis, Processing, and Communications*, Springer, editors: Weisi Lin, Dacheng Tao, Janusz Kacprzyk, Zhu Li, Ebroul Lzquierdo, and Haohong Wang, 2011.

15. Rajatha Raghavendra and Zhu Han, "Friend or Foe in OFDM Interference Channel," *Game Theory for Wireless Communication and Theory*, Auerbach Publications, Taylor & Francis Group, editors: Yan Zhang and Mohsen Guizani, 2011.

16. Jianwei Huang and Zhu Han, "Game Theory for Dynamic Spectrum Access," invited, *Cognitive Radio Networks: Architectures, Protocols and Standards*, Auerbach Publications, Taylor & Francis Group, editors: Yan Zhang, Jun Zheng and Hsiao-Hwa Chen, 2010.

17. Yan Sun and Zhu Han, "Trusted Cooperative Transmission: Turning a Security Weakness into Security Enhancement," *Securing Wireless Communications at the Physical Layer*, editors: Ruoheng Liu and Wade Trappe, Springer-Verlag, 2009.

18. Zhu Han and H. Vincent Poor, "Impact of Cooperative Transmission over Network Routing," *Cooperative Wireless Communications*, Auerbach Publications, Taylor and Francis Group, editors: Yan Zhang, Hsiao-Hwa Chen and Mohsen Guizani, 2009.

19. Zhu Han, "Degrees of Cooperation in Dynamic Spectrum Access for Distributed Cognitive Radios," invited, *Cognitive Wireless Communication Networks*, Springer, editors: Ekram Hossain and Vijay K. Bhargava, 2007.

Transaction/Magazine/Letter Publications

Published or Accepted

1. Li-Chun Wang, Yung-Sheng Chao, Shao-Hung Cheng, and Zhu Han, "An Integrated Affinity Propagation and Machine Learning Approach for Interference Management in Drone Base Station," to appear *IEEE Transactions on Cognitive Communications and Networks.*

2. Haobo Zhang, Hongliang Zhang, Lingyang Song,Yonghui Li,, Zhu Han, and H. Vincent Poor, "Peer-to-Peer Energy Trading in DC Packetized Power Microgrids," to appear, *IEEE Journal on Selected Areas in Communications*, special issue on Communications and Data Analytics in Smart Grid.

3. Jiong Liu, Zhu Han, and Wei Li, "Performance Analysis of TCP New Reno over Satellite DVB-RCS2 Random Access Links," to appear *IEEE Transactions on Wireless Communications.*

4. Kuo Chun Tsai, Wenyi Hu, Xuqing Wu, Jiefu Chen, and Zhu Han, "Automatic First Arrival Picking via Deep Learning with Human Interactive Learning," to appear, *IEEE Transactions on Geoscience and Remote Sensing.*

5. Minwei Shi, Kai Yang, Niyato Dusit, and Zhu Han, "Coverage Analysis of Integrated Sub-6GHz-mmWave Cellular Networks with Hotspots," to appear *IEEE Transactions on Communications.*

6. Biling Zhang, Yuyang Chen, Jung-Lang Yu, and Zhu Han, "An Indirect-Reciprocity based Incentive Framework for Multimedia Service through Device-to-Device Multicast," to appear *IEEE Transactions on Vehicular Technology.*

7. Yu Du, Jun Li, Long Shi, Tingting Liu, Feng Shu, and Zhu Han, "Two-tier Matching Game in Small Cell Networks with Mobile Edge Computing," to appear *IEEE Transactions on Service Computing.*

8. Yue Yu, Xiao Tang, Jun Wu, BaekGyu Kim, Tiecheng Song, and Zhu Han, "Multi-Leader-Follower Game for MEC-assisted Fusion-Based Vehicle On-Road Analysis," to appear *IEEE Transactions on Vehicular Technology.*

9. Yang Zhang, Zehui Xiong, Dusit Niyato, Ping Wang, and Zhu Han, "Information Trading in Internet of Things for Smart Cities: A Market-Oriented Analysis OCA", to appear *IEEE Network Magazine.*

10. Lixin Li, Huan Ren, Xu Li, Wei Chen, and Zhu Han, "Machine Learning-Based Spectrum Efficiency Hybrid Precoding with Lens Array and Low-Resolution ADCs," to appear *IEEE Access.*

11. Israel Akingeneye, Samrat Nath, Jiangxian Wu, and Zhu Han, 'Quickest Detection of False Data Injection Attacks in Smart Grid with Dynamic Models", accepted *Journal of Emerging and Selected Topics in Power Electronics.*

12. Guoling Liu, Wenjiang Feng, Zhu Han, and Weiheng Jiang, "Performance Analysis and Optimization of Cooperative Full-Duplex D2D Communication Underlaying Cellular Networks," to appear *IEEE Transactions on Wireless Communications.*

13. Hang Qin and Zhu Han, "Crude-Oil Scheduling Network in Smart Field under Cyber-Physical System: A Fractional Programming Approach," to appear *IEEE Access.*

14. Yan Kyaw Tun, Nguyen H. Tran, Duy T. Ngo, Shashi Raj Pandey, Zhu Han, and Choong Seon Hong, "Wireless Network Slicing: Generalized Kelly Mechanism Based Resource Allocation," to appear *IEEE Journal on Selected Areas in Communications*, special issue on Network Softwarization & Enablers.

15. Xuefeng Xiao, Manzoor Ahmed, Xinlei Chen, Yulei Zhao, Yong Li, and Zhu Han, "Accelerating Content Delivery via Efficient Resource Allocation for Network Coding Aided D2D Communications," to appear *IEEE Access*.

16. Benedetta Picano, Romano Fantacci, and Zhu Han, "Nonlinear Dynamic Chaos Theory Framework for Passenger Demand Forecasting in Smart City," to appear *IEEE Transactions on Vehicular Technology*.

17. Yu Zhang, Bin Li, Feifei Gao, and Zhu Han, "A Robust Design for Ultra Reliable Ambient Backscatter Communication Systems," to appear *IEEE Internet of Things Journal*.

18. Ruoguang Li, Li Wang, Xiaoming Tao, Mei Song, and Zhu Han, "Generalized Benders Decomposition to Secure Energy Efficient Resource Allocation for Multiuser Full-Duplex Relay Cooperative Networks," to appear, *IEEE Transactions on Vehicular Technology*.

19. Muhammad Waqas, Yong Niu, Yong Li, Depeng Jin, Sheng Chen, and Zhu Han, "A Comprehensive Survey on Mobility-Aware D2D Communications: Principles, Practice and Challenges," to appear *IEEE Communications Surveys & Tutorial*.

20. Huaqing Zhang, Wenbo Ding, Jian Song, and Zhu Han, "Resource Allocation in Heterogeneous Network with Visible Light Communication and D2D: A Hierarchical Game Approach," to appear *IEEE Transactions on Communications*.

21. Fahira Sangare, Duy H. N. Nguyen, and Zhu Han, "Learning Frameworks for Dynamic Joint RF Energy Harvesting and Channel Access," appear *IEEE Access*.

22. Chungang Yang, Yue Zhang, Jiandong Li, and Zhu Han, "Distributed Interference-Aware Traffic Offloading and Power Control in Ultra-Dense Networks: Mean Field Game With Dominating Player," to appear *IEEE Transactions on Vehicular Technology*.

23. Zhongyu Miao, Ying Wang, and Zhu Han, "A Supplier-Firm-Buyer Framework for Computation and Content Resource Assignment in Wireless Virtual Networks," to appear *IEEE Transactions on Wireless Communications*.

24. Bo Gu, Yifei Wei, Mei Song, Zhu Han, "Auction-Based Relay Selection and Power Allocation in Green Relay-Assisted Cellular Networks," to appear *IEEE Transactions on Vehicular Technology*.

25. Junhua Wang, Kai Liu, Bin Li, Tingting Liu, Ruoguang Li, and Zhu Han, "Delay-sensitive Multi-period Computation Offloading with Reliability Guarantees in Fog Networks," to appear *IEEE Transactions on Mobile Computing*.

26. Bo Yang, Xuelin Cao, Lijun Qian, and Zhu Han, "A Machine Learning Enabled MAC Framework for Heterogeneous Internet-of-Things Networks," to appear *IEEE Transactions on Wireless Communications*.

27. Di Zhou, Min Sheng, Bin Li, Mounika Errapotu Sai, Jiandong Li, and Zhu Han, "Distributionally Robust Planning for Data Delivery in Distributed Satellite Cluster Networks," to appear *IEEE Transactions on Wireless Communications*.

28. Tingting Liu, Jun Li, Feng Shu, Haibing Guan, Yongpeng Wu, and Zhu Han, "Incentive Mechanism Design for Two-Layer Wireless Edge Caching Networks Using Contract Theory," to appear *IEEE Transactions on Services Computing.*

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197. Xiao Tang, Pinyi Ren, and Zhu Han, "Iterative Power Optimization Towards Secure Multi-Channel Full-Duplex Communication," *IEEE Globe Communication Conference (Globecom)*, Washington DC, December 2016.

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199. Huaqing Zhang, Wenbo Ding, Jian Song, and Zhu Han, "A Hierarchical Game Approach for Visible Light Communication and Multi-Hop D2D Heterogeneous Network," *IEEE Globe Communication Conference (Globecom)*, Washington DC, December 2016.

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209. Qiuyang Shen, Jiefu Chen, and Zhu Han, "Total Variation Denoising of Azimuthal Resistivity Inversion in Geosteering," *SEG Annual Meeting*, Dallas, TX, October 2016.

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231. Chunxiao Jiang, Zhu Han, Yong Ren, and Lajos Hanzo, "Information Credibility Equilibrium of Cooperative Networks," *IEEE Wireless Communications and Networking Conference,* Doha, Qatar, April 2016.

232. Yangqing Li, Wei Chen, Changchuan Yin, and Zhu Han, "An Approximate Message Passing Approach For Tensor-Based Seismic Data Interpolation With Randomly Missing Traces," *IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, Shanghai, China, March 2016.

233. Radwa Sultan, Lingyang Song, Karim G. Seddik, and Zhu Han, "Users Association in Small Cell Networks with Massive MIMO," invited *International Conference on Computing, Networking and Communications*, Kauai, HI, February 2016

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237. Yun Liao, Boya Di, Kaigui Bian, Lingyang Song, Dusit Niyato, and Zhu Han, "Cross-layer Protocol Design for Distributed Full-duplex Network," *IEEE Global Communications Conference*, San Diego, CA, December 2015.

238. Yue Meng, Chunxiao Jiang, Zhu Han, Tony Q. S. Quek, and Yong Ren, "Learning in Small Cell Networks: A Non-Bayesian Social Interactive Model," *IEEE Global Communications Conference*, San Diego, CA, December 2015.

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240. Yun Hu, Hongyan Li and Zhu Han, "Delay Bound Analysis Using Martingale for Multimedia DTN under Heterogeneous Network for High-Speed Trains," *IEEE Global Communications Conference*, San Diego, CA, December 2015.

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242. Yong Xiao, Dusit Niyato, Zhu Han, and Luiz A. DaSilva, "Joint Optimization for Power Scheduling and Transfer in Energy Harvesting Communication Systems," *IEEE Global Communications Conference*, San Diego, CA, December 2015.

243. Huaqing Zhang, Yong Xiao, Lin X. Cai, Lingyang Song, Niyato Dusit, and Zhu Han, "Hieratical Competition for LTE Unlicensed using Stackelberg Game and Bargaining," *IEEE Global Communications Conference*, San Diego, CA, December 2015.

244. Ali Arab, Amin Khodaei, Suresh Khator, and Zhu Han, "Transmission Network Restoration Considering AC Power Flow Constraints," *IEEE International Conference on Smart Grid Communications (SmartGridComm)*, Miami, FL, November 2015.

245. Yangqing Li, Wei Chen, Changchuan Yin, and Zhu Han, "Approximate Message Passing for Sparse Recovering of Spatially and Temporally Correlated Data," invited *IEEE International Conference on Communications in China,* Shenzhen, China, November 2015.

246. Zilong Wu, Li Wang, Giuseppe Araniti, and Zhu Han, "Exploiting Social-Interest Interactions on User Clustering and Content Dissemination in Device-to-Device Communications," invited *IEEE International Conference on Communications in China,* Shenzhen, China, November 2015.

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249. Yun Liao, Kaigui Bian, Liangyang Song, and Zhu Han, "Robust Copperative Spectrum Sensing in Full-duplex Cognitive Radio Networks," *International Conference on Ubiquitous and Future Networks (ICUFN 2015)*, Japan, July 2015.

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251. Ali Arab, Suresh K. Khator, Qianmei Feng, and Zhu Han, "Control Theoretic Scheduling of Angiography for Implanted Stents in Human Arteries," *Annual Industrial and Systems Engineering Research Conference*, Nashville, TN, June 2015.

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254. Dong Wang, Bo Bai, Wei Chen, and Zhu Han, "Secure Green Communication for Amplify-and-Forward Relaying with Eavesdroppers," *IEEE International Conference on Communications*, London, UK, June, 2015.

255. Yong Xiao, Zhu Han, Dusit Niyato and Chau Yuen, "Bayesian Reinforcement Learning for Energy Harvesting Communication Systems with Uncertainty," *IEEE International Conference on Communications*, London, UK, June, 2015.

256. Francesco Chiti, Romano Fantacci, Enrico Dei, and Zhu Han, "Context Aware Clustering in VANETs: a Game Theoretic Perspective," *IEEE International Conference on Communications*, London, UK, June, 2015.

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258. Xiong Zhou, Suili Feng, Zhu Han, and Yuan Liu, "Distributed User Association and Interference Coordination in HetNets Using Stackelberg Game," *IEEE International Conference on Communications*, London, UK, June, 2015.

259. Dong Wang, Bo Bai, Wei Chen, and Zhu Han, "Energy Efficiency Maximization for Secure Data Transmission over DF Relay Networks," *IEEE International Conference on Communications*, London, UK, June, 2015.

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261. Dusit Niyato, Ping Wang, Dong In Kim, Zhu Han, and Lu Xiao, "Game Theoretic Modeling of Jamming Attack in Wireless Powered Communication Networks," *IEEE International Conference on Communications*, London, UK, June, 2015.

262. He Chen, Yonghui Li, Zhu Han, and Branka Vucetic, "A Stackelberg Game-Based Energy Trading Scheme for Power Beacon-Assisted Wireless-Powered Communication," *40th IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, Brisbane, Australia, April 2015.

263. Dusit Niyato, Ping Wang, Dong In Kim, Zhu Han, and Lu Xiao, "Performance Analysis of Delay-Constrained Wireless Energy Harvesting Communication Networks under Jamming Attacks," *IEEE Wireless Communications and Networking Conference*, New Orleans, LA, March 2015.

264. Tianyu Wang, Lingyang Song, and Zhu Han, "Dynamic FemtoCaching for Mobile Users," *IEEE Wireless Communications and Networking Conference*, New Orleans, LA, March 2015.

265. Joseph Kamto, Lijun Qian, Wei Li, and Zhu Han, "Biconnected Tree for Robust Data Collection in Advanced Metering Infrastructure," *IEEE Wireless Communications and Networking Conference*, New Orleans, LA, March 2015.

266. Ruizhou Ding, Tianyu Wang, Lingyang Song, Zhu Han, and Jianjun Wu, "Roadside-Unit Caching in Vehicular Ad Hoc Networks for Efficient Popular Content Delivery," *IEEE Wireless Communications and Networking Conference*, New Orleans, LA, March 2015.

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268. Lanchao Liu, Xianfu Chen, Mehdi Bennis, Guoliang Xue, and Zhu Han, "A Distributed ADMM Approach for Mobile Data Offloading in Software Defined Network," *IEEE Wireless Communications and Networking Conference*, New Orleans, LA, March 2015.

269. Yanru Zhang, Yunan Gu, Lanchao Liu, Miao Pan, Zaher Dawy, and Zhu Han, "Incentive Mechanism in Crowdsourcing with Moral Hazard," *IEEE Wireless Communications and Networking Conference*, New Orleans, LA, March 2015.

270. Yunan Gu, Yanru Zhang, Miao Pan, and Zhu Han, "Student Admission Matching based Content-Cache Allocation," *IEEE Wireless Communications and Networking Conference*, New Orleans, LA, March 2015.

271. Fahira Sangare, Ali Arab, Miao Pan, Lijun Qian, Suresh Khator, and Zhu Han, "RF Energy Harvesting for WSNs via Dynamic Control of Unmanned Vehicle Charging," *IEEE Wireless Communications and Networking Conference*, New Orleans, LA, March 2015.

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274. Ramy E. Ali, Fadel F. Digham, Karim G. Seddik, Mohammed Nafie, and Zhu Han, "A Probabilistic MAC for Cognitive Radio Systems with Energy Harvesting Nodes," *IEEE globalsip*, Atlanta, December, 2014.

275. Husheng Li and Zhu Han, "Communication Requirement for Distributed Statistical Machine Learning with Application in Waveform Cognition," *IEEE globalsip*, Atlanta, December, 2014.

276. Erte Pan and Zhu Han, "Non-parametric Bayesian Learning with Deep Learning Structure and Its Applications in Wireless Networks," *IEEE globalsip*, Atlanta, December, 2014.

277. Radwa Aly Sultan, Lingyang Song, and Zhu Han, "Impact of Full Duplex on Resource Allocation for Small Cell Networks," *IEEE globalsip*, Atlanta, December, 2014.

278. Nguyen H. Tran, Hoang Dai Tran, Long Bao Le, Zhu Han, and Choong Seon Hong, "Load Balancing and Pricing for Spectrum Access Control in Cognitive Radio Networks," *IEEE Global Communications Conference,* December, Austin, TX, 2014.

279. Bidushi Barua, Zaheer Khan, Zhu Han, Matti Latva-aho, and Marcos Katz, "On the Selection of Best Devices for Cooperative Wireless Content Delivery," *IEEE Global Communications Conference,* December, Austin, TX, 2014.

280. Lanchao Liu, Shaolei Ren, and Zhu Han, "Scalable Workload Management for Water Efficiency in Data Centers," *IEEE Global Communications Conference,* December, Austin, TX, 2014.

281. Yawei Pang, Yanru Zhang, Yunan Gu, Miao Pan, Pan Li and Zhu Han, "Efficient Data Collection for Wireless Rechargeable Sensor Clusters in Harsh Terrains Using UAVs," *IEEE Global Communications Conference,* December, Austin, TX, 2014.

282. Yong Xiao, Zhu Han, and Luiz A. DaSilva, "Opportunistic Relay Selection for Cooperative Energy Harvesting Communication Networks," *IEEE Global Communications Conference,* December, Austin, TX, 2014.

283. Erte Pan, Miao Pan, Zhu Han, and Vernaldo Wright, "Mobile Trace Inference Based on Tensor Voting," *IEEE Global Communications Conference,* December, Austin, TX, 2014.

284. Huaqing Zhang, Dusit Niyato, Lingyang Song, Tao Jiang, and Zhu Han, "Zero-Determinant Strategy in Cheating Management of Wireless Cooperation," *IEEE Global Communications Conference,* December, Austin, TX, 2014.

285. Yun Liao, Tianyu Wang, Lingyang Song, and Zhu Han, "Listen-and-Talk: Full-duplex Cognitive Radio Networks," *IEEE Global Communications Conference,* December, Austin, TX, 2014 **Best Paper Award**.

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287. Yunan Gu, Yanru Zhang, Miao Pan, and Zhu Han, "Cheating in Matching of Device to Device Pairs in Cellular Networks," *IEEE Global Communications Conference,* December, Austin, TX, 2014.

288. Husheng Li and Zhu Han, "Distributed Source Coding for Controlling Cyber Physical Systems with Application in Smart Grids," *IEEE Global Communications Conference,* December, Austin, TX, 2014.

289. Muhammad Ejaz Ahmed, Ju Bin Song, and Zhu Han, "Mitigating Malicious Attacks using Bayesian Nonparametric Clustering in Collaborative Cognitive Radio Networks," *IEEE Global Communications Conference,* December, Austin, TX, 2014.

290. Yanru Zhang, Yunan Gu, Miao Pan, and Zhu Han, "Distributed Matching Based Spectrum Allocation in Cognitive Radio Networks," *IEEE Global Communications Conference,* December, Austin, TX, 2014.

291. Huaqing Zhang, Mehdi Bennis, Luiz A. DaSilva, and Zhu Han, "Multi-leader Multi-follower Stackelberg Game among Wi-Fi, Small Cell and Macrocell Networks," *IEEE Global Communications Conference,* December, Austin, TX, 2014.

292. Huaqing Zhang, Fei Li, Niyato Dusit, Lingyang Song, Tao Jiang, and Zhu Han, "Zero-determinant Strategy in Power Control of Small Cell Network," invited, *IEEE International Conference on Communication Systems (ICCS)*, Macau, China, November 2014.

293. Jia Hao, Hongliang Zhang, Lingyang Song, and Zhu Han, "Graph-based Resource Allocation for Device-to-Device Communications Aided Cellular Network," *IEEE International Conference on Communications in China (ICCC)*, Shanghai, China, October 2014.

294. Tian Zhang, Wei Chen, Zhu Han, and Zhigang Cao, "Electric Vehicle Charging Scheduling Under Local Renewable Energy and Stochastic Grid Power Price", *IEEE SmartGridComm*, Venice, Italy, October, 2014.

295. Dusit Niyato, Ping Wang, Peter Han Joo Chong, Zhu Han and Dong In Kim, "Optimal Energy Management Policy of a Mobile Cloudlet with Wireless Energy Charging", *IEEE SmartGridComm*, Venice, Italy, October, 2014.

296. Ali Arab, Eylem Tekin, Amin Khodaei, Suresh Khator, and Zhu Han, "Dynamic Maintenance Scheduling for Power Systems Incorporating Hurricane Effects", *IEEE SmartGridComm*, Venice, Italy, October, 2014.

297. Wenbo Wang, Andres, Kwasinski, and Zhu Han, "Power Allocation with Stackelberg Game in Femtocell Networks: A Self-Learning Approach," *IEEE International Conference on Sensing, Communication, and Networking (SECON)*, Singapore, July 2014.

298. Nguyen H. Tran, Shaolei Ren, Zhu Han, Sung Man Jang, Seung Il Moon, and Choong Seon Hong, "Demand Response of Data Centers: A Real-time Pricing Game between Utilities in Smart Grid," *USENIX Feedback Computing workshop*, Philadelphia, PA, June 2014.

299. Serveh Shalmashi, Guowang Miao, Zhu Han, and Slimane Ben Slimane, "Interference Constrained Device-to-Device Communications," *IEEE International Conference on Communications*, Sydney, Australia, June 2014.

300. Wasiu Opeyemi Oduola, Xiangfang Li, Lijun Qian, and Zhu Han, "Power Control for Device-to-Device Communications as an Underlay to Cellular System," *IEEE International Conference on Communications*, Sydney, Australia, June 2014.

301. Siavash Bayat, Yonghui Li, Zhu Han, Mischa Dohler, and Branka Vucetic, "Distributed Massive Wireless Access for Cellular Machine-to-Machine Communication," *IEEE International Conference on Communications*, Sydney, Australia, June 2014.

302. Zijie Zheng, Tianyu Wang, Lingyang Song, and Zhu Han, "Efficient Resource Allocation for Mobile Social Networks in D2D Communication Underlaying Cellular Networks," *IEEE International Conference on Communications*, Sydney, Australia, June 2014.

303. Yue Sun, Tianyu Wang, Lingyang Song, and Zhu Han, "Efficient Resource Optimization for Heterogeneous Smart-Building Networks," *IEEE International Conference on Communications*, Sydney, Australia, June 2014.

304. Hang Zhang, Tianyu Wang, Lingyang Song, and Zhu Han, "Radio Resource Allocation for Physical-Layer Security in Device to Device Underlay Communications," *IEEE International Conference on Communications*, Sydney, Australia, June 2014.

305. Xiaofei Wang, Min Chen, Zhu Han, Dapeng Wu, Taekyoung Kwon, "TOSS: Traffic Offloading by Social Network Service-Based Opportunistic Sharing in Mobile Social Networks," *the 33rd Annual IEEE International Conference on Computer Communications (INFOCOM),* Toronto, Canada, April-May, 2014.

306. Walid Saad, Zhu Han, Rong, Zheng, Merouane Debbah, and H. Vincent Poor, "A College Admissions Game for Uplink User Association in Wireless Small Cell Networks," *the 33rd Annual IEEE International Conference on Computer Communications (INFOCOM),* Toronto, Canada, April-May, 2014.

307. Hongliang Zhang, Lili Ma, Lingyang Song, and Zhu Han, "Wireless Device-to-Device Hypergraph Optimization," *IEEE INFOCOM, Student Activities,* Toronto, Canada, April-May, 2014.

308. Zijie Zheng, Tianyu Wang, Lingyang Song, Zhu Han, and Jianjun Wu, "Social-Aware Multi-File Dissemination in Device-to-Device Overlay Networks," *IEEE INFOCOM, Student Activities,* Toronto, Canada, April-May, 2014.

309. Siavash Bayat, Yonghui Li, Zhu Han, Mischa Dohler, and Branka Vucetic, "Distributed Data Aggregation in Machine-to-Machine Communication Networks Based on Coalitional Game," *IEEE Wireless Communications and Networking Conference,* Istanbul, Turkey, April 2014.

310. Wenbo Wang, Andres Kwasinski, and Zhu Han, "A Routing Game in Cognitive Radio Networks against Routing-Toward-Primary-User Attacks," *IEEE Wireless Communications and Networking Conference,* Istanbul, Turkey, April 2014.

311. Wenbo Wang, Andres Kwasinski, and Zhu Han, "Routing Based on Layered Stochastic Games for Multi-Hop Cognitive Radio Networks," *IEEE Wireless Communications and Networking Conference,* Istanbul, Turkey, April 2014.

312. Alireza Eshraghi, Behrouz Maham, Zhu Han, and Morteza Banagar, "Efficiency and Coverage Improvement of Active RFID Two-Hop Relay Systems," *IEEE Wireless Communications and Networking Conference,* Istanbul, Turkey, April 2014.

313. Lanchao Liu, Qing Ling, and Zhu Han, "Decentralized Gauss-Newton Method For Nonlinear Least Squares On Wide Area Network," invited, *The 2nd Radio and Antenna Days of the Indian Ocean (RADIO)*, Mauritius, April 2014.

314. Ali Arab, Amin Khodaei, Zhu Han, and Suresh Khator, "Optimal Restoration Planning for Smart Grid under Natural Disaster," *2014 UT Energy Forum Texas Energy Research Challenge*, Austin, February, 2014.

315. Boya Di, Tianyu Wang, Lingyang Song, and Zhu Han, "Incentive Mechanism for Collaborative Smartphone Sensing using Overlapping Coalition Formation Games," *IEEE Globe Communication Conference (Globecom)*, Atlanta, GA, December 2013.

316. Yanru Zhang, Lingyang Song, Walid Saad, Zaher Dawy, and Zhu Han, "Exploring Social Ties for Enhanced Device-to-Device Communications in Wireless Networks," *IEEE Globe Communication Conference (Globecom)*, Atlanta, GA, December 2013.

317. Mohammad Esmalifalak, Nam Tuan Nguyen, Rong Zheng, and Zhu Han, "Detecting Stealthy False Data Injection Using Machine Learning in Smart Grid," *IEEE Globe Communication Conference (Globecom)*, Atlanta, GA, December 2013.

318. Najmeh Forouzandehmehr, Samir M. Perlaza, Zhu Han, and H. Vincent Poor, "A Satisfaction Game for Heating, Ventilation and Air Conditioning Control of Smart Buildings," *IEEE Globe Communication Conference (Globecom)*, Atlanta, GA, December 2013.

319. Zaheer Khan, Marcos Katz, Zhu Han, Angeliki Alexiou and Luiz A. DaSilva, "Autonomous Opportunistic Spectrum Access Strategies: Benefits of Adaptive Strategies," *31ST Wireless World Research Forum Meeting*, Vancouver, Canada, October, 2013.

320. Lanchao Liu, Amin Khodaei, Wotao Yin, and Zhu Han, "A Distribute Parallel Approach for Big Data Scale Optimal Power Flow with Security Constraints," *IEEE SmartGridComm*, Vancouver, Canada, October 2013.

321. Qiumin Dong, Dusit Niyato, Ping Wang, and Zhu Han, "An Adaptive Scheduling of PHEV Charging: Analysis under Imperfect Data Communication," *IEEE SmartGridComm*, Vancouver, Canada, October 2013.

322. Zhenghao Zhang, Husheng Li, Ju Bin Song, Zhu Han, Gaoyong Luo, and Wenjing Hu, "Wireless Communication Aided Differential Relay Protection in Smart Grids: A Concerted Blitzkrieg," *IEEE SmartGridComm*, Vancouver, Canada, October 2013.

323. Husheng Li, Zhu Han, and Ju Bin Song, "Stabilizing Hybrid Data Traffics in Cyber Physical Systems with Case Study on Smart Grid," *IEEE SmartGridComm*, Vancouver, Canada, October 2013.

324. Husheng Li, Zhu Han, and Ju Bin Song, "Blind Control Synthesis for Large Dynamical Systems with Application in Smart Grids: A Non-equilibrium Statistical Mechanics Approach," *IEEE SmartGridComm*, Vancouver, Canada, October 2013.

325. Hang Zhang, Tianyu Wang, Lingyang Song, and Zhu Han, "Turning Interference Weakness into PHY Security Enhancement for Cognitive Radio Networks," *2013 International Conference on Wireless Communications and Signal Processing (WCSP)*, Hangzhou, China, October, 2013.

326. Ali Arab, Amin Khodaei, Suresh Khator, Zhu Han, and Qifeng Ding, "Efficient Post-Hurricane Transmission Network Restoration to Minimize Customer Interruption," *IEEE Great Lakes Symposium on Smart Grid*, Chicago, IL, September, 2013.

327. Behrouz Maham, Walid Saad, Merouane Debbah, and Zhu Han, "Interference Analysis for Spatial Reused Cooperative Multihop Wireless Networks," *IEEE 2013 IEEE 22nd International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC)*, Lingdon, UK, September 2013.

328. Hongliang Zhang, Tianyu Wang, Lingyang Song, and Zhu Han, "Optimization of Joint Resource Allocation and Power Control for D2D Communications Networks," *IEEE International Conference on Communications in China (ICCC), D2D Workshop*, Xi'an, China, August 2013.

329. Yanru Zhang, Erte Pan, Lingyang Song, Walid Saad, Zaher Dawy, and Zhu Han, "Social Network Enhanced Device-to-Device Communication Underlaying Cellular Networks," *IEEE International Conference on Communications in China (ICCC), D2D Workshop*, Xi'an, China, August 2013.

330. Samir M. Perlaza, Arsenia Chorti, H. Vincent Poor, and Zhu Han, "On the Impact of Network-State Knowledge on the Feasibility of Secrecy," *IEEE International Symposium on Information Theory (ISIT)*, Istanbul, Turkey, July 2013.

331. Tamseel Mahmood Syed, Nghi H. Tran, Tuyen X. Tran, and Zhu Han, "Precoder Design for a Single-Relay Non-Orthogonal AF System based on Mutual Information," *The 9th IEEE International Wireless Communications and Mobile Computing Conference (IWCMC 2013)*, Cagliari, Italy, July 2013.

332. Samir M. Perlaza, Arsenia Chorti, H. Vincent Poor, and Zhu Han, "On the Trade-offs between Network State Knowledge and Secrecy," invited, *2013 Global Wireless Summit*, Atlantic City, NJ, June 2013.

333. Tina Mathews and Zhu Han, "USRP2 Implementation of Compressive Sensing Based Channel Estimation in OFDM," invited, *the Third International Conference on Communications and Information Technology (ICCIT-2013)*, Beirut, Lebanon, June 2013.

334. Lanchao Liu, Mohammad Esmalifalak, and Zhu Han, "Detection of False Data Injection in Power Grid Exploiting Low Rank and Sparsity," *IEEE International Conference on Communications*, Budapest, Hungary, June 2013.

335. Tian Zhang, Wei Chen, Zhu Han, and Zhigang Cao, "Coalitional Game Theoretic Approach for Cooperative Transmission in Vehicular Networks," *IEEE International Conference on Communications*, Budapest, Hungary, June 2013.

336. Tianyu Wang, Lingyang Song, Zhu Han, Zhaohua Lu, and Liujun Hu, "Popular Content Distribution in Vehicular Networks using Coalition Formation Games," *IEEE International Conference on Communications*, Budapest, Hungary, June 2013.

337. Feiran Wang, Chen Xu, Lingyang Song, Qun Zhao, Xiaoli Wang, and Zhu Han, "Energy-Aware Resource Allocation for Device-to-Device Underlay Communication," *IEEE International Conference on Communications*, Budapest, Hungary, June 2013.

338. Mohammad Aghababaie Alavijeh, Behrouz Maham, Zhu Han, and Said Nader Esfahani, "Efficient Anti-Jamming Truthful Spectrum Auction among Secondary Users in Cognitive Radio Networks," *IEEE International Conference on Communications*, Budapest, Hungary, June 2013.

339. Rongqing Zhang, Lingyang Song, Zhu Han, Xiang Cheng, and Bingli Jiao, "Distributed Resource Allocation for Device-to-Device Communications Underlaying Cellular Networks," *IEEE International Conference on Communications*, Budapest, Hungary, June 2013.

340. Qiumin Dong, Dusit Niyato, Ping Wang, and Zhu Han, "Deferrable Load Scheduling Optimization under Power Price Information Attacks in Smart Grid," *IEEE Wireless Communications and Networking Conference*, Shanghai, China, April 2013.

341. Nam Tuan Nguyen, Rong Zheng, and Zhu Han, "UMLI: An Unsupervised Mobile Locations Extraction Approach with Incomplete Data," *IEEE Wireless Communications and Networking Conference*, **Best Paper Award**, Shanghai, China, April 2013.

342. Muhammad Ejaz Ahmed, Ju Bin Song, and Zhu Han, "Traffic Pattern-Based Reward Maximization for Secondary User in Dynamic Spectrum Access," *IEEE Wireless Communications and Networking Conference*, Shanghai, China, April 2013.

343. Chen Wang, Yuan Liu, Meixia Tao, Zhu Han, and Dong In Kim, "Stackelberg Game for Spectrum Reuse in the Two-Tier LTE Femtocell Network," *IEEE Wireless Communications and Networking Conference*, Shanghai, China, April 2013.

344. Yanbo Ma, Chen Wang, Meixia Tao, and Zhu Han, "Content-Aware Transmission with Delay Threshold in Heterogeneous Networks," *IEEE Wireless Communications and Networking Conference*, Shanghai, China, April 2013.

345. Feiran Wang, Lingyang Song, Zhu Han, Qun Zhao, and Xiaoli Wang, "Joint Scheduling and Resource Allocation for Device-to-Device Underlay Communication," *IEEE Wireless Communications and Networking Conference*, Shanghai, China, April 2013.

346. Tianyu Wang, Lingyang Song, Zhu Han, and Walid Saad, "Overlapping Coalitional Games for Collaborative Sensing in Cognitive Radio Networks," *IEEE Wireless Communications and Networking Conference*, Shanghai, China, April 2013.

347. Ziqiang Feng, Lingyang Song, Zhu Han, Dusit Niyato, and Xiaowu Zhao, "Cell Selection in Two-Tier Femtocell Networks with Open/Closed Access Using Evolutionary Game," *IEEE Wireless Communications and Networking Conference*, Shanghai, China, April 2013.

348. Zengfeng Zhang, Lingyang Song, Zhu Han, Walid Saad, and Zhaohua Lu, "Interference Management in Small Cell Networks: An Overlapping Coalitional Game Approach," *IEEE Wireless Communications and Networking Conference*, Shanghai, China, April 2013.

349. Tianyu Wang, Lingyang Song, Zhu Han, Junfeng Zhang, and Xiaodan Zhang, "Dynamic Resource Allocation in Cognitive Radio Two-Way Relay Networks Using Sequential Auctions," invited *IEEE International Wireless Symposium*, Beijing, April 2013.

350. Ting Ning, Zhipeng Yang, Hongyi Wu, and Zhu Han, "Self-Interest-Drive Incentives for Ad Dissemination in Autonomous Mobile Social Networks," The 32nd IEEE International Conference on Computer Communications, INFOCOM, Turin, Italy, April 2013.

351. Rong Zheng, Thanh Le, and Zhu Han, "Approximate Online Learning for Passive Monitoring of Multi-channel Wireless Networks," The 32nd IEEE International Conference on Computer Communications, INFOCOM, Turin, Italy, April 2013.

352. Tian Zhang, Wei Chen, Zhu Han, and Zhigang Cao, "A Cross-Layer Perspective on Energy Harvesting Aided Green Communications over Fading Channels," *2013 IEEE INFOCOM Workshop on Communications and Control for Smart Energy Systems*, Turin, Italy, April 2013.

353. Lanchao Liu and Zhu Han, "Scalable Sparse Optimization for Big Power Grid Data," *NSF Workshop on Big Data From Signal Processing to Systems Engineering*, Arlington, VA, March, 2013.

354. Chen Xu, Lingyang Song, Zhu Han, Do Li, and Bingli Bao, "Resource Allocation Using A Reverse Iterative Combinatorial Auction for Device-to-Device Underlay Cellular Networks," IEEE Globe Communication Conference, Anaheim, CA, December 2012.

355. Nam Tuan Nguyen, Yichuan Wang, Husheng Li, Xin Liu and Zhu Han, "Extracting Typical Users' Moving Patterns Using Deep Learning," IEEE Globe Communication Conference, Anaheim, CA, December 2012.

356. Mohammad Esmalifalak, Ge Shi, Zhu Han, and Lingyang Song, "Attack Against Electricity Market-Attacker and Defender Gaming," IEEE Globe Communication Conference, Anaheim, CA, December 2012.

357. Arsenia Chorti, Samir M. Perlaza, Zhu Han, and H. Vincent Poor, "Physical Layer Security in Wireless Networks with Passive and Active Eavesdroppers," IEEE Globe Communication Conference, Anaheim, CA, December 2012.

358. Samir M. Perlaza, Dusit Niyato, Zhu Han, and Vincent Poor, "On the Decentralized Management of Scrambling Codes in Small Cell Networks," invited, *IEEE Singapore International Conference on Communication Systems (ICCS)*, Singapore, November 2012.

359. Samir M. Perlaza, H. Vincent Poor, and Zhu Han, "Learning Efficient Satisfaction Equilibria via Trial and Error," 2012 Conference Record of the Forty Sixth Asilomar Conference on Signals, Systems and Computers (ASILOMAR), Pacific Grove, CA, November, 2012.

360. Yi Huang, Lifeng Lai, Husheng Li, Wei Chen, and Zhu Han, "Online Quickest Multiarm Bandit Algorithm for Distributive Renewable Energy Resource," *IEEE International Conference on Smart Grid Communications, Smartgridcomm*, **Best Paper Award**, Tainan, October 2012.

361. Yifan Li, Ran Wang, Ping Wang, Dusit Niyato, Walid Saad, and Zhu Han, "Resilient PHEV Charging Policies under Price Information Attacks," *IEEE International Conference on Smart Grid Communications, Smartgridcomm*, Tainan, October 2012.

362. Chen Wang, Meixia Tao, and Zhu Han, "Partition Function Game for Rate Optimization in Random Interference Networks," Fourth International Conference on Wireless Communications and Signal Processing, Huangshan City, China, October 2012.

363. Feiran Wang, Chen Xu, Lingyang Song, and Zhu Han, "Energy-Efficient Radio Resource and Power Allocation for Device-to-Device Communication Underlaying Cellular Networks," Fourth International Conference on Wireless Communications and Signal Processing, **Best Paper Award**, Huangshan City, China, October 2012.

364. Jun Deng, Rongqing Zhang, Lingyang Song, Zhu Han, Guang Yang, and Bingli Jiao, "Joint Power Control and Subchannel Allocation for OFDMA Femtocell Networks Using Distributed Auction Game," *Fourth International Conference on Wireless Communications and Signal Processing*, Huangshan City, China, October 2012.

365. Xiaofei Wang, Min Chen, Zhu Han, Ted "Taekyoung" Kwon, and Yanghee Choi, "Content Dissemination by Pushing and Sharing in Mobile Cellular Networks: An Analytical Study," *the 9th IEEE International Conference on Mobile Ad hoc and Sensor Systems (MASS)*, Las Vegas, NV, October 2012.

366. Samir M. Perlaza, Ravi Tandon, H. Vincent Poor, and Zhu Han, "The Nash Equilibrium Region of the Linear Deterministic Interference Channel with Feedback," *Allerton Conference on Communication, Control, and Computing*, Allerton, IL, Sep.-Oct. 2012.

367. Ziqiang Feng, Jun Deng, Lingyang Song, Zhu Hany, Guang Yang, and Bingli Jiao, "Joint Access Control and Subchannel Allocation for OFDMA Femtocell Network Using a Truthful Mechanism," *International Workshop on Practical Issues and Applications in Next Generation Wireless Networks*, in conjunction with ACM MOBICOM 2012, Istanbul, Turkey, August 2012.

368. Tianyu Wang, Lingyang Song, Zhu Han, and Bingli Jiao, "Popular Content Distribution in CR-VANETs with Joint Spectrum Sensing and Channel Access," *Chinacom*, Kunming, China, August 2012 **Best Student Paper Award**.

369. Walid Saad, Zhu Han, and H. Vincent Poor, "On the Physical Layer Security of Backscatter RFID Systems," invited, *The Ninth International Symposium on Wireless Communication Systems*, Paris, France, August 2012.

370. Nam Tuan Nguyen, Yichuan Wang, Xin Liu, Rong Zheng, and Zhu Han, "A Nonparametric Bayesian Approach for Opportunistic Data Transfer in Cellular Networks," invited, *The 7th International Conference on Wireless Algorithms, Systems, and Applications*, Yellow Mountains, China, August 2012.

371. Tianyu Wang, Lingyang Song, and Zhu Han, "Popular Content Distribution in CR-VANETs with Sensing-Throughput Tradeoff," *First IEEE International Conference on Communications in China (ICCC)*, Beijing, China, August 2012.

372. Y. C. Shiu, J. S. H. Tsai, S. M. Guo, L. S. Shieh, and Z. Han, "Fault-Tolerant Tracker For Interconnected Large-Scale Nonlinear Systems With Input Constraint," *4th International Interdisciplinary Chaos Symposium on Chaos and Complex Systems*, Antalya, Turkey, May 2012.

373. Francois Meriaux, Samir M. Perlaza, Samson Lasaulce, Zhu Han, and Vincent Poor, "On the Achievability of Efficient Satisfaction Equilibria in Self-Configuring Networks," *3rd International Conference on Game Theory for Networks (Gamenets)*, Vancouver, Canada, May 2012.

374. Zhou Yuan, Ju Bin Song, and Zhu Han, "Network Formation Game for Interference Minimization Routing in Cognitive Radio Mesh Networks," invited, *3rd International Conference on Game Theory for Networks (Gamenets)*, Vancouver, Canada, May 2012.

375. Quanyan Zhu, Zhu Han, and Tamer Basar, "A Differential Game Approach to Distributed Demand Side Management in Smart Grid," *IEEE International Conference on Communications*, Ottawa, Canada, June 2012.

376. Siavash Bayat, Raymond Hall Yip Louie, Zhu Han, Yonghui Li, and Branka Vucetic, "Multiple Operator and Multiple Femtocell Networks: Distributed Stable Matching," *IEEE International Conference on Communications*, Ottawa, Canada, June 2012.

377. Muhammad Ejaz Ahmed, Ju Bin Song, Nam Tuan Nguyem, and Zhu Han, "Non-parametric Bayesian Identification of Primary Users' Payloads in Cognitive Radio Networks," *IEEE International Conference on Communications*, Ottawa, Canada, June 2012.

378. Lanchao Liu, Husheng Li, and Zhu Han, "Sampling Spectrum Occupancy Data over Random Fields: A Matrix Completion Approach," *IEEE International Conference on Communications*, Ottawa, Canada, June 2012.

379. Tianyu Wang, Lingyang Song, Zhu Han, Xiang Cheng, and Bingli Jiao, "Power Allocation using Vickrey Auction and Sequential First-Price Auction Games for Physical Layer Security in Cognitive Relay Networks," *IEEE International Conference on Communications*, Ottawa, Canada, June 2012.

380. Chen Xu, Lingyang Song, Zhu Han, Qun Zhao, Xiaoli Wang, and Bingli Jiao, "Interference-Aware Resource Allocation for Device-to-Device Communications as an Underlay Using Sequential Second Price Auction," *IEEE International Conference on Communications*, Ottawa, Canada, June 2012.

381. Mohammad Esmalifalak, Zhu Han, and Lingyang Song, "Effect Of Stealthy Bad Data Injection On Network Congestion In Market Based Power System," *IEEE Wireless Communications and Networking Conference*, Paris, France, April 2012, (**Best Paper Award**).

382. Siavash Bayat, Raymond Hall Yip Louie, Zhu Han, Yonghui Li, and Branka Vucetic, "Distributed Stable Matching Algorithm for Physical Layer Security with Multiple Source-Destination Pairs and Jammer Nodes," *IEEE Wireless Communications and Networking Conference*, Paris, France, April 2012.

383. Dusit Niyato, Ping Wang, Ekram Hossain, Walid Saad, and Zhu Han, "Game Theoretic Modeling of Cooperation among Service Providers in Mobile Cloud Computing Environments," *IEEE Wireless Communications and Networking Conference*, Paris, France, April 2012, (**Best Paper Award**).

384. Yifan Li, Rakpong Kaewpuang, Ping Wang, Dusit Niyato and Zhu Han, "An Energy Efficient Solution: Integrating Plug-In Hybrid Electric Vehicle in Smart Grid with Renewable Energy," *IEEE INFOCOM Workshop on Green Networking and Smart Grids*, March 2012.

385. Hannan Ma, Husheng Li, and Zhu Han, "A Framework of Frequency Oscillation in Power Grid: Epidemic Propagation over Social Networks," *IEEE INFOCOM Workshop on Green Networking and Smart Grids*, March 2012.

386. Hung Khanh Nguyen, Ju Bin Song, and Zhu Han, "Demand Side Management to Reduce Peak-to- Average Ratio using Game Theory in Smart Grid," *IEEE INFOCOM Workshop on Green Networking and Smart Grids*, March 2012.

387. Husheng Li and Zhu Han, "Distributed Scheduling of Wireless Communications for Voltage Control in Micro Smart Grid", SG-COMNETs workshop in *IEEE Globe Communication Conference (Globecom)*, Houston, TX, December 2011.

388. Husheng Li and Zhu Han, "Manipulating the Electricity Power Market via Jamming the Price Signaling in Smart Grid," SG-COMNETs workshop in *IEEE Globe Communication Conference (Globecom)*, Houston, TX, December 2011.

389. Jingchao Chen, Lingyang Song, Zhu Han, and Bingli Jiao, "Joint Relay and Jammer Selection for Secure Decode-and-Forward Two-Way Relay Communications," *IEEE Globe Communication Conference (Globecom)*, Houston, TX, December 2011.

390. Lanchao Liu, Zhu Han, Zhiqiang Wu, and Lijun Qian, "Collaborative Compressive Sensing based Dynamic Spectrum Sensing and Mobile Primary User Localization in Cognitive Radio Networks," *IEEE Globe Communication Conference (Globecom)*, Houston, TX, December 2011.

391. Huy Nquyen, Nam Nguyen, Guanbo Zheng, Zhu Han, and Rong Zheng, "Binary Blind Identification of Wireless Transmission Technologies for Wide-band Spectrum Monitoring," *IEEE Globe Communication Conference (Globecom)*, Houston, TX, December 2011.

392. Xue Li, Steven Hong, Zhu Han, and Zhiqiang Wu, "Bayesian Compressed Sensing Based Dynamic Joint Spectrum Sensing and Primary User Localization for Dynamic Spectrum Access," *IEEE Globe Communication Conference (Globecom)*, Houston, TX, December 2011.

393. Husheng Li, Zhu Han, and Zhenghao Zhang, "Communication over Random Fields: A Statistical Framework for Cognitive Radio Networks," *IEEE Globe Communication Conference (Globecom)*, Houston, TX, December 2011.

394. Tianyu Wang, Lingyang Song, Zhu Han, Zhongshan Zhang, and Bingli Jiao, "A Feedback Rate Control Game using Sequential Second Price Auction for Channel State Information and Intercell Interference in Wireless Networks," invited, *2011 International Conference on Wireless Communications & Signal Processing: WCSP*, November 2011.

395. Quanyan Zhu, Walid Saad, Zhu Han, H. Vincent Poor, and Tamer Basar, "Eavesdropping and Jamming in Next-Generation Wireless Networks: a Game Theoretic Approach," *the 2011 IEEE Military Communications Conference*, November 2011.

396. Mohammad Esmalifalak, Huy Nguyen, Rong Zheng, and Zhu Han, "Stealth False Data Injection using Independent Component Analysis in Smart Grid," *IEEE International Conference on Smart Grid Communications, Smartgridcomm*, October 2011.

397. Walid Saad, Zhu Han, H. Vincent Poor, and Tamer Basar, "A Noncooperative Game for Double Auction-Based Energy Trading between PHEVs and Distribution Grids," *IEEE International Conference on Smart Grid Communications, Smartgridcomm*, October 2011.

398. Husheng Li, Zhu Han, Lifeng Lai, Robert Caiming Qiu, and Depeng Yang, "Efficient and Reliable Multiple Access for Advanced Metering in Future Smart Grid," *IEEE International Conference on Smart Grid Communications, Smartgridcomm*, October 2011.

399. Husheng Li and Zhu Han, "Synchronization of Power Networks Without and With Communication Infrastructures," *IEEE International Conference on Smart Grid Communications, Smartgridcomm*, October 2011.

400. Manav Bhatnagar, Ankur Bansal, Are Hjorungnes, and Zhu Han, "Maximum-Likelihood Decoding in Decode-and-Forward Based MIMO Cooperative Communication Systems," *the 45th Asilomar Conference on Signals, Systems and Computers*, October 2011.

401. Lei Jiang, Zhu Han, Maria-Angeles Vazquez-Castro, and Are Hjørungnes, "Multi-beam SATCOM Systems Design with Physical Layer Security," invited, *2011 IEEE International Conference on Ultra-Wideband*, September 2011.

402. Rongqing Zhang, Lingyang Song, Zhu Han, Zhongshan Zhang, and Bingli Jiao, "Joint subcarrier and power allocation for multiuser OFDM systems using distributed auction game," *the 6th international conference on Wireless algorithms, systems, and applications,* Chengdu, China, August, 2011.

403. Tianyu Wang, Rongqing Zhang, Lingyang Song, Zhu Han, Haopeng Li, and Bingli Jiao, "Power Allocation for Two-Way Relay System Based on Sequential Second Price Auction," invited, *The Third International Conference on Ubiquitous and Future Networks*, June 2011.

404. Walid Saad, Zhu Han, and H. Vincent Poor, "Coalitional Game Theory for Cooperative Micro-Grid Distribution Networks," *IEEE International Conference on Communications*, Workshop on Smart Grid Communications, Kyoto, Japan, June 2011.

405. Jia Meng, Yingying Li, Nam Nguyen, Wotao Yin, and Zhu Han, "High Resolution OFDM Channel Estimation with Low Speed ADC using Compressive Sensing," *IEEE International Conference on Communications*, Kyoto, Japan, June 2011.

406. Lingyang Song, Zhu Han, Qihao Li, and Bingli Jiao, "Feedback Control Game for Channel State Information in Wireless Networks," *IEEE International Conference on Communications*, Kyoto, Japan, June 2011.

407. Jingchao Chen, Rongqing Zhang, Lingyang Song, Zhu Han, and Bingli Jiao, "Joint Relay and Jammer Selection for Secure Two-way Relay Networks," *IEEE International Conference on Communications*, Kyoto, Japan, June 2011.

408. Rongqing Zhang, Lingyang Song, Zhu Han, and Bingli Jiao, "Distributed Coalition Formation of Relay and Friendly Jammers for Secure Cooperative Networks," *IEEE International Conference on Communications*, Kyoto, Japan, June 2011.

409. Rongqing Zhang, Lingyang Song, Zhu Han, and Bingli Jiao, "Relay and Jammer Cooperation as a Coalitional Game in Secure Cooperative Wireless Networks," invited, *1st International ICST Workshop on Secure Wireless Networks (SECURENETS)*, May 2011.

410. Yingying Li, Zhu Han, Wei-Chuan Shih and Wotao Yin, "Oil spill sensor using multispectral infrared imaging via l1 minimization," *IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, Prague, Czech Republic, May 2011.

411. Tianyu Wang, Lingyang Song, Zhu Han, and Bingli Jiao, "Improve Secure Communications in Cognitive Two-Way Relay Networks using Sequential Second Price Auction," *Fifth IEEE International Symposium on New Frontiers in Dynamic Spectrum Access Networks 2010 (DySPAN 2011)*, Aachen, Germany, May 2011.

412. Walid Saad, Zhu Han, and H. Vincent Poor, "A Game Theoretic Approach for Multi-hop Power Line Communications," invited, *2nd International ICST Conference on Game Theory for Networks (Gamenet)*, Shanghai, China, April 2011.

413. Shuhang Liu, Rongqing Zhang, Lingyang Song, Zhu Han, and Bingli Jiao, "Enforce Truth-Telling in Wireless Relay Networks for Secure Communication," *IEEE International Workshop on Security in Computers, Networking and Communications (SCNC)*, INFOCOM Workshop, Shanghai, China, April 2011.

414. Rongqing Zhang, Lingyang Song, Zhu Han, and Bingli Jiao, "Improve Physical Layer Security in Cooperative Wireless Network using Distributed Auction Games," *the 2011 International Workshop on Cognitive and Cognitive and Cooperative Networks*, INFOCOM Workshop, Shanghai, China, April 2011.

415. Nam Tuan Nguyen, Guanbo Zheng, Zhu Han and Rong Zheng, "Device Fingerprinting to Enhance Wireless Security using Nonparametric Bayesian Method," *IEEE Annual IEEE Conference on Computer Communications INFOCOM*, Shanghai, China, April 2011.

416. Wotao Yin, Zaiwen Wen, Shuyi Li, Jia (Jasmine) Meng, and Zhu Han, "Dynamic Compressive Spectrum Sensing for Cognitive Radio Networks," *the 45th Annual Conference on Information Sciences and Systems (CISS)*, Baltimore, MD, March 2011.

417. Yi Huang, Husheng Li, Kristy A. Campbell, and Zhu Han, "Defending False Data Injection Attack On Smart Grid Network Using Adaptive CUSUM Test," *the 45th Annual Conference on Information Sciences and Systems (CISS)*, Baltimore, MD, March 2011.

418. Zhou Yuan, Dusit Niyato, Husheng Li, and Zhu Han, "Defense Against Primary User Emulation Attacks Using Belief Propagation of Location Information in Cognitive Radio Networks," *IEEE Wireless Communications and Networking Conference*, Cancun, Mexico, March 2011.

419. Dusit Niyato, Ping Wang, Walid Saad, Zhu Han, and Are Hjorungnes, "Coalition Formation Games for Relay Transmission: Stability Analysis under Uncertainty," *IEEE Wireless Communications and Networking Conference*, Cancun, Mexico, March 2011.

420. Fabian Rozario, Zhu Han, and Dusit Niyato, "Optimization of Non-cooperative P2P Network from the Game Theory Point of View," *IEEE Wireless Communications and Networking Conference*, Cancun, Mexico, March 2011.

421. Dusit Niyato, Ping Wang, Zhu Han, and Ekram Hossain, "Impact of Packet Loss on Power Demand Estimation and Power Supply Cost," *IEEE Wireless Communications and Networking Conference*, Cancun, Mexico, March 2011.

422. Wenkai Wang, Yan Sun, Husheng Li, and Zhu Han, "Cross-layer Attack and Defense in Cognitive Radio Networks," *IEEE Globe Communication Conference (Globecom)*, Miami, FL, Nov.-Dec. 2010.

423. Walid Saad, Zhu Han, Tamer Basar, Merouane Debbah, and Are Hjorungnes, "A Coalition Formation Game in Partition Form for Peer-to-Peer File Sharing Networks," *IEEE Globe Communication Conference (Globecom)*, Miami, FL, Nov.-Dec. 2010.

424. Rongqing Zhang, Lingyang Song, Zhu Han, Bingli Jiao, and Merouane Debbah, "Physical Layer Security for Two Way Relay Communications with Friendly Jammers," *IEEE Globe Communication Conference (Globecom)*, Miami, FL, Nov.-Dec. 2010.

425. Dusit Niyato, Zhu Han, Walid Saad, and Are Hjorungnes, "A Controlled Coalitional Game for Wireless Connection Sharing and Bandwidth Allocation in Mobile Social Networks," *IEEE Globe Communication Conference (Globecom)*, Miami, FL, Nov.-Dec. 2010.

426. Quanyan Zhu, Zhou Yuan, Ju Bin Song, Zhu Han, and Tamer Basar, "Dynamic Interference Minimization Routing Game for On-Demand Cognitive Pilot Channel," *IEEE Globe Communication Conference (Globecom)*, Miami, FL, Nov.-Dec. 2010.

427. Behrouz Maham, Walid Saad, Merouane Debbah, Zhu Han, and Are Hjørungne, "Efficient Cooperative Protocols for General Outage-Limited Multihop Wireless Networks," invited, in proceeding of *the 21st Annual IEEE International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC)*, Istanbul, Turkey, September 2010.

428. Behrouz Maham, Are Hjørungne, and Zhu Han, "Multihop transmission with interference using spatial reused space-time coded cooperative-routing," *5th Advanced satellite multimedia systems conference (asma) and the 11th signal processing for space communications workshop (spsc)*, September 2010.

429. Dan Xu, Xin Liu, and Zhu Han, "A Two-Tier Market for Decentralized Dynamic Spectrum Access in Cognitive Radio Networks," *Seventh Annual IEEE Communications Society Conference on Sensor, Mesh, and Ad Hoc Communications and Networks (SECON)*, Boston, MA, June 2010.

430. Zhifeng Luo, Zhu Han, Albert K. Wong, and Shuisheng Qiu, "Relay-Assisted Partial Packet Recovery with IDMA Method in CDMA Wireless Network," *the 6th International Wireless Communications and Mobile Computing Conference (IWCMC)*, Caen, France, Jun.-Jul. 2010.

431. Rajatha Raghavendra, Hao Zou, Mohamad Charafeddine, Zhu Han, and John M. Cioffi, "Low Complexity Multi-user Rate Region Maximization for Frequency-Selective Interference Channel," invited, *the 6th International Wireless Communications and Mobile Computing Conference (IWCMC)*, Caen, France, Jun.-Jul. 2010.

432. Husheng Li and Zhu Han, "Queuing Analysis of Dynamic Spectrum Access Subject to Interruptions from Primary Users," *the 5th International Conference on Cognitive Radio Oriented Wireless Networks and Communications (Crowncom)*, Cannes, France, June 2010.

433. Huy Nguyen, Rong Zheng, and Zhu Han, "Binary is Good: A Binary Inference Framework for Primary User Separation in Cognitive Radio Networks," invited, *the 5th International Conference on Cognitive Radio Oriented Wireless Networks and Communications (Crowncom)*, Cannes, France, June 2010.

434. Husheng Li and Zhu Han, "Blind Dogfight in Spectrum: Combating Primary User Emulation Attacks in Cognitive Radio Systems with Unknown Channel Statistics,"

IEEE International Conference on Communications, Capetown, South Africa, May 2010.

435. Dapeng Li, Jing Liu, Youyun Xu, Xinbing Wang, and Zhu Han, "A Market Game for Dynamic Multi-Band Sharing in Cognitive Radio Networks," *IEEE International Conference on Communications*, Capetown, South Africa, May 2010.

436. Quanyan Zhu, Husheng Li, Zhu Han, and Tamer Basar, "A Stochastic Game Model for Jamming in Multi-channel Cognitive Radio Systems," *IEEE International Conference on Communications*, Capetown, South Africa, May 2010.

437. Quanyan Zhu, Zhu Han, and Tamer Basar, "No-Regret Learning in Collaborative Spectrum Sensing with Malicious Nodes," *IEEE International Conference on Communications*, Capetown, South Africa, May 2010.

438. Husheng Li and Zhu Han, "Catching Attacker(s) for Collaborative Spectrum Sensing in Cognitive Radio Systems: An Abnormality Detection Approach," *Fourth IEEE International Symposium on New Frontiers in Dynamic Spectrum Access Networks 2010 (DySPAN 2010)*, Singapore, Apr. 2010.

439. Husheng Li and Zhu Han, "Competitive Spectrum Access in Cognitive Radio Networks: Graphical Game and Learning," *IEEE Wireless Communications and Networking Conference*, Sydney, Australia, Apr. 2010.

440. Song Gao, Lijun Qian, Dhadesugoor. R. Vaman, and Zhu Han, "Distributed Cognitive Sensing for Time Varying Channels: Exploration and Exploitation," *IEEE Wireless Communications and Networking Conference*, Sydney, Australia, Apr. 2010.

441. Zhou Yuan, Ju Bin Song, and Zhu Han, "Interference Minimization Routing and Scheduling in Cognitive Radio Wireless Mesh Networks," *IEEE Wireless Communications and Networking Conference*, Sydney, Australia, Apr. 2010.

442. Husheng Li and Zhu Han, "Collaborative Spectrum Sensing with A Stranger: Trust, or Not to Trust?," *IEEE Wireless Communications and Networking Conference*, Sydney, Australia, Apr. 2010.

443. Walid Saad, Zhu Han, Tamer Basar, Are Hjørungnes, and Ju Bin Song, "Hedonic Coalition Formation Games for Secondary Base Station Cooperation in Cognitive Radio Networks," *IEEE Wireless Communications and Networking Conference*, Sydney, Australia, Apr. 2010.

444. Wei Zhang and Zhu Han, "Opportunistic Feedback in Collaborative Spectrum Sensing for Cognitive Radio," *IEEE Wireless Communications and Networking Conference*, Sydney, Australia, Apr. 2010.

445. Jia Meng, Wotao Yin, Husheng Li, Ekram Houssain, and Zhu Han, "Collaborative Spectrum Sensing from Sparse Observations Using Matrix Completion for Cognitive Radio Networks," *IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, Dallas, TX, Mar. 2010.

446. Zhu Han, Ninoslav Marina, Mérouane Debbah, and Are Hjørungnes, "Improved Wireless Secrecy Rate using Distributed Auction Theory," *The 6th International Conference on Mobile Ad-hoc and Sensor Networks*, Wuyishang, China, Dec. 2009.

447. Walid Saad, Zhu Han, Tamer Basar and Are Hjørungnes, "Network Formation Games for Wireless Multi-hop Networks in the Presence of Eavesdroppers," invited

paper, *Third International Workshop on Computational Advances in Multi-Sensor Adaptive Processing (CAMSAP09)*, Aruba, Dec. 2009.

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HOBBY

- North Pole Marathon, April 2012, the reason why the Chinese national flag waving first time in this event.
- First Chinese to Finish Seven Marathons in Seven Continents. First Chinese in Grand Slam Marathon Club (7 Continent Marathons plus North Pole Marathon).
- Half Ironman, swim (1.9 km), bike (90 km), run (22.1 km), April 2016.
- North American Chinese Soccer Tournament, Grand National Champion, New Brunswick, New Jersey, May 1999. Member of Team Maryland Hunter.
- North American Chinese Soccer Tournament, South Champion, San Antonio, May 2018. Member of Team Tang Dynasty.
- 67 Countries Visited. Highest Point: Summit of Kilimanjaro, 5895m. Lowest Point: Dead Sea, -417m. North Most Point: North Pole, 90º0'0"N. South Most Point: Southern Ellsworth Mountains at Union Glacier, Antarctica, 79º46'.