

**HAROLD VINCENT POOR**

**CONTACT INFORMATION:**

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**EDUCATION:**

*Princeton University, Princeton, New Jersey*

Ph.D. in Electrical Engineering and Computer Science, 1977  
M.A. in Electrical Engineering, 1976

*Auburn University, Auburn, Alabama*

M.S. in Electrical Engineering, 1974  
B.E.E. with Highest Honor, 1972

**EMPLOYMENT AND EXPERIENCE:**

**Principal Employment**

*Princeton University*

Michael Henry Strater University Professor of Electrical Engineering, 2005 - present  
Professor of Electrical Engineering, 1990 - present  
Participating Faculty, Center for Statistics and Machine Learning, 2014 - present  
Associated Faculty, Andlinger Center for Energy and the Environment, 2012 - present  
Associated Faculty, Princeton Environmental Institute, 2006 - present  
Associated Faculty, Department of Operations Research & Financial Eng'g, 2001 - present  
Associated Faculty, Program in Applied and Computational Mathematics, 1996 - present  
Dean, School of Engineering and Applied Science, 2006-16  
Founding Director, (Keller) Center for Innovation in Engineering Education, 2005-06  
George Van Ness Lothrop Professor in Engineering, 2003-05

*University of Illinois at Urbana-Champaign*

Beckman Associate, Center for Advanced Study, 1989-90  
Professor, Beckman Institute for Advanced Science and Technology, 1988-90  
Professor of Electrical and Computer Engineering, 1984-90  
Research Professor in the Coordinated Science Laboratory, 1984-90  
Assistant, then Associate, Professor of Electrical Engineering, 1977-84  
Research Assistant, then Research Associate, Professor in the Coordinated Science Lab, 1977-84

**Visiting Positions**

*Imperial College London*

Visiting Professor, Electrical and Electronic Engineering, 2004 - present  
Royal Academy Distinguished Visiting Fellow, Electrical and Electronic Engineering, Fall 2012  
Academic Visitor, Mathematics, Fall 2003  
Senior Visiting Fellow, Centre for Process Systems Engineering, Fall 1993  
Academic Visitor, Electrical Engineering, Fall 1985

*Other Visiting Positions (Past Fifteen Years)*

Adjunct Professor, Institute for Computing Techn., Chinese Academy of Sciences, 2016 - present  
Distinguished Chair Professor for Research, National Taiwan University, 2014 - present  
Miller Visiting Research Professor, University of California, Berkeley, Spring 2017  
Visiting Scholar, Isaac Newton Inst. for Mathematical Sciences, Cambridge Univ., Fall 2016  
Visiting Professor, Electrical Engineering, Stanford University, Winters 2004 & 2013  
Welling "Occasional" Professor, George Washington University, 2009-11  
Visiting Scholar, Engineering and Applied Sciences, Harvard University, Spring 2004

## RECOGNITION:

### Election to National and International Academies

Foreign Member, Chinese Academy of Sciences (elected 2017)  
Honorary Member, National Academy of Sciences, Republic of Korea (elected 2017)  
Foreign Member, National Academy of Engineering of Korea (elected 2017)  
Fellow, National Academy of Inventors (U.S.) (elected 2015)  
Fellow, The World Academy of Sciences (elected 2015)  
Foreign Member, The Royal Society (U.K.) (elected 2014)  
Foreign Member, Academia Europaea (elected 2013)  
Corresponding Fellow, Royal Society of Edinburgh (elected 2013)  
Member, National Academy of Sciences (U.S.) (elected 2011)  
International Fellow, Royal Academy of Engineering (U.K.) (elected 2009)  
Fellow, American Academy of Arts & Sciences (elected 2005)  
Member, National Academy of Engineering (U.S.) (elected 2001)

### Fellowships in Learned Societies

Fellow, International Union of Radio Science (URSI) (elected 2017)  
Fellow, Institution of Engineering and Technology (IET) (elected 2012)  
Fellow, American Society for Engineering Education (ASEE) (elected 2003)  
Fellow, Optical Society of America (elected 2001)  
Fellow, Institute of Mathematical Statistics (elected 2001)  
Fellow, Acoustical Society of America (elected 1992)  
Fellow, American Association for the Advancement of Science (elected 1991)  
Fellow, Institute of Electrical and Electronics Engineers (IEEE) (elected 1987)

### Honorary Degrees & Professorships

Doctor of Engineering, *honoris causa*, University of Waterloo (to be awarded in June 2018)  
Doctor of Science *honoris causa*, Syracuse University (2017)  
Honorary Professor, Peking University (elected 2016)  
Honorary Professor, Tsinghua University (elected 2016)  
Doctor of Science in Technology *honoris causa*, Aalto University (2014)  
Doctor of Engineering *honoris causa*, HKUST (2012)  
*Doctorem Technices honoris causa*, Aalborg University (2012)  
Doctor of Science *honoris causa*, University of Edinburgh (2011)

### Selected Recognition of Research & Technical Contributions

Alexander Graham Bell Medal, IEEE (2017)  
John Fritz Medal, American Association of Engineering Societies (2016)  
Booker Gold Medal, URSI (2014)  
Eric E. Sumner Award, IEEE (2011)  
Society Award, IEEE Signal Processing Society (2011)  
Ambrose Fleming Medal for Achievement in Communications, IET (2010)  
Edwin Howard Armstrong Achievement Award, IEEE Communications Society (2009)  
Fellow, John Simon Guggenheim Memorial Foundation (selected 2002)

### Selected Recognition for Teaching & Mentoring

Outstanding Mentorship Award, IEEE Women in Communications Engineering (2015)  
Athanasios Papoulis Award, European Association for Signal Processing (2015)  
James H. Mulligan, Jr., Education Medal, IEEE (2005)  
William E. Sayle Award for Achievement in Education, IEEE Education Society (2005)  
Major Educational Innovation Award, IEEE Education Activities Board (2004)  
Distinguished Teacher Award, Princeton School of Engineering & Applied Science (2003)  
Director's Award for Distinguished Teaching Scholars, National Science Foundation (2002)  
Leon K. Kirchmayer Graduate Teaching Award, IEEE (2001)  
Frederick Emmons Terman Award, ASEE (1992)

### **Paper Awards (Journals)**

Best Paper Award, Ministry of Science and ICT of Korea (1st prize) (2017)  
Best Paper Award, German Information Technology Society (ITG-Preis) (2016)  
Best Paper Award, *EURASIP J. Wireless Communications & Networking* (2014)  
Best Paper Award, *EMO Bilmisel Dergi* (2013)  
IEEE Information Theory Paper Award (2011)  
Best Paper Award, *EURASIP J. Wireless Communications & Networking* (2009)  
IEEE Marconi Prize Paper Award in Wireless Communications (2007)  
Best Paper Award, *EURASIP J. Wireless Communications & Networking* (2006)  
Joint Paper Award, IEEE Communications and Information Theory Societies (2000)

### **Paper Awards (Conferences - Past Ten Years)**

IEEE International Conference on Communications (Paris, 2017)  
International Conference on Digital Signal Processing (London, 2017)  
IEEE Int'l Workshop on Security and Privacy in Big Data, INFOCOM (San Francisco, 2016)  
IEEE Global Communications Conference (San Diego, 2015)  
IEEE Power & Energy Society General Meeting (Denver, 2015)  
IEEE Int'l Conference on Advanced Technologies for Communications (Hochiminh City, 2013)  
IEEE Power & Energy Society General Meeting (Vancouver, 2013)  
IEEE International Conference on Communications (Budapest, 2013)  
IEEE Wireless Communications & Networking Conference (Shanghai, 2013)  
IEEE Global Communications Conference (Houston, 2011)  
IEEE Symposium on Personal, Indoor & Mobile Radio Communications (Tokyo, 2009)  
IEEE International Conference on Communications (Beijing, 2008)  
IEEE Global Communications Conference (New Orleans, 2008)

### **Named Lectures**

Chien Lecture, University of Illinois at Urbana-Champaign (2017)  
Viterbi Lecture, University of Southern California (2015)  
Nunan Lecture, Syracuse University (2015)  
Mercer Lecture, Rensselaer Polytechnic Institute (2015)  
Armstrong Lecture, Columbia University (2010)  
Welling Lectures, George Washington University (2010)  
Descartes Lecture, University of Ulm (2008)  
(Inaugural) Lytle Lectures, University of Washington (2008)  
Jury Lecture, University of Miami (2006)  
Nokia Lectures, University of Oulu & Helsinki University of Technology (2006)  
Edison Lecture, University of Notre Dame (2005)  
President's Lecture, Princeton University (2003)  
Mong Lecture, Hong Kong University (1997)

### **Selected Other Awards & Recognition**

Global Fellowship, Peking University (2017)  
President's International Fellow (Distinguished Scientist), Chinese Academy of Sciences (2015)  
State of Alabama Engineering Hall of Fame (inducted 2014)  
Aaron D. Wyner Distinguished Service Award, IEEE Information Theory Society (2008)  
Eminent Member, Eta Kappa Nu (elected 2008)  
Distinguished Alumnus Award, Tau Beta Pi (2005)  
IEEE Third Millennium Medal (2000)  
Member, Cosmos Club, Washington, DC (elected 1997)  
Distinguished Member Award, IEEE Control Systems Society (1994)

## OTHER PROFESSIONAL ACTIVITIES:

### Principal Institutional Leadership

Board of Directors, Hyster-Yale Materials Handling, Inc., 2017 - present  
Board of Directors, Hyster-Yale Group, Inc., 2017 - present  
Board of Managers, Nuvera Fuel Cells, LLC, 2017 - present  
Board of Managers, Bolzoni Holdings, LLC, 2017 - present  
Board of Managers, Swarthmore College, 2016 - present  
Board of Directors, IEEE Foundation, 2015 - present (Vice Pres., Development, 2017 - present)  
Council, National Academy of Engineering, 2014 - present (Executive Cmte., 2015 - present)  
Board of Directors, Corporation for National Research Initiatives, 2012 - present  
Council, American Association for the Advancement of Science, 2012-13  
Governor at Large, IEEE - Eta Kappa Nu, 2011-13  
Chair, Engineering Section, American Association for the Advancement of Science, 2011-12  
Chair, Electronics Section, National Academy of Engineering, 2007-09  
Editor-in-Chief, *IEEE Transactions on Information Theory*, 2004-07  
Board of Directors, IEEE, 1991-92  
President, IEEE Information Theory Society, 1990

### Selected Other IEEE Activities (Past Five Years)

Communications Society Nominations and Elections Committee, 2016 - present  
Awards and Recognition Committee, Technical Activities Board, 2016 - present  
Information Theory Society Board of Governors, 1984-92, 1999-2007 & 2015 - present  
Signal Processing Society Awards Board (Chair, 2017)  
Fourier Award for Signal Processing Committee, 2013-15  
Kiyo Tomiyasu Award Committee, 2009-15 (Chair, 2012-14)  
Distinguished Lecturer, Information Theory Society, 2013-14  
Medal of Honor Committee, 2011-14  
Founders Medal Committee, 2010-13

### Editorial Activities - Regular (Past Ten Years)

Founding Co-Editor-in-Chief, *IET Smart Grid*, 2018 - present  
Editorial Advisory Board, *IEEE Spectrum*, 2017 - present  
Editorial Board, *Proceedings of the IEEE*, 2016 - present  
Advisory Board, *Journal of Communications and Networks*, 2016 - present  
Editorial Board, *Philosophical Transactions of the Royal Society A*, 2015 - present  
Advisory Board, *PeerJ Computer Science*, 2015 - present  
Advisory Board, *IEEE Internet of Things Journal*, 2015 - present  
Steering Committee, *IEEE Transactions on Computational Social Systems*, 2014 - present  
Editorial Board, *Foundations and Trends in Signal Processing*, 2013 - present  
Senior Editor, *IEEE Journal of Selected Topics in Signal Processing*, 2013 - present  
Editor-at-Large, *IEEE Wireless Communications Letters*, 2012 - present  
Steering Board, *Journal of Cyber Security and Mobility*, 2012 - present  
Advisory Board, *Advanced Texts in Communications and Networks* (Wiley), 2008 - present  
Editorial Board, *Foundations and Trends in Commun. & Information Theory*, 2003 - present  
Editorial Board, *ECTI Trans. Electronics and Communications* (Thailand), 2002 - present  
Editorial Advisory Board, *Series on Systems and Control* (Birkhauser), 2001 - present  
Advisory Board, *Security and Communication Networks* (Wiley), 2009-16  
Editor-in-Chief, *Journal of Communications and Networks*, 2011-15  
Executive Editorial Board, *IEEE Transactions on Information Theory*, 2013-14  
Advisory Board, *Journal of Engineering Education*, 2010-14  
Editorial Board, *IEEE Wireless Communications*, 2011-13  
Editorial Board, *IEEE Signal Processing Magazine*, 2010-13  
Overview Editorial Board, *IEEE Transactions on Signal Processing*, 2009-12

Consulting Editor, *IEEE Communications Letters*, 1998-2009  
Senior Editor, *IEEE Journal of Selected Topics in Signal Processing*, 2006-08  
Editorial Board, *IEEE Signal Processing Magazine*, 2006-08

### Editorial Activities - Guest Editing (Past Ten Years)

- Guest Co-Editor (with Bruno Clerckx, Rui Zhang, Robert Schober, Derrick Wing Kwan Ng and Dong In Kim). *IEEE Journal on Selected Areas in Communications - Issue on Wireless Transmission of Information and Power*, under development for publication in 2018.
- Guest Co-Editor (with Maria Sabrina Greco, Silviija Kokalj-Filipovic and George Stantchev). *IEEE Journal on Selected Topics in Signal Processing - Machine Learning for Cognition in Radio Communications and Radar*, under development for publication in 2018.
- Guest Co-Editor (with Stefano Buzzi, Chih-Lin I, Thierry E. Klein, Chenyang Yang and Alessio Zappone). *IEEE Journal on Selected Areas in Communications - Energy-Efficient Techniques for 5G Wireless Communication Systems*. (Vol. 34, No. 4, 2016)
- Guest Co-Editor (with Walid Saad, Xiangyun Zhou and Mérouane Debbah). *IEEE Communications Magazine - Wireless Physical Layer Security - Parts I & II*. (Vol. 53, Nos. 6 & 12, 2015)
- Guest Co-Editor (with Mugen Peng, Tony Q. S. Quek, Zhiguo Ding and Vincent Lau). *IEEE Wireless Communications - Heterogeneous Cloud Radio Access Networks*. (Vol. 22, No. 3, 2015)
- Guest Co-editor (with Kwang-Cheng Chen, Vikram Krishnamurthy, Devavrat Shah and Patrick Wolfe). *IEEE Journal of Selected Topics in Signal Processing - Signal Processing for Social Networks* (Vol. 8, No. 4, 2014).
- Guest Co-editor (with Kwang-Cheng Chen and Ramjee Prasad). *IEEE Wireless Communications - Mobile Social Networks* (Vol. 21, No. 1, 2014)
- Guest Co-editor (with Eduard Jorswieck, Lifeng Lai, Wing-Kin (Ken) Ma, Walid Saad and A. Lee Swindlehurst). *IEEE Journal on Selected Areas in Communications - Signal Processing Techniques for Wireless Physical Layer Security* (Vol. 31, No. 9, 2013)
- Guest Co-editor (with Mérouane Debbah, Kannan Ramchandran, Lalitha Sankar and Wade Trappe). *IEEE Signal Processing Magazine - Signal Processing for Cyber-Security and Privacy* (Vol. 30, No. 5, 2013)
- Guest Co-editor (with Pingzhi Fan, P. Takis Mathiopoulos and Erdal Panayırçı). *EURASIP Journal on Wireless Communications and Networking - Broadband Mobile Communications at Very High Speeds* (Vol. 2012)
- Guest Co-editor (with Stephen McLaughlin, Jacques Palicot and Honggang Zhang). *EURASIP J. Wireless Communications and Networking - Green Radio* (Vol. 2012)
- Guest Co-editor (with Eduard Jorswieck, Eric G. Larsson, Amir Leshem and Marco Luise). *IEEE Journal of Selected Topics in Signal Processing - Game Theory in Signal Processing* (Vol. 6, No. 2, 2012)
- Guest Co-editor (with Alireza Attar, Tamer Başar, Mérouane Debbah and Qing Zhao). *IEEE Journal on Selected Areas in Communications - Game Theory in Wireless Communications* (Vol. 30, No. 1, 2012)
- Guest Co-editor (with Wade Trappe, Aylin Yener, Hisato Iwai, Joao Barros and Paul Prucnal). *IEEE Transactions on Information Forensics and Security - Using the Physical Layer for Securing the Next Generation of Communication Systems* (Vol. 6, No. 3, 2011)
- Guest Co-editor (with Mérouane Debbah, Hesham El Gamal and Shlomo Shamai). *EURASIP Journal on Wireless Communications and Networking - Wireless Physical Layer Security* (Vol. 2009)
- Guest Co-editor (with Eduard Jorswieck, Erik Larsson and Marco Luise). *IEEE Signal Processing Magazine - Game Theory in Signal Processing and Communications* (Vol. 26, No. 5, 2009)

### **Organization of Technical Meetings - Leadership Roles (Past Ten Years)**

Management Board, International Conferences on Digital Signal Processing, 2013 - present  
General Co-chair, 3rd International Workshop on Non-Orthogonal Multiple Access Techniques for 5G, IEEE Conference on Communications, Kansas City, MO, May 20 - 24, 2018 (upcoming)  
Program Co-Director, 52<sup>nd</sup> Conference on Information Sciences and Systems, Princeton University, Princeton, NJ, March 21 - 23, 2018 (upcoming)  
General Co-chair, 2nd International Workshop on Non-Orthogonal Multiple Access Techniques for 5G, IEEE Global Communications Conference, Singapore, December 4 - 8, 2017  
Co-Organizer, 4th Workshop on Physical-layer Methods for Wireless Security, IEEE Conference on Communications and Network Security, Las Vegas, NV, October 9 - 11, 2017  
Co-Organizer, Workshop on Emerging Non-Orthogonal Multiple Access Techniques for 5G, IEEE Vehicular Technology Conference - Spring, Sydney, Australia, June 4 - 7, 2017  
General Co-Chair, 4th IEEE GLOBECOM Workshop on Trusted Communications with Physical Layer Security, IEEE Global Communications Conference, Washington, DC, December 2016  
Technical Chair, Symposium on Machine Learning for Characterization of Cognitive Communications and Radar, IEEE Global Conference on Signal and Information Processing, Washington, DC, December 2016  
Co-Organizer, Third Workshop on Physical-Layer Methods for Wireless Security, IEEE Conference on Communications and Network Security, Philadelphia, PA, October 2016  
General Co-Chair, 2016 IEEE International Conference on Digital Signal Processing, Beijing, China, October 2016  
Co-Organizer, Third Workshop on Trusted Communication with Physical Layer Security, IEEE Global Communications Conference, San Diego, CA, December 2015  
Co-Organizer, Second Workshop on Physical-layer Methods for Wireless Security, IEEE Conference on Communications and Network Security, Florence Italy, September 2015  
Co-Organizer, Second Workshop on Trusted Communications with Physical Layer Security, IEEE Global Communications Conference, Austin, TX, December 2014  
Co-Organizer, Second Princeton Workshop on Classical, Semi-classical and Quantum Noise, Princeton, NJ, March 2014  
General Co-Chair, Global Wireless Summit, comprising four conferences: the 16th International Symposium on Wireless Personal Multimedia Communications (WPMC), Wireless VITAE 2013, the 5th International Conference on Security and Privacy in Mobile Information and Communication Systems (MOBISEC), and the 2013 World Wide Security and Mobility Conference (WWSMC), Atlantic City, NJ, June 2013  
Technical Area Chair (Networks), 46th Asilomar Conference on Signals, Systems and Computers, Pacific Grove, CA, November 2012  
Co-Chair, "Smart Grid Cyber Security and Privacy" Symposium, Third IEEE Conference on Smart Grid Communications, Tainan, Taiwan, November 2012  
General Co-Chair, 9th International Symposium on Modeling and Optimization in Mobile, Ad Hoc and Wireless Networks (WiOpt11), Princeton, NJ, May 2011  
General Co-Chair, 2009 IEEE International Symposium on Information Theory, Seoul, Korea, June - July 2009

### **Organization of Technical Meetings - Other Roles (Past Five Years)**

Technical Program Committee, 2018 International Symposium on Information Theory and its Applications (ISITA2018), Singapore, October 28 - 31, 2018 (upcoming)  
Technical Program Committee, 26th European Signal Processing Conference (EUSIPCO), Rome, Italy, September 3 - 7, 2018 (upcoming)  
Steering Committee, IEEE 5G World Forum, Santa Clara, CA, July 8 -10, 2018 (upcoming)  
Technical Program Committee, 2018 IEEE Statistical Signal Processing Workshop, Freiberg, Germany, June 10 - 13, 2018 (upcoming)  
Steering Committee, 5th IEEE GLOBECOM Workshop on Trusted Communications with Physical Layer Security, IEEE Global Communications Conference, Singapore, December 4 - 8, 2017

Program Committee, International Conference on Digital Signal Processing, London, UK, August 23 - 25, 2017

Technical Program Committees, IEEE International Symposia on Information Theory: 2017 (Aachen), 2016 (Barcelona), 2015 (Hong Kong), 2013 (Istanbul), 2012 (MIT), 2007 (Nice), 2005 (Adelaide), 2004 (Chicago), 2002 (Lausanne), 2001 (Washington, DC), 2000 (Sorrento), 1998 (MIT), 1995 (Whistler), 1993 (San Antonio), 1990 (San Diego), 1988 (Kobe) and 1986 (Ann Arbor)

Co-Organizer, Special Session on “Physical Layer Security for 5G,” at the 17th IEEE International Workshop on Signal Processing Advances in Wireless Communications, Edinburgh, UK, July 3 - 6, 2016

Co-Chair, Steering Committee, International 5G Summit, Aalborg, Denmark, July 1, 2016

Co-Organizer, Special Session on “Statistical Signal Processing and Learning in Smart Grid,” at the 2016 IEEE Statistical Signal Processing Workshop, Palma de Mallorca, Spain, June 26 - 29, 2016

Co-Organizer, Special Session on “Physical Layer Security,” at the 7th IEEE International Workshop on Information Forensics and Security, Rome, Italy, November 16 - 19, 2015

Steering Committee, IEEE 5G Silicon Valley Summit, Google, Mountain View, CA, November 16, 2015

Steering Committee, IEEE 5G Toronto Summit, Toronto, ON, November 14, 2015

Technical Program Committee, 3rd International Workshop on Compressed Sensing Theory and its Applications to Radar, Sonar and Remote Sensing, Pisa, Italy, June 17 - 19, 2015

Steering Committee, First IEEE International 5G Summit, Princeton, NJ, May 26, 2015

Co-Organizer, Special Session on “Statistical Inference in Smart Grids,” for the 47th Asilomar Conference on Signals, Systems and Computers, Pacific Grove, CA, November 2 - 5, 2014

Technical Program Committee, International Symposium on Information Theory and Its Applications, Melbourne, Australia, October 26 - 29, 2014

Steering Committee, 19th International Conference on Digital Signal Processing, Hong Kong, August 20 - 23, 2014

Co-Organizer, Special Session on “Estimation in Cyber-Physical Energy Systems,” for the Eighth IEEE Sensor Array and Multichannel Signal Processing Workshop, A Corua, Spain, June 22 - 25, 2014

Co-Organizer, Special Session on “Security in Distributed and Cloud Storage Systems,” for the 6th International Symposium on Communications, Control, and Signal Processing, Athens, Greece, May 21 - 23, 2014

Technical Program Committee, 6th International Symposium on Communications, Control, and Signal Processing, Athens, Greece, May 21 - 23, 2014

Advisory Committee, Global Wireless Summit 2014, Aalborg, Denmark, May 11 - 14, 2014

Steering Committee, 3rd IEEE INFOCOM Workshop on Communications and Control for Smart Energy Systems, Toronto, Canada, April 27, 2014

Technical Program Committee, 2013 IEEE Global Communications Conference (Selected Areas in Communications Symposium on Game Theory for Communications), Atlanta, GA, December 9 - 13, 2013

Technical Program Committee, 2013 IEEE GlobalSIP Symposium on Information Processing over Networks, Austin, TX, December 3 - 5, 2013

Technical Program Committee, Symposium on Support for Storage, Renewable Resources and Micro-grids, in conjunction with the IEEE International Conference on Smart Grid Communications, Vancouver, Canada, October 21 - 24, 2013

International Advisory Committee, First IEEE Conference on Communications and Network Security, Washington, DC, October 14 - 16, 2013

Technical Program Committee, 2013 International WDN Workshop on Cooperative and Heterogeneous Cellular Networks (in conjunction with PIMRC), London, UK, September 8, 2013

Co-Organizer, Special Session on “Physical Layer Security” for the 14th IEEE Workshop on Signal Processing Advances in Wireless Communications, Darmstadt, Germany, June 16 - 19, 2013

Steering Committee, 2nd IEEE INFOCOM Workshop on Communications and Control for

**Other Recent (Past Five Years)**

Newton International Fellowships Committee: Physical Sciences, Royal Society, 2017 - present  
Class III Temporary Nominating Group, National Academy of Sciences, 2017 - present  
Advisory Board, Gordian Knot Analytics Group, LLC, 2017 - present  
International Advisory Board, The Institute of Electronics, Communications and Information Technology, Queen's University Belfast, UK, 2017 - present  
Chair, Wireless Engineering Advisory Board, Auburn University, 2017 - present  
Chair, Development Committee, IEEE Foundation, 2017 - present  
NAE Campaign Planning Working Group, 2017 - present  
Scientific Advisory Board, Center for Integrated Quantum Science and Technology, Universities of Ulm and Stuttgart, Germany, 2016 - present  
International Advisory Committee, National Laboratory for Pattern Recognition, Institute of Automation of the Chinese Academy of Sciences, 2015 - present  
Chair, Program Committee, NAE Council, 2015 - present  
Trustee, National Academy of Engineering Fund, 2014 - present  
Referee, John Simon Guggenheim Memorial Foundation Fellowship Competition, 2013 - present  
Interdisciplinary Committee for the Selection of the Albert Einstein World Award of Science, World Cultural Council, 2013 - present  
Corporation Visiting Committee for the Dean of Undergraduate Education, Massachusetts Institute of Technology, Cambridge, MA, 2011 - present  
Board of Directors, Center for TeleInFrastruktur - USA, Princeton, NJ, 2011 - present  
International Advisory Board, Department of Electrical & Electronic Engineering, University of Hong Kong, Hong Kong, China, 2010 - present  
Technical Advisory Board, Huawei-HKUST Lab, Hong Kong, China, 2009 - present  
International Advisory Committee, Tsinghua National Laboratory for Information Science and Technology, Tsinghua University, Beijing, China, 2008 - present  
Advisory Committee, School of Engineering, Hong Kong University of Science & Technology, Hong Kong, China, 2006 - present  
Dissertation Committee of Nima Tavangaran, Technical University of Munich, 2018  
Dissertation Committee of Victor Quintero, University of Lyon, 2017  
Dissertation Committee of Wonjae Shin, Seoul National University, 2017  
Panelist, "Research Funding Opportunities in Signal Processing at NSF," IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP), New Orleans, LA, March 5 - 9, 2017  
Panelist, "Open Problems in Signal Processing," IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP), New Orleans, LA, March 5 - 9, 2017  
Advisory Committee, Laboratory for Information and Decision Systems (LIDS), Massachusetts Institute of Technology, Cambridge, MA, 2009-17  
Scientific Advisory Committee, Programme on Theoretical Foundations of Statistical Network Analysis, Isaac Newton Institute for Mathematical Sciences, Cambridge University, Cambridge, UK, July - December 2016  
External Reviewer, Ph.D. Thesis of Alexander López-Parrado, Universidad del Valle, Cali, Colombia, 2016  
Opponent, Ph.D. Dissertation of Jayaprakash Rajasekharan, Aalto University, Helsinki, Finland, 2016  
National Academy of Sciences Award Committee on "Industrial Applications of Science", 2016  
Chair, Nominations & Appointments Committee, IEEE Foundation, 2016  
Review Panel, "Progress and Research in Cybersecurity: Supporting a Resilient and Trustworthy System for the UK," The Royal Society, London, UK, July 2016  
External Member, Ph.D. Dissertation Committee of Alex Dytso, University of Illinois at Chicago, 2016  
Invited Speaker, Shannon Centennial Celebration, Bell Labs, Murray Hill, NJ, April 28 - 29, 2016



External Member, Ph.D. Dissertation Committee of Michael Fauß, Technical University of Darmstadt, 2016

Board of Directors, Siebel Energy Institute, 2015-16

National Academies Panel on Information Science at the Army Research Lab., 2013-16

External Examiner, Master of Science in Electrical and Electronic Engineering Program, University of Hong Kong, 2013-16

IET A. F. Harvey Engineering Research Prize Search and Selection Committee, 2011-15

Advisory Board, Department of Electrical Engineering, UCLA, 2009-15

Chair, External Review Committee, School of Engineering, Brown University, 2015

“Output Feedback in Wireless Networks,” (with Samir Perlaza and Ravi Tandon). Tutorial presented at the 2015 IEEE Conference on Communications, London, UK, June 8, 2015

Panelist, “Applications of Communication Theory in Other Fields,” IEEE Communication Theory Workshop, Dana Point, CA, May 11 -13, 2015

Committee on Membership, National Academy of Engineering, 2012-14

Panelist, Panel on “Doctoral Education and Its Impact on Society,” Aalto University, Helsinki, Finland, October 9, 2014

Review Panel, Master of Science in Electrical and Electronic Engineering, and Master of Science in Energy Engineering, University of Hong Kong, 2014

Class III (Engineering & Applied Sciences) Membership Committee, National Academy of Sciences, 2013-14

Board of Visitors, Mathematical Sciences Division, U. S. Army Research Office, May 8 - 9, 2014

Opponent, Ph.D. Dissertation of Hieu Do, KTH (Royal Institute of Technology), Stockholm, Sweden, 2013

Member, Ph.D. Thesis Jury of Achraf Mallat, Université Catholique de Louvain, Belgium, 2013

Scientific Advisory Board, Austrian National Research Network on Signal and Information Processing in Science and Engineering, Vienna, Austria, 2009-13

## Invited Seminars (Past Ten Years)

The University of Texas, Austin, TX (October 19, 2017)  
Texas A&M University, College Station, TX (October 18, 2017)  
Rice University, Houston, TX (October 17, 2017)  
University of Ulm, Ulm, Germany (October 12, 2017)  
Tsinghua University, Beijing, China (September 13, 2017)  
Institute of Computing Technology, Chinese Academy of Sciences, Beijing (September 13, 2017)  
Global Fellowship Lecture, Peking University, Beijing, China, (September 11, 2017)  
Distinguished Lecture, University of Tennessee, Knoxville, TN (May 9, 2017)  
Distinguished Lecture, New Jersey Institute of Techn., Newark, NJ (May 1, 2017)  
Chien Distinguished Lecture, Univ. of Illinois at Urbana-Champaign (April 26, 2017)  
Georgia Institute of Technology, Atlanta, GA (April 19, 2017)  
Precourt Institute, Stanford University, Stanford, CA (March 16 & 23, 2017)  
Distinguished Lecture, University of California, Davis, CA (February 16, 2017)  
Miller Institute, University of California, Berkeley, CA (January 31, 2016)  
EECS, University of California, Berkeley, CA (January 30, 2016)  
Imperial College, London, UK (November 3, 2016)  
Isaac Newton Institute, Cambridge University, UK (October 27, 2016)  
University of Bristol, UK (October 14, 2016)  
Shanghai Jiao Tong University, Shanghai (March 22, 2016)  
China Mobile Research Institute, Beijing (March 18, 2016)  
Institute of Computing Technology, Chinese Academy of Sciences, Beijing (March 18, 2016)  
National Lab. for Pattern Recognition, Chinese Academy of Sciences, Beijing (March 15, 2016)  
Technical University of Darmstadt, Darmstadt, Germany (March 1, 2015)  
University of Pennsylvania, Philadelphia, PA (September 22, 2015)  
Distinguished Lecture, University of Toronto, Toronto, Canada (September 17, 2015)  
Nunan Lecture, Syracuse University (April 6, 2015)  
Viterbi Lecture, University of Southern California, Los Angeles, CA (March 24, 2015)  
Rochester Institute of Technology, Rochester, NY (March 20, 2015)  
Mercer Lecture, Rensselaer Polytechnic Institute, Troy, NY (March 11, 2015)  
Distinguished Lecture, Aalto University, Helsinki, Finland (October 9, 2014)  
Distinguished Lecture, Northeastern University, Boston, MA (September 18, 2014)  
Peking University, Beijing, China (August 19, 2014)  
Tsinghua University, Beijing, China (August 19, 2014)  
Imperial College, London (July 14, 2014)  
Distinguished Lecture, University of Miami, FL (April 7, 2014)  
Distinguished Lecture, Carnegie-Mellon - Silicon Valley, Mountain View, CA (March 5, 2014)  
Rutgers University, Piscataway, NJ (February 28, 2014)  
Stanford University, Stanford, CA (January 27, 2014)  
Institute of Automation, Chinese Academy of Sciences, Beijing, China (October 31, 2013)  
Tsinghua Vision Lecture, Tsinghua University, Beijing, China (October 31, 2013)  
Institute of Computing Technology, Chinese Academy of Sciences, Beijing (October 30, 2013)  
Peking University, Beijing, China (October 29, 2013)  
Linnaeus Distinguished Lecture, Royal Institute of Technology, Stockholm (October 24, 2013)  
Distinguished Lecture, Chinese University of Hong Kong (September 17, 2013)  
Vienna University of Technology (September 6, 2013)  
Technical University of Munich (September 2, 2013)  
Institute of Computer Science, FORTH, Heraklion, Greece (July 5, 2013)  
The Technion, Haifa, Israel (June 12, 2013 & June 13, 2013)  
Distinguished Lecture, Northwestern University, Evanston, IL (May 15, 2013)  
Eminent Scholars Lecture, University of South Florida, Tampa (March 29, 2013)  
Arizona State University, Tempe, AZ (March 15, 2013)  
Distinguished Speaker, North Carolina State University, Raleigh, NC (March 1, 2013)  
Massachusetts Institute of Technology, Cambridge, MA (February 14, 2013)  
Distinguished Speaker, University of Texas at Dallas (February 8, 2013)

Stanford University, Stanford, CA (January 17, 2013)  
Hong Kong University of Science & Technology, Hong Kong, China (November 16, 2012)  
Rutgers Business School, New Brunswick, NJ (November 5, 2012)  
University of York, UK (October 29, 2012)  
University of Edinburgh, UK (October 26, 2012)  
London School of Economics and Political Science, London, UK (October 23, 2012)  
University College London, UK (October 18, 2012)  
Imperial College London, UK (October 15, 2012)  
King's College London, UK (October 10, 2012)  
University of California, Berkeley (July 16, 2012)  
Distinguished Speaker, Carnegie-Mellon University, Pittsburgh, PA (March 8, 2012)  
University of British Columbia, Vancouver, BC (February 17, 2012)  
Rice University, Houston, TX (December 5, 2011)  
Distinguished Lecture, Texas A&M University at Qatar, Doha (November 21, 2011)  
Distinguished Lecture, University of Delaware, Newark, DE (November 16, 2011)  
Aalborg University, Aalborg, Denmark (November 10, 2011)  
Aalto University, Helsinki, Finland (August 9, 2011)  
University of Edinburgh, UK (June 27, 2011)  
University of Pennsylvania, Philadelphia, PA (April 5, 2011)  
Hong Kong University of Science and Technology, Hong Kong, China (March 21, 2011)  
Harvard University, Cambridge, MA (March 4, 2011)  
MIT Lincoln Laboratories, Lexington, MA (March 3, 2011)  
University of California, Irvine, CA (January 14, 2011)  
Imperial College, London, UK (November 23, 2010)  
Alcatel-Lucent Bell Labs, Crawford Hill Lab, Holmdel, NJ (October 8, 2010)  
Cornell University, Ithaca, NY (October 4, 2010)  
Distinguished Speaker, University of Texas, Arlington, TX (September 21, 2010)  
Nokia Research Center, Helsinki, Finland (August 20, 2010)  
Aalto University, Helsinki, Finland (August 20, 2010)  
Peking University, Beijing, China (July 15, 2010)  
Universidad Carlos III de Madrid, Spain (June 25, 2010)  
Distinguished Speaker, University of Alberta, Edmonton, AB, Canada (June 8, 2010)  
Leibniz University of Hannover, Hannover, Germany (May 20 & 21, 2010)  
Polytechnic Institute of NYU, Brooklyn, NY (February 11, 2010)  
Armstrong Lecture, Columbia University, New York, NY (January 29, 2010)  
Welling Lectures, George Washington University, Washington, DC (January 19, 2010)  
Cairo University, Cairo, Egypt (January 10, 2010)  
University of California, Los Angeles (November 23, 2009)  
University of Edinburgh, UK (November 6, 2009)  
Science & Technology Innovators Lecture, University of Minnesota (September 29, 2009)  
Seoul National University, Seoul, South Korea (July 2, 2009)  
PNYLAB, LLC, Princeton, NJ (December 2, 2008)  
Texas A&M University, College Station, TX (November 19, 2008)  
Descartes Lecture, Ulm University, Ulm, Germany (November 4, 2008)  
Ulm University, Ulm, Germany (November 3, 2008)  
Distinguished Lecture, Iowa State University, Ames, IA (October 20, 2008)  
Distinguished Lecture, Pennsylvania State University, State College (October 14, 2008)  
Inaugural Lytle Lectures, University of Washington, Seattle (September 29 & 30, 2008)  
Ecole Supérieure d'Électricité (SUPÉLEC), Paris, France (September 12, 2008)  
Intel Corporation, Santa Clara, CA (June 26, 2008)  
Tufts University, Medford, MA (March 3, 2008)  
Drexel University, Philadelphia, PA (February 1, 2008)

## RESEARCH GRANTS AS (CO-)PRINCIPAL INVESTIGATOR:

### Current

- “Data-driven Modeling of Information Propagation in Multilayer and Multiplex Networks,” Army Research Office Grant W911NF-17-1-0587 (with researchers from Carnegie-Mellon University), September 28, 2017 - September 27, 2020.
- “Analysis of Local Power Grid Properties: From Network Motifs to Tensors,” National Science Foundation Grant DMS-1736417 (with researchers from the University of Texas at Dallas), September 1, 2017 - August 31, 2020.
- “Machine-Intelligence for Advanced Notification of Threats and Energy-Grid Survivable Situational Awareness (MANTESSA),” Defense Advanced Research Projects Agency Contract FA8750-16-C-0054 (with Prateek Mittal and researchers from Applied Communication Sciences, Carnegie Mellon University and Columbia University), August 1, 2016 - July 27, 2020.
- “Secure Li-Fi Wireless Communication Systems: From Fundamental Limits to Practical Schemes,” KAUST Grant No. OSR-2016-CRG5-2958-02 (with researchers from KAUST), April 1, 2017 - March 31, 2020.
- “Integrated Cognitive Mobile and Social Networking,” Army Research Office Grant W911NF-16-1-0448 (with researchers from Arizona State University), August 8, 2016 - August 7, 2019.
- “Secure Inference in the Internet of Things,” National Science Foundation Grant CNS-1702808 (with researchers from Aalto University and Lehigh University), April 1, 2017 - March 31, 2019.
- “Physical-Layer Security for the Internet of Things,” National Science Foundation Grant ECCS-1647198, September 1, 2016 - August 31, 2018.
- “Foundations of Prosumer-Centric Grid Energy Management,” National Science Foundation Grant ECCS-1549881 (with researchers from Rutgers University and Virginia Tech), September 15, 2015 - August 31, 2018.
- “Towards Universal Signal Recovery Algorithms,” National Science Foundation Grant CCF-1420575 (with Shirin Jalali), July 1, 2014 - June 30, 2018.
- “Sequential Inference and Learning for Agile Spectrum Use,” National Science Foundation Grant CNS-1456793 (with researchers from Aalto University and Worcester Polytechnic Institute), March 15, 2015 - February 28, 2018.

### Previous (Past Fifteen Years)

- “Fundamental Limits of Spectrum Sensing,” National Science Foundation Grant ECCS-1343210 (with researchers from RPI), October 1, 2013 - September 30, 2017.
- “Network Protection Under Uncertainty,” National Science Foundation Grant CMMI-1435778 (with researchers from Rutgers University), September 1, 2014 - August 31, 2017.
- “Measuring, Understanding, and Responding to Covert Social Networks,” Army Research Office MURI Grant W911NF-11-1-0036 (with Mung Chiang, Jacob Shapiro (Politics), and researchers from Harvard University, MIT, Northeastern University, and the University of Florida), November 23, 2010 - November 22, 2016.
- “Mathematical Challenges in Distributed Quickest Detection,” National Science Foundation Grant DMS-1118605 (with researchers from the University of Michigan and Worcester Polytechnic Institute), August 15, 2011 - July 31, 2015.
- “Robust Socio-Technological Networks: An Inter-Disciplinary Approach to Theoretical Foundation and Experimentation,” National Science Foundation Grant CNS-09-05086 (with Mung Chiang, Matthew Salganik (Sociology) and Jacob Shapiro (Politics)), October 1, 2009 - September 30, 2014.
- “Privacy and Utility of Databases: An Information-Theoretic Approach,” National Science Foundation Grant CCF-1016671 (with Lalitha Sankar), September 1, 2010 - August 31, 2014.
- “Information Dynamics as Foundation for Network Management,” Air Force Office of Scientific Research MURI Grant FA9550-09-1-0643 (with Mung Chiang, Jennifer Rexford (Com-

- puter Science), and researchers from Arizona State University, Caltech, Duke University, EPFL, Stanford University, the University of Pennsylvania and the University of Wisconsin), September 1, 2009 - August 31, 2014.
- “Energy Efficient Secrecy for Wireless Sensor Networks: An Information Theoretic Framework,” Office of Naval Research Grant N00014-12-1-0767 (with researchers from the Stevens Institute of Technology), May 15, 2012 - September 30, 2013.
- “Cooperative Beamforming for Efficient and Secure Wireless Communication,” National Science Foundation Grant CNS-09-05398 (with researchers from the Colorado School of Mines, the University of Houston and Rutgers University), September 1, 2009 - August 31, 2012.
- “Cooperative MIMO Radar,” Office of Naval Research Grant N00014-09-1-0342 (with researchers from Rutgers University), January 1, 2009 - March 31, 2012.
- “Complex Network Information Exchange in Random Wireless Environments,” Air Force Office of Scientific Research Grant FA9550-08-1-0480 (with researchers from Stanford University), September 30, 2008 - September 30, 2011.
- “CHARIoT: A Cooperative, Hybrid wireless ARchitecture for the next generation Internet,” National Science Foundation Grant CNS-06-25637 (with researchers from NJIT and the Technion), September 1, 2006 - August 31, 2010.
- “MAMA (Multiple Antenna Multiple Appliances) Wireless Networks: A Pervasive Technology for the Home and Workspace,” National Science Foundation Special Projects in Networking Grant ANI-03-38807 (with Stuart Schwartz, and researchers from NJIT, Rutgers University WINLAB and Lucent Bell Labs), January 1, 2004 - December 31, 2008.
- “Communicating Confidential Information Over Wireless Networks,” National Science Foundation Grant CCF-07-28208 (with researchers from Rutgers University WINLAB), October 1, 2007 - September 30, 2008.
- “The Wireless Revolution: Teaching Advanced Technology to Diverse Audiences,” National Science Foundation Grant DUE-02-05927, May 1, 2002 - April 30, 2008.
- “Radio Resource Allocation and Multiuser Detection in Very Large Scale Wireless Multiple-Access Networks,” Air Force Research Laboratory Cooperative Agreement No. FA8750-06-1-0252, September 27, 2006 - September 26, 2007.
- “ZebraNet: Position-aware Power-aware Wireless Computing for Wildlife Tracking,” National Science Foundation Information Technology Research Grant CCR-02-05214 (with Margaret Martonosi and Daniel Rubenstein), September 1, 2002 - August 31, 2007.
- “Radio Resource Management for Ad Hoc Networks: A Game Theoretic Approach,” Defense Advanced Research Projects Agency Grant HR0011-06-1-0052, August 15, 2006 - July 15, 2007.
- “Pantheon Project,” Institute for Quality Management Grant No. PRINC-PAN-01-05, January 1, 2005 - September 1, 2006.
- “Very Large-Scale Multiuser Detection (VLSMUD),” Air Force Research Laboratory Cooperative Agreement No. FA8750-05-2-0192, April 11, 2005 - June 30, 2006.
- “Communications and Networks,” Army Research Laboratory Collaborative Technology Alliance Contract No. DAAD 19-01-2-0011 (with Sergio Verdú, and researchers from BAE Systems, Georgia Tech, MIT, Motorola, Telcordia, University of Delaware, University of Maryland, etc.), May 31, 2001 - May 31, 2006.
- “Communication and Sensor Networks: Interference Mitigation and Cross-Layer Design,” Office of Naval Research Grant No. N00014-03-1-0102, January 1, 2003 - December 31, 2005.
- “The New Jersey Center for Pervasive Information Technologies,” New Jersey Commission on Science and Technology (with Perry Cook, Bede Liu, Wayne Wolf, and researchers from NJIT and Rutgers), September 1, 2000 - August 31, 2005.
- “‘Free’ Bits: The Real Challenge of the Wireless Internet,” National Science Foundation Information Technology Research Grant CCR-00-86017 (with Stuart Schwartz, and researchers from NJIT and Rutgers WINLAB), December 1, 2000 - November 30, 2004.
- “Iterative Methods for Multiuser Detection: Impulsive Noise, Coded Channels, and Multiple-Antenna Systems,” National Science Foundation Grant CCR-99-80590, April 1, 2000 - March 31, 2004.
- “New Jersey Center for Wireless Telecommunications,” New Jersey Commission on Science and Technology Center of Excellence, (with Hisashi Kobayashi, Stuart C. Schwartz, Sergio Verdú,

and researchers from NJIT, Rutgers, and Stevens Institute), October 1, 1998 - December 31, 2003.

“Network-Level and Content-Based Approaches to Diversity and Interference Management,” (with researchers from MIT, the University of California, Berkeley, and ArrayComm, Inc., Palo Alto, CA), National Science Foundation Grant CCR-9979361, September 15, 1999 - August 31, 2003.

## PUBLICATIONS

### Books:

- Information Theoretic Security and Privacy of Information Systems*. Edited, with Rafael Schaefer, Holger Boche, and Ashish Khisti. (Cambridge University Press, Cambridge, UK, 2017).
- Trusted Communications with Physical Layer Security for 5G and Beyond*. Edited, with Trung Duong and Sean Zhou. (IET Press, London, 2017).
- Smarter Energy: From Smart Metering to the Smart Grid*. Edited, with Hongjian Sun, Nikos Hatziar-gyriou, Laurence Carpanini and Miguel Angel Sánchez Fornié. (IET Press, London, 2016).
- Mechanisms and Games for Dynamic Spectrum Allocation*. Edited, with Tansu Alpcan, Holger Boche and Michael Honig. (Cambridge University Press, Cambridge, UK, 2014).
- Principles of Cognitive Radio*. With Ezio Biglieri, Andrea Goldsmith, Larry Greenstein and Narayan Mandayam. (Cambridge University Press, Cambridge, UK, 2013).
- Cooperative Wireless Cellular Systems: An Information-Theoretic View*. With Osvaldo Simeone, Nathan Levy, Amichai Sanderovich, Oren Somekh, Benjamin M. Zaidel and Shlomo Shamai. (Now Pub-lishers, Hanover, MA, 2012). [Also published in *Foundations and Trends in Communications and Information Theory*, Vol. 8, Nos. 1-2, pp. 1 - 177, 2012.]
- Smart Grid Communications and Networking*. Edited, with Ekram Hossain and Zhu Han. (Cambridge University Press, Cambridge, UK, 2012) [Chinese translation published by PHEI, Beijing, 2013.]
- Classical, Semi-Classical and Quantum Noise*. Edited, with Leon Cohen and Marlan Scully. (Springer-Verlag: New York, 2012)
- Information Theoretic Security*. With Yingbin Liang and Shlomo Shamai. (Now Publishers, Hanover, MA, 2009) [Also published in *Foundations and Trends in Communications and Information Theory*, Vol. 5, Nos. 4 - 5, pp. 355 - 580, 2009.]
- Quickest Detection*. With Olympia Hadjilias. (Cambridge University Press, Cambridge, UK, 2009)
- MIMO Wireless Communications*. With Ezio Biglieri, A. Robert Calderbank, Anthony G. Constan-tinides, Andrea Goldsmith and A. Paulraj. (Cambridge University Press, Cambridge, UK, 2007). [Japanese translation published by Tokyo Denki University Press, Tokyo, in 2009.] [Korean trans-lation to be published by Jinhan Media & Book Publishers.]
- Wireless Networks: Multiuser Detection in Cross-Layer Design*. With Cristina Comaniciu and Narayan Mandayam. (Springer: New York, 2005)
- Wireless Communication Systems: Advanced Techniques for Signal Reception*. With Xiaodong Wang. (Prentice-Hall, Upper Saddle River, NJ, 2004). [Chinese translation published by Electronic Industry Publishers, Beijing, in 2005.]
- Communications, Information and Network Security*. Edited, with Vijay Bhargava, Vahid Tarokh and Seokho Yoon. (Kluwer: Boston, 2002)
- Signal Processing for Wireless Communication Systems*. Edited, with Lang Tong. (Kluwer: Boston, 2002)
- Wireless Communications: Signal Processing Perspectives*. Edited, with Gregory W. Wornell. (Prentice-Hall: Upper Saddle River, NJ, 1998)
- An Introduction to Signal Detection and Estimation*. (Springer-Verlag: New York, 1988; Second Edition, 1994) [Chinese translation published by China Machine Press, Beijing, in 2015.]
- Advances in Statistical Signal Processing - Vol. 2: Signal Detection*. Edited, with John B. Thomas. (JAI Press: Greenwich, CT, 1993)
- Advances in Statistical Signal Processing - Vol. 1: Estimation*. Edited. (JAI Press: Greenwich, CT, 1987)
- Communications and Networks: A Survey of Recent Advances*. Edited, with Ian F. Blake. (Springer-Verlag: New York, 1986)

## Contributions to Books:

- “Compression Codes for Compressed Sensing,” (with Shirin Jalali). Chapter in *Information-Theoretic Methods in Signal Acquisition, Analysis and Processing*, Yonina Eldar and Miguel Rodrigues, Eds. (Cambridge University Press, Cambridge, UK, 2018), to appear.
- “Dynamic Social Networks: Search and Data Routing,” (with Hazer Inaltekin). Chapter in *Cooperative and Graph Signal Processing: Principles and Applications*, Petar M. Djurić and Cédric Richard, Eds. (Elsevier, Amsterdam, 2018), to appear.
- “A Broadcast Approach to Fading Channels under Secrecy Constraints,” (with Lifeng Lai, Yingbin Liang and Shlomo Shamai). Chapter in *Information-Theoretic Perspectives on 5G Systems and Beyond*, Ivana Maric, Osvaldo Simeone and Shlomo Shamai, Eds. (Cambridge University Press, Cambridge, UK, 2018), to appear.
- “Information-Theoretic Perspectives on Non-Orthogonal Multiple Access (NOMA),” (with Peng Xu and Zhiguo Ding). Chapter in *Information-Theoretic Perspectives on 5G Systems and Beyond*, Ivana Maric, Osvaldo Simeone and Shlomo Shamai, Eds. (Cambridge University Press, Cambridge, UK, 2018), to appear.
- “Data-Driven Approaches for Detecting Anomalous Data Streams,” (with Shaofeng Zou, Yingbin Liang and Xinghua Shi). Chapter in *Biomedical Signal Processing in Big Data*, Ervin Sejdic and Tiago Falk, Eds. (CRC Press, Boca Raton, FL, 2018), to appear.
- “Privacy in Networks of Interacting Agents.” Chapter in *Emerging Applications of Control and System Theory: A Festschrift in Honor of Mathukumalli Vidyasagar*, Roberto Tempo, Stephen Yurkovich and Pradeep Misra, Eds. (Springer, New York, 2018), to appear.
- “Privacy in the Smart Grid: Information, Control and Games.” Chapter 18 in *Information Theoretic Security and Privacy of Information Systems*. Rafael Schaefer, Holger Boche, Ashish Khisti and H. Vincent Poor, Eds. (Cambridge University Press, Cambridge, UK, 2017), pp. 498 - 518.
- “Super-Activation as a Unique Feature of Secure Communication Over Arbitrarily Varying Channels,” (with Rafael F. Schaefer and Holger Boche). Chapter 11 in *Information Theoretic Security and Privacy of Information Systems*. Rafael Schaefer, Holger Boche, Ashish Khisti and H. Vincent Poor, Eds. (Cambridge University Press, Cambridge, UK, 2017), pp. 314 - 330.
- Foreword to *Cloud Radio Access Networks: Principles, Technologies, and Applications*, Tony Q. S. Quek, Mugen Peng, Osvaldo Simeone and Wei Yu, Eds. (Cambridge University Press, Cambridge, UK, 2017), p. xiii.
- “Nonorthogonal Multiple Access (NOMA) for 5G Systems,” (with Zhiguo Ding). Chapter 6 in *Key Technologies for 5G Wireless Systems*, Vincent Wong, et al., Eds. (Cambridge University Press, Cambridge, UK, 2017), pp. 109 - 132.
- “Relaying for Massive MIMO,” (with Gayan Amarasuriya). Chapter 2 in *Advanced Relay Technologies in Next Generation Wireless Communications*, Ioannis Krikidis and Gan Zheng, Eds., (IET Press, London, 2016), pp. 39 - 70.
- “Arbitrarily Varying Channels A Model for Robust Communication in the Presence of Unknown Interference,” (with Rafael F. Schaefer and Holger Boche). Chapter 12 in *Communications in Interference Limited Networks*, Wolfgang Utschick, Ed., (Springer-Verlag, Cham, Switzerland, 2016), pp. 259 - 283.
- “Broadcast Channels with Confidential Messages: Channel Uncertainty, Robustness, and Continuity,” (with Rafael F. Schaefer, Andrea Grigorescu and Holger Boche). Chapter 5 in *Physical and Data-Link Security Techniques for Future Communication Systems*, Marco Baldi and Stefano Tomasin, Eds., (Springer-Verlag, Cham, Switzerland, 2016), pp. 69 - 91.
- “Physical Layer Security: A Paradigm Shift in Data Confidentiality,” (with Arsenia Chorti, Camilla Hollanti and Jean-Claude Belfiore). Chapter 1 in *Physical and Data-Link Security Techniques for Future Communication Systems*, Marco Baldi and Stefano Tomasin, Eds., (Springer-Verlag, Cham, Switzerland, 2016), pp. 1 - 15.
- Foreword to *Trends in Digital Signal Processing: A Festschrift in Honour of A. G. Constantinides*. Yong Ching Lim, Hon Keung Kwan and Wan-Chi Siu, Eds. (CRC Press: Boca Raton, FL, 2016), pp. xxi - xxii.



- “Big Data Processing for Smart Grid Security,” (with Lanchao Liu, Zhu Han and Shuguang Cui). Chapter 8 in *Big Data over Networks*, Shuguang (Robert) Cui, Alfred O. Hero III, Zhi-Quan (Tom) Luo, and José M. F. Moura, Eds. (Cambridge University Press, Cambridge, UK, 2015), pp. 217 - 244.
- “Cooperation in Cognitive Radio Networks: From Monitoring to Access,” (with Walid Saad). Chapter 8 in *Mechanisms and Games for Dynamic Spectrum Allocation*, Tansu Alpcan, et al., Eds. (Cambridge University Press, Cambridge, UK, 2014), pp. 233 - 265.
- “Key Generation from Wireless Channels,” (with Lifeng Lai, Yinglin Liang and Wenliang Du). Chapter 4 in *Physical Layer Security in Wireless Communications*, Xiangyun Zhou and Lingyang Song, Eds. (Auerbach Publications, CRC Press, Boca Raton, FL, 2014), pp. 47 - 68.
- “Spectrum Exploration and Exploitation,” (with Jarmo Lundén and Visa Koivunen). Chapter 5 in *Principles of Cognitive Radio*, Ezio Biglieri, et al. (Cambridge University Press, Cambridge, UK, 2013), pp. 184 - 258.
- “Distributed State Estimation: A Learning-based Framework,” (with Ali Tajer and Soumya Kar). Chapter 8 in *Smart Grid Communications and Networking*. Ekram Hossain, Zhu Han and H. Vincent Poor, Eds. Cambridge University Press, Cambridge, UK, 2012), pp. 191 - 201.
- “Bad-data Detection in Smart Grids: A Distributed Approach,” (with Le Xie, Dae-Hyun Choi and Soumya Kar). Chapter 7 in *Smart Grid Communications and Networking*. Ekram Hossain, Zhu Han and H. Vincent Poor, Eds. Cambridge University Press, Cambridge, UK, 2012), pp. 175 - 190.
- Foreword to *Non-Gaussian Statistical Communication Theory*, by David Middleton (John Wiley & Sons: Hoboken, NJ, 2012), p. xv.
- Foreword to *Fundamentals of Wireless Communications Engineering Technologies*, by Daniel Wong (John Wiley & Sons: Hoboken, NJ, 2012), p. xix.
- “Multiple-Access Interference.” Chapter 12 in *Classical, Semi-Classical and Quantum Noise*. Leon Cohen, H. Vincent Poor, and Marlan Scully, Eds. (Springer-Verlag: New York, 2012), pp. 145 - 156.
- Foreword to *Intermittently Connected Mobile Ad Hoc Networks - From Routing to Content Distribution*, by Abbas Jamalipour and Yaozhou Ma. (Springer: New York, 2011), p. vii.
- “Competition and Collaboration in Wireless Sensor Networks.” Chapter 1 in *Sensor Networks - Where Theory Meets Practice*, Gianluigi Ferrari, Ed. (Springer-Verlag: New York, 2010), pp. 3 - 16.
- “Hybrid-ARQ Schemes for Reliable and Secret Wireless Communications,” (with Xiaojun Tang, Ruoheng Liu and Predrag Spasojevic). Chapter 5 in *Securing Wireless Communications at the Physical Layer*, Ruoheng Liu and Wade Trappe, Eds. (Springer-Verlag: New York, 2010), pp. 89 - 112.
- “Secret Communication Under Channel Uncertainty,” (with Yingbin Liang and Shlomo Shamai). Chapter 6 in *Securing Wireless Communications at the Physical Layer*, Ruoheng Liu and Wade Trappe, Eds. (Springer-Verlag: New York, 2010), pp. 113 - 141.
- “Source Coding under Secrecy Constraints,” (with Deniz Gündüz and Elza Erkip). Chapter 8 in *Securing Wireless Communications at the Physical Layer*, Ruoheng Liu and Wade Trappe, Eds. (Springer-Verlag: New York, 2010), pp. 173 - 200.
- “Message Authentication: Information Theoretic Bounds,” (with Lifeng Lai and Hesham El Gamal). Chapter 14 in *Securing Wireless Communications at the Physical Layer*, Ruoheng Liu and Wade Trappe, Eds. (Springer-Verlag: New York, 2010), pp. 335 - 377.
- “Cross-Layer Cooperative Beamforming for Wireless Networks,” (with Lun Dong and Athina Petropulu). Chapter 7 in *Cooperative Communications for Improved Wireless Network Transmission: Frameworks for Virtual Antenna Array Applications*, Murat Uysal, Ed. (IGI Global: Hershey, PA, 2009), pp. 207 - 237.
- “Fundamentals of Multi-User MIMO Communications,” (with Luca Sanguinetti). Chapter 6 in *New Directions in Wireless Communications Research*, Vahid Tarokh, Ed. (Springer-Verlag: New York, 2009), pp. 139 - 173.
- “Blind Multiuser Detection in Fading Channels,” (with Daryl Reynolds and Xiaodong Wang). Chapter 3 in *Advances in Multiuser Detection*, Michael Honig, Ed. (Wiley: New York, 2009), pp. 127 -187.

- “Impact of Cooperative Transmission on Network Routing,” (with Zhu Han). Chapter 13 in *Cooperative Wireless Communications*, Yan Zhang, Hsiao-Hwa Chen and Mohsen Guizani, Eds. (Taylor & Francis: London, 2009), pp. 283 - 316.
- “Random Array Theory and Collaborative Beamforming,” (with Hideki Ochiai, Patrick Mitran and Vahid Tarokh). Chapter 5 in *Handbook on Advancements in Smart Antenna Technologies for Wireless Networks*, Chen Sun, Jun Cheng and Takashi Ohira, Eds. (IGI Global: Hershey, PA, 2009), pp. 94 - 106.
- “UWB Localization Algorithms,” (with Sinan Gezici). Chapter 10 in *Short Range Wireless Communication: Emerging Technologies and Applications*, Rolf Kraemer and Marcos Katz, Eds. (Wiley: New York, 2008), pp. 73 - 84.
- “Ultra Wideband Communication,” (with A. Anttonen, et al.). Section 7.4.2 in *Technologies for the Wireless Future: Wireless World Research Forum, Volume 3*, Klaus David, Ed. (Wiley: New York, 2008), pp. 323 - 341.
- “Distributed Learning in Wireless Sensor Networks,” (with Joel B. Predd and Sanjeev R. Kulkarni). Chapter 8 in *Wireless Sensor Networks: Signal Processing and Communications Perspectives*, Ananthram Swami, Yao-Win Hong, Qing Zhao and Lang Tong, Eds. (Wiley: New York, 2007), pp. 185 - 214.
- “Multi-user Receiver Design,” (with Huaiyu Dai, Sudharman Jayaweera, Daryl Reynolds and Xiaodong Wang). Chapter 6 in *MIMO Wireless Communications*, E. Bilgieri, et al. (Cambridge University Press, Cambridge, UK, 2007), pp. 230 - 292.
- “Multiple-Access Interference Mitigation in UWB Systems,” (with Sinan Gezici and Hisashi Kobayashi). Chapter 10 in *Ultrawideband Communications*, H. Arslan, Z. N. Chen and M.-G. Di Benedetto, Eds. (Wiley: New York, 2006), pp. 227 - 254.
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- “Multiuser MIMO Systems,” (with Daryl Reynolds and Xiaodong Wang). Chapter 20 in *Space-Time Wireless Systems: From Array Processing to MIMO Communications*, H. Bölcskei, D. Gesbert, C. Papadias and A.-J. van der Veen, Eds., (Cambridge University Press: Cambridge, UK, 2006), pp. 406 - 425.
- “Advances in Quantum Detection,” (with Julio I. Concha), Chapter 7 in *Communications, Information and Network Security*. V. Bhargava, H. V. Poor, V. Tarokh and S. Yoon, Eds. (Kluwer: Boston, 2002), pp. 89 - 121.
- “Sequence Detection: Backward and Forward in Time,” Chapter 6 in *Codes, Graphs and Systems*, Richard E. Blahut and Ralf Koetter, Eds. (Kluwer: Boston, 2002), pp. 93 - 112.
- “Detection of Stochastic Processes,” (with Thomas Kailath), in *Information Theory: 50 Years of Discovery*, Sergio Verdú and Steven McCloughlin, Eds. (IEEE Press: New York, 2000), pp. 186 - 215.
- “Adaptive Interference Suppression for Wireless Multiple-access Communication Systems,” Chapter 27 in *Circuits and Systems for Wireless Communications*, M. Helfenstein and G. Moschytz, Eds. (Kluwer: Dordrecht, 2000), pp. 341 - 349.
- “Adaptive Interference Suppression,” (with Michael L. Honig), Chapter 2 in *Wireless Communications: Signal Processing Perspectives*, H. V. Poor and G. W. Wornell, Eds. (Prentice-Hall: Upper Saddle River, NJ, 1998), pp. 64 - 128.
- “Information, Communication, Noise and Interference,” (with John B. Thomas), in *Electronics Engineers’ Handbook - Fourth Edition*, D. Christiansen, Ed. (McGraw-Hill: New York, 1997), pp. 4.1 - 4.49.
- “Finite Field Wavelet Transforms,” in *Lecture Notes in Computer Science No. 1133: Information Theory and Applications 2*, Jean-Yves Chouinard, Paul Fortier, and T. Aaron Gulliver, Eds. (Springer-Verlag: New York, 1996), pp. 225 - 238.
- “Modulation and Detection,” in *The Engineering Handbook*, R. C. Dorf, Ed. (CRC Press: Littleton, MA, 1996), pp. 1359 - 1377.

- Foreword to the Classic Re-issue of *Introduction to Statistical Communication Theory*, by David Middleton (IEEE Press: New York, 1996).
- Foreword to *Introduction to Nonparametric Detection with Applications*, by Jerry D. Gibson and James L. Melsa (IEEE Press: New York, 1996).
- “Lattice Filters in Discrete and Continuous Time,” (with Steven R. Weller and Graham C. Goodwin), in *Control and Dynamic Systems: Advances in Theory and Applications - Vol. 65: Stochastic Techniques in Digital Signal Processing*, Part 2 of 2, C. T. Leondes, Ed. (Harcourt Brace & Co., Orlando, FL, 1994).
- “Signal Detection,” in *The Electrical Engineering Handbook*, R.C. Dorf, Ed. (CRC Press: Littleton, MA, 1993), pp. 67-1 - 67-10. [Also in *The Electrical Engineering Handbook - Second Edition*, 1997; pp. 1633 - 1642.]
- “Signal Detection in Dependent Non-Gaussian Noise,” (with John B. Thomas), in *Advances in Statistical Signal Processing - Vol. 2*, H. V. Poor and J. B. Thomas, Eds., (JAI Press: Greenwich, CT, 1993), pp. 217 - 258.
- “Nonstandard Methods in Prediction,” in *Adaptive Signal Processing*, L.D. Davisson and G. Longo, Eds. (Springer-Verlag: Heidelberg, 1991), pp. 172 - 203.
- “Analysis of a Class of Adaptive Nonlinear Predictors,” (with Rajiv Vijayan), in *Advances in Communications and Signal Processing*, W. A. Porter and S. C. Zak, Eds., (Springer-Verlag: New York 1989), pp. 231 - 241.
- “On Parameter Estimation in DS/SSMA Formats,” in *Advances in Communications and Signal Processing*, W. A. Porter and S. C. Zak, Eds., (Springer-Verlag: New York 1989), pp. 59 - 70.
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### Invited Plenary and Keynote Addresses:

- “Smart Grid: Games, Games and More Games.” Presented at the *7th EAI International Conference on Game Theory for Networks (GAMENETS)*, Knoxville, TN, May 9 - 10, 2017.
- “Privacy-Utility Tradeoffs in the Smart Grid.” Presented at the *International Conference on Computing, Networking and Communications*, Santa Clara, CA, January 26 - 29, 2017.
- “Secure Broadcasting with Independent Secret Keys.” Presented at the *Symposium on Information Theoretic Approaches to Security and Privacy, 2016 IEEE Global Conference on Signal and Information Processing*, Washington, DC, December 7 - 9, 2016.
- “Feedback in Wireless Networks: Recent Results and Discoveries.” Presented at the *2015 Workshop on High Mobility Wireless Communications*, Xi’an, China, October 21 - 23, 2015.
- “Privacy in the Smart Grid: Information, Control and Games.” Presented at the *2015 International Workshop on Advances in Information Coding and Wireless Communications*, Chengdu, China, October 18 - 20, 2015.
- “Anomaly Detection in Large Data Sets.” Presented at the *7th International Conference on Wireless Communications and Signal Processing*, Nanjing, China, October 15 - 17, 2015.
- “Smart Grid: The Role of the Information Sciences.” Presented at the *IEEE International Conference on Communications*, London, UK, June 8 - 12, 2015.
- “Privacy in Networks of Interacting Agents.” Presented at the *IEEE ICC Workshop on Advances in Network Localization and Navigation*, London, UK, June 8 or 12, 2015.
- “Privacy-Utility Tradeoffs for Information Sources.” Presented at the *IEEE Global Conference on Signal and Information Processing (GlobalSIP)*, Atlanta, GA, December 3 - 5, 2014.
- “Security and Privacy of Information Sources: Information Theoretic Insights.” Presented at the *IEEE Conference on Communications and Network Security*, San Francisco, CA, October 29 - 31, 2014.
- “Cooperation in Cognitive Radio Networks.” Presented at the *Inauguration Ceremony of CorteXlab: The Cognitive Radio Testbed of the FIT Project*, INSA, Lyon, France, October 28, 2014.
- “Privacy of Information Sources: Fundamental Limits and Tradeoffs.” Presented at the *IEEE/CIC International Conference on Communications in China*, Shanghai, October 13 - 15, 2014.
- “Games, Privacy and Distributed Inference for the Smart Grid.” Presented at the *KAUST-NSF Conference on Electronic Materials, Devices and Systems for Sustainable Future*, KAUST, Saudi Arabia, February 8 - 10, 2014.
- “Games, Privacy and Distributed Inference for the Smart Grid.” Presented at the *UCLA Smart Grid Thought Leadership Forum*, Los Angeles, CA, October 15, 2013.
- “Privacy-Utility Tradeoffs for Data Sources, with Applications in Smart Grid.” Presented at the *27th Annual IFIP WG 11.3 Working Conference on Data Applications Security and Privacy*, Rutgers University, Newark, NJ, July 15 - 17, 2013.
- “Games, Privacy and Distributed Inference for the Smart Grid.” Presented at the *Tenth International Symposium on Wireless Communication Systems*, Ilmenau, Germany, August 27 - 30, 2013.
- “Privacy-Utility Tradeoffs in Biometric and Other Systems.” Presented at the *18th International Conference on Digital Signal Processing*, Santorini, Greece, July 1 - 3, 2013.
- “Feedback in Wireless Networks: Recent Results and Discoveries.” Presented at the *14th IEEE Workshop on Signal Processing Advances in Wireless Communications*, Darmstadt, Germany, June 16 - 19, 2013.
- “The Nonlinear Fourier Transform and Signal Processing.” Presented at the *2013 Constantinides International Workshop on Signal Processing*, London, UK, January 25, 2013.
- “Privacy-Utility Tradeoffs for Data Sources, with Applications in Smart Grid.” Presented at the *6th SmartEN (Smart Management for Sustainable Human Environment) Marie Curie ITN Multi-Disciplinary Workshop*, London, UK, October 8 - 10, 2012.
- “Fundamental Limits on Information Security and Privacy.” Presented at the *2012 World Wide Security and Mobility Conference*, Taipei, Taiwan, September 24, 2012.
- “Privacy-Utility Tradeoffs in Smart Grid Communications.” Presented at the *15th International Symposium on Wireless Personal Multimedia Communications*, Taipei, Taiwan, September 24 - 27, 2012.

- “An Information-Theoretic Approach to Privacy of Data Sources.” Presented at *Wireless Advanced*, King’s College, London, June 25 - 26, 2012.
- “Fundamental Limits on Information Security and Privacy.” Presented at the *IEEE International Conference on Communications*, Ottawa, ON, Canada, June 10 - 15, 2012.
- “Physical Layer Security in Wireless Networks.” Presented at the *2012 Symposium and Summer School on Wireless Communications*, Virginia Tech, Blacksburg, VA, May 20 – June 1, 2012.
- “Bridging the Disciplines in Teaching and Research.” Presented at the *IEEE Integrated STEM Conference*, Ewing, NJ, March 9, 2012.
- “Fundamentals of Cooperation in Cellular Networks.” Presented at the *IEEE Workshop on Multicell Cooperation for Next Generation Communication Systems* (in conjunction with the *2011 IEEE Global Communications Conference*), Houston, TX, December 9, 2011.
- “Privacy-Utility Tradeoffs in the Smart Grid.” Presented at the *IEEE International Workshop on Smart Grid Communications and Networks* (in conjunction with the *2011 IEEE Global Communications Conference*), Houston, TX, December 5, 2011.
- “Physical Layer Security in Wireless Networks.” Presented at the *Eighth International Symposium on Wireless Communication Systems*, Aachen, Germany, November 6 - 9, 2011.
- “College Admission Games in Wireless Femtocell Networks.” Presented at the *IEEE Workshop on Game Theory and Resource Allocation for 4G* (in conjunction with the *2011 IEEE International Conference on Communications*), Kyoto, Japan, June 5, 2011.
- “Privacy-Utility Tradeoffs of Data Sources.” Presented at *Secure Wireless Networks*, Paris, France, May 20, 2011.
- “Physical Layer Security in Wireless Networks.” Presented at the *2010 IEEE Global Communications Conference*, Miami, FL, December 6 - 10, 2010.
- “The APP and the PHY in Wireless Networks.” Presented at the *21st Annual IEEE International Symposium on Personal, Indoor and Mobile Radio Communication*, Istanbul, Turkey, September 26 - 30, 2010.
- “Information and Inference in the Wireless Physical Layer.” Presented at the *Workshop on Information Theoretic Methods in Science and Engineering*, Tampere, Finland, August 17 - 19, 2010.
- “New Directions in Wireless Research.” Presented at the *TNList Academic Summit on IT Vision 2010*, Tsinghua University, Beijing, China, July 12 - 14, 2010.
- “Application-Driven Problems in the Wireless Physical Layer.” Presented at *Wireless Advanced*, King’s College, London, June 27 - 29, 2010.
- “Research on Socio-Technological Networks: Delay of Information Delivery and the Sharing Mart System.” Presented at the *First IEEE International Workshop on Social Networking* (in conjunction with the *2010 IEEE International Conference on Communications*). Cape Town, South Africa, May 23, 2010.
- “Collaborative Signal Processing in Wireless Sensor Networks.” Presented at the *6th International Symposium on Image and Signal Processing*, Salzburg, Austria, September 16 - 18, 2009.
- “APP-PHY Interactions in Wireless Networks.” Presented at the *2009 Canadian Workshop on Information Theory*, Ottawa, ON, Canada, May 13 - 15, 2009.
- “APP-PHY Interactions in Wireless Networks.” Presented at the *4th Annual LIDS Student Conference*, MIT, Cambridge, MA, January 29 - 30, 2009.
- “Node Interaction in Wireless Networks: Competition and Cooperation.” Presented at the *IET Workshop on Wideband and Ultrawideband Systems and Technologies*, London, UK, November 6, 2008.
- “Physical Layer Security in Wireless Networks.” Presented at the *Annual Meeting of the Gruppo Telecomunicazioni Teoria dell’Informazione*, Florence, Italy, June 18, 2008.
- “Information Theory: Past and Present.” Presented at the *First School of Information Theory*, State College, PA, June 1 - 5, 2008.
- “The Future of Wireless Networks: A Researcher’s Perspective.” Presented at the *2008 IEEE International Conference on Communications*, Beijing, China, May 19 - 23, 2008.

- “Physical Layer Security in Wireless Networks.” Presented at the *3rd International Symposium on Communications, Control and Signal Processing*, St. Julians, Malta, March 12 - 14, 2008.
- “Competition and Collaboration in Wireless Networks.” Presented at the *2007 IEEE International Symposium on Information Theory*, Nice, France, June 24 - 29, 2007. [A summary is published in the *IEEE Information Theory Society Newsletter*, Vol. 57, No. 4, pp. 24 - 27, December 2007.]
- “Physical Layer Security in Wireless Networks.” Presented at the *Fifth Workshop on Signal Processing for Wireless Communications*, King’s College, London, UK, June 7 - 9, 2007.
- “Energy and Inference in Wireless Sensor Networks.” Presented at the *2007 IEEE Sarnoff Symposium*, Princeton, NJ, April 30 - May 2, 2007.
- “Energy and Bandwidth in Wideband Systems.” Presented at the *2006 IEEE International Conference on Ultra-Wideband*, Waltham, MA, September 24 - 27, 2006.
- “Signal Processing Across the Layers in Wireless Networks.” Presented at the *2006 European Signal Processing Conference*, Florence, Italy, September 4 - 8, 2006.
- “Energy Efficiency and Distributed Inference in Wireless Sensor Networks.” Presented at the *Fourth Workshop on Signal Processing for Wireless Communications*, King’s College, London, UK, May 30 - 31, 2006.
- “Energy and Inference in Wireless Sensor Networks.” Presented at the *2006 IEEE Communication Theory Workshop*, Dorado, Puerto Rico, May 21 - 24, 2006.
- “Signal Processing Issues in Wireless Sensor Networks.” Presented at the *SPIE Conference on Advanced Signal Processing Algorithms, Architectures and Implementations XV*, San Diego, CA, July 31 - August 4, 2005.
- “Signal Processing and Wireless Networks.” Presented at the *IEEE 7th Emerging Technologies Workshop: Circuits and Systems for 4G Mobile Wireless Communications*, St. Petersburg, Russia, June 23 - 24, 2005.
- “Signal Processing and the Efficiency of Wireless Networks.” Presented at the *2005 IEEE Wireless Communications and Networking Conference*, New Orleans, LA, March 13 - 17, 2005.
- “Signal Processing and the Efficiency of Wireless Networks.” Presented at the *2004 International Conference on Signal Processing and Communications*, Indian Institute of Science, Bangalore, India, December 11 - 14, 2004.
- “Challenges of the Wireless Revolution.” Presented at the *31st International Symposium of the National Academy of Sciences*, Republic of Korea, Seoul, October 17, 2003.
- “Signal Processing in Communications: Possibilities and Probabilities.” Presented at the *2002 IEEE Global Telecommunications Conference*, Taipei, Taiwan, November 17 - 20, 2002.
- “Turbo Fusion.” Presented at the *Fifth International Conference on Information Fusion*, Annapolis, MD, July 8 - 11, 2002.
- “Advances in Multiuser Detection.” Presented at the *2001 IEEE-EURASIP Workshop on Nonlinear Signal and Image Processing*, Baltimore, MD, June 3-6, 2001.
- “Advances in Multiuser Detection.” Presented at the *Third IEEE Signal Processing Workshop on Signal Processing Advances in Wireless Communications*, Taoyuan, Taiwan, March 20 - 23, 2001.
- “The Wireless Revolution: Signal Processing as the ‘Great Enabler’.” Presented at the *Audio Engineering Society 18th International Conference: Audio for Information Appliances*, Burlingame, CA, March 2001
- “The Wireless Revolution: Signal Processing as the ‘Great Enabler’.” Presented at the *International Conference on Signal Processing Applications and Technology 2000*, Dallas, TX, October 16 - 19, 2000.
- “The Wireless Revolution: A Signal Processing Perspective.” Presented at the *2000 IEEE “Silver Anniversary” Conference on Acoustics, Speech and Signal Processing*, Istanbul, Turkey, June 5 - 9, 2000
- “Enabling the Wireless Revolution.” Presented at the *20th Biennial Symposium on Communications*, Queens University Kingston, Ontario, May 29 - 31, 2000.

- “Intelligent Signal Processing in Wireless Systems.” Presented at the *1999 IEEE International Symposium on Intelligent Signal Processing and Communication Systems*, Phuket, Thailand, December 8 - 10, 1999.
- “The Role of Signal Processing in Wireless Communications.” Presented at the *1999 IASTED Conference on Signal and Image Processing*, Nassau, The Bahamas, October 18 - 21, 1999.
- “Multiuser Detection: Interference Suppression as Integer Regression.” Presented at the *1999 IEEE Information Theory Workshop on Detection, Estimation, Classification and Imaging*, Santa Fe, NM, February 23 - 27, 1999.
- “Adaptive Multiuser Detection.” Presented at the *First Signal Processing Workshop on Signal Processing Applied to Wireless Communications*, Paris, France, April 15 - 18, 1997.
- “Finite-field Wavelet Transforms.” Presented at the *Canadian Workshop on Information Theory*, Lac Delage, PQ, Canada, May 28 - 31, 1995.
- “Maximum Entropy and Robust Prediction on a Simplex.” Presented at the *1994 IEEE/IMS Workshop on Information Theory and Statistics*, Alexandria, VA, October 27 - 29, 1994.

### Conference Papers (Asterisks Denote Invited Papers):

- \*“Sensor Placement for Learning to Infer Power Network Topology,” (with Yue Zhao). *Proceedings of the 2018 IEEE Data Science Workshop*, Lausanne, Switzerland, June 4 - 6, 2018, to appear.
- “On the Application of NOMA to Wireless Caching,” (with Zhiguo Ding, Pingzhi Fan, George K. Karagiannidis and Robert Schober). *Proceedings of the IEEE International Conference on Communications*, Kansas City, MO, May 20 - 24, 2018, to appear.
- “Diversity Gain Analysis of Distributed CDD Systems in Non-identical Frequency Selective Fading,” (with Kyeong Jin Kim, Marco Di Renzo, Hongwu Liu and Philip V. Orlik). *Proceedings of the IEEE International Conference on Communications*, Kansas City, MO, May 20 - 24, 2018, to appear.
- “A Novel Online Convex Optimization Algorithm Based on Virtual Queues,” (with Xuanyu Cao and Junshan Zhang). *Proceedings of the IEEE International Conference on Communications*, Kansas City, MO, May 20 - 24, 2018, to appear.
- “Optimal Renewable Penetration in Energy Procurement and Demand Response,” (with Xuanyu Cao and Junshan Zhang). *Proceedings of the IEEE International Conference on Communications*, Kansas City, MO, May 20 - 24, 2018, to appear.
- “Tradeoff of Content Sharing Efficiency and Secure Transmission in Coded Caching Systems,” (with Yinan Ding, Li Wang, Huaqing Wu and Xuemin (Sherman) Shen). *Proceedings of the IEEE International Conference on Communications*, Kansas City, MO, May 20 - 24, 2018, to appear.
- “Secrecy Performance Analysis of Distributed CDD Based Cooperative Systems with Jamming,” (with Kyeong Jin Kim, Hongwu Liu, Marco Di Renzo and Philip V. Orlik). *Proceedings of the IEEE International Conference on Communications*, Kansas City, MO, May 20 - 24, 2018, to appear.
- “Achieving Minimum Error in MISO Optical Spatial Modulation,” (with Anil Yesilkaya, Tezcan Cogan, Erdal Panayirci and Harald Haas). *Proceedings of the IEEE International Conference on Communications*, Kansas City, MO, May 20 - 24, 2018, to appear.
- “On the Equivalence of  $f$ -Divergence Balls and Density Bands in Robust Detection,” (with Michael Fauß and Abdelhak M. Zoubir). *Proceedings of the IEEE International Conference on Acoustics, Speech and Signal Processing*, Alberta, Canada, April 15 - 20, 2018, to appear.
- \*“Smart Routing in Smart Grids,” (with S. Rasoul Etesami, Walid Saad and Narayan Mandayam). *Proceedings of the 56th IEEE Conference on Decision and Control*, Melbourne, Australia, December 12 - 15, 2017.
- \*“Intentional Islanding of Power Grids with Data Depth,” (with Asim Dey and Yulia Gel). *Proceedings of the 2017 IEEE International Workshop on Computational Advances in Multi-Sensor Adaptive Processing*, Curaçao, Dutch Antilles, December 10 - 13, 2017.
- “Latency and Reliability-Aware Task Offloading and Resource Allocation for Mobile Edge Computing,” (with Chen-Feng Liu and Mehdi Bennis). *Proceedings of the 6th International Workshop on Emerging Technologies for 5G and Beyond Wireless and Mobile Networks*, held in conjunction with the *IEEE Global Communications Conference*, Singapore, December 8, 2017.
- “Dependent Differential Privacy for Correlated Data,” (with Jun Zhao and Junshan Zhang). *Proceedings of the 5th IEEE GLOBECOM Workshop on Trusted Communications with Physical Layer Security*, Singapore, December 8, 2017.
- “Robust Secrecy Rate Maximization for MISO WIPT System with Transmit TS Scheme,” (with Ali A. Nasir and Hoang D. Tuan). *Proceedings of the 5th IEEE GLOBECOM Workshop on Trusted Communications with Physical Layer Security*, Singapore, December 8, 2017.
- “Secrecy Throughput of Wireless Interference Networks with Uncertain Channel State Information,” (with Zhichao Sheng, Ali A. Nasir and Hoang D. Tuan). *Proceedings of the 5th IEEE GLOBECOM Workshop on Trusted Communications with Physical Layer Security*, Singapore, December 8, 2017.
- “Caching with Statistical Request Delay Information,” (with Wei Chen). *Proceedings of the IEEE Global Communications Conference*, Singapore, December 4 - 8, 2017.
- “Upper and Lower Bounds on the Capacity of Amplitude-Constrained MIMO Channels,” (with Alex Dytso, Mario Goldenbaum and Shlomo Shamai). *Proceedings of the IEEE Global Communications Conference*, Singapore, December 4 - 8, 2017.

- “Learning-Based Content Caching with Time-Varying Popularity Profiles,” (with Bettagere N. Bharath, Kyatsandra G. Nagananda and Deniz Gündüz). *Proceedings of the IEEE Global Communications Conference*, Singapore, December 4 - 8, 2017.
- “Convex Quadratic Programming for Maximizing Sum Throughput in MIMO-NOMA Multicell Networks,” (with Van-Dinh Nguyen, Hoang D. Tuan, Trung Q. Duong and Oh-Soon Shin). *Proceedings of the IEEE Global Communications Conference*, Singapore, December 4 - 8, 2017.
- “Joint Pushing and Caching Based on Physical Layer Multicasting and Network Coding,” (with Yawei Lu and Wei Chen). *Proceedings of the IEEE Global Communications Conference*, Singapore, December 4 - 8, 2017.
- “Dynamic Resource Matching for Socially Cooperative Caching in IoT Networking,” (with Li Wang, Huaqing Wu, Zhu Han and Ping Zhang). *Proceedings of the IEEE Global Communications Conference*, Singapore, December 4 - 8, 2017.
- “Trust Degree Based Beamforming for Cooperative Communication Systems,” (with Mojtaba Vaezi, Hazer Inaltekin, Wonjae Shin and Junshan Zhang). *Proceedings of the IEEE Global Communications Conference*, Singapore, December 4 - 8, 2017.
- “A Fair Individual Rate Comparison between MIMO-NOMA and MIMO-OMA,” (with Ming Zeng, Animesh Yadav and Octavia A. Dobre). *Proceedings of the 2nd International Workshop on Non-Orthogonal Multiple Access Techniques for 5G*, held in conjunction with the *IEEE Global Communications Conference*, Singapore, December 4, 2017.
- \*“Motif-Based Analysis of Power Grid Robustness,” (with Asim Dey and Yulia R. Gel). *Proceedings of the 2016 IEEE Global Conference on Signal and Information Processing*, Montreal, Canada, November 14 -16, 2017.
- \*“Privacy Amplification for Low-Latency Physical-Layer Communications,” (with Wei Yang and Rafael Schaefer). Presented at the *Workshop on Low-latency Wireless Random Access*, MIT, Cambridge, MA, November 2 - 3, 2017.
- \*“Physical Layer Security in Massive MIMO Systems,” (with Rafael Schaefer and Gayan Amarasuriya). *Proceedings of the 51st Annual Asilomar Conference on Signals, Systems, and Computers*, Pacific Grove, CA, October 29 - November 1, 2017.
- “Optimal Demand-Side Management for Joint Privacy-Cost Optimization with Energy Storage,” (with Giulio Giacconi and Deniz Gündüz). *Proceedings of the IEEE International Conference on Smart Grid Communications*, Dresden, Germany, October 23 - 26, 2017.
- “Information-Theoretic Attacks in the Smart Grid,” (with Ke Sun, Iñaki Esnaola and Samir M. Perlaza). *Proceedings of the IEEE International Conference on Smart Grid Communications*, Dresden, Germany, October 23 - 26, 2017.
- \*“An FDR-Oriented Approach to Multiple Sequential Fault Detection and Isolation,” (with Jie Chen and Wenyi Zhang). *Proceedings of the 55th Annual Allerton Conference on Communication, Control and Computing*, Monticello, IL, October 4 - 6, 2017.
- “On the Equality Condition for the I-MMSE Proof of the Entropy Power Inequality,” (with Alex Dytso, Ronit Bustin and Shlomo Shamai). *Proceedings of the 55th Annual Allerton Conference on Communication, Control and Computing*, Monticello, IL, October 4 - 6, 2017.
- \*“Privacy in Networks of Interacting Agents.” Presented at the *Workshop on Emerging Applications on Control and System Theory*. University of Texas at Dallas, Richardson, TX, September 28 - 30, 2017.
- “A Sequential Constraint Relaxation Algorithm for Rank-One Constrained Problems,” (with Pan Cao and John Thompson). *Proceedings of the 25th European Signal Processing Conference*, Kos, Greece, August 27 - September 2, 2017.
- “Beamforming and Power Allocation for Energy-Efficient Massive MIMO,” (with Long D. Nguyen, Hoang D. Tuan and Trung Q. Duong). *Proceedings of the 22nd International Conference on Digital Signal Processing*, London, UK, August 23 - 25, 2017.
- \*“User Request Prediction Increases Energy Efficiency in AWGN Channels,” (with Wei Huang and Wei Chen). *Proceedings of the 18th IEEE International Workshop on Signal Processing Advances in Wireless Communications*, Sapporo, Japan, July 3 - 6, 2017.



- “Outage Analysis of a Cognitive Radio System with Cooperative Non-Orthogonal Multiple Access,” (with Sunyoung Lee, Trung Q. Duong and Himal A. Suraweera). *Proceedings of the 18th IEEE International Workshop on Signal Processing Advances in Wireless Communications*, Sapporo, Japan, July 3 - 6, 2017.
- “Multi-Leader Multi-Follower Game-Based ADMM for Big Data Processing,” (with Zijie Zheng, Lingyang Song, Zhu Han and Geoffrey Ye Li). *Proceedings of the 18th IEEE International Workshop on Signal Processing Advances in Wireless Communications*, Sapporo, Japan, July 3 - 6, 2017.
- “On Additive Channels with Generalized Gaussian Noise,” (with Alex Dytso, Ronit Bustin and Shlomo Shamai). *Proceedings of the 2017 IEEE International Symposium on Information Theory*, Aachen, Germany, June 25 - 30, 2017.
- “Outer Bounds for Multiple Access Channels with State Known at One Encoder,” (with Wei Yang, Yingbin Liang and Shlomo Shamai). *Proceedings of the 2017 IEEE International Symposium on Information Theory*, Aachen, Germany, June 25 - 30, 2017.
- “Secrecy-Reliability Tradeoff for Semi-Deterministic Wiretap Channels at Finite Blocklength,” (with Wei Yang and Rafael F. Schaefer). *Proceedings of the 2017 IEEE International Symposium on Information Theory*, Aachen, Germany, June 25 - 30, 2017.
- “Nash Region of the Linear Deterministic Interference Channel with Noisy Output Feedback,” (with Victor Quintero and Samir M. Perlaza). *Proceedings of the 2017 IEEE International Symposium on Information Theory*, Aachen, Germany, June 25 - 30, 2017.
- “A Generalized Ozarow-Wyner Capacity Bound with Applications,” (with Alex Dytso, Mario Goldenbaum and Shlomo Shamai). *Proceedings of the 2017 IEEE International Symposium on Information Theory*, Aachen, Germany, June 25 - 30, 2017.
- “Characterization of Super-Additivity and Discontinuity Behavior of the Capacity of Arbitrarily Varying Channels under List Decoding,” (with Holger Boche and Rafael Schaefer). *Proceedings of the 2017 IEEE International Symposium on Information Theory*, Aachen, Germany, June 25 - 30, 2017.
- “MIMO Gaussian Wiretap Channels with Two Transmit Antennas: Optimal Precoding and Power Allocation,” (with Mojtaba Vaezi, Wonjae Shin and Jungwoo Lee). *Proceedings of the 2017 IEEE International Symposium on Information Theory*, Aachen, Germany, June 25 - 30, 2017.
- “Game Theoretic Study of Protecting MIMO Transmissions Against Smart Attacks,” (with Yanda Li, Liang Xiao and Huaiyu Dai.) *Proceedings of the IEEE International Conference on Communications*, Paris, France, May 21 - 25, 2017.
- “On the Coexistence of Non-orthogonal Multiple Access and Millimeter-Wave Communications,” (with Zhiguo Ding and Pingzhi Fan). *Proceedings of the IEEE International Conference on Communications*, Paris, France, May 21 - 25, 2017.
- “Multicast-Pushing with Human-in-the-loop: Where Social Networks Meet Wireless Communications,” (with Qi Yan, Wei Chen and Bo Bai). *Proceedings of the IEEE International Conference on Communications*, Paris, France, May 21 - 25, 2017.
- “Fundamental Limits of a Dense IoT Cell in the Uplink,” (with Jean-Marie Gorce, Yasser Fadlallah, Jean-Marc Kelif and Azeddine Gati). *Proceedings of the Workshop on Spatial Stochastic Models for Wireless Networks*, Paris, France, May 19, 2017.
- “Cumulative Prospect Theoretic Study of a Cloud Storage Defense Game Against Advanced Persistent Threats,” (with Dongjin Xu, Liang Xiao and Narayan Mandayam). *Proceedings of the International Workshop on Security and Privacy in Big Data*, in connection with the IEEE International Conference on Computer Communications, Atlanta, GA, May 1 - 4, 2017.
- \*“Minimum Entropy Pursuit: Noise Analysis,” (with Shirin Jalali). *Proceedings of the 42nd IEEE International Conference on Acoustics, Speech and Signal Processing*, New Orleans, LA, March 5 - 9, 2017.
- “Sequential Joint Signal Detection and Signal-to-Noise Ratio Estimation,” (with Michael Fauß, Kyatsandra G. Nagananda and Abdelhak M. Zoubir). *Proceedings of the 42nd IEEE International Conference on Acoustics, Speech and Signal Processing*, New Orleans, LA, March 5 - 9, 2017.
- “Two-dimensional Anti-jamming Communication Based on Deep Reinforcement Learning,” (with Guo An Han, Liang Xiao). *Proceedings of the 42nd IEEE International Conference on Acoustics, Speech and Signal Processing*, New Orleans, LA, March 5 - 9, 2017.

- \*“Some Results on the Generalized Gaussian Distribution,” (with Alex Dytso, Ronit Bustin, Natasha Devroye, Shlomo Shamai, and Daniela Tuninetti). Presented at the *2017 Information Theory and Applications Workshop*, Pacific Beach, CA, February 12 -16, 2017.
- \*“Wiretap Channels: Non-Asymptotic Fundamental Limits,” (with Wei Yang and Rafael Schaefer). Presented at the *2017 Information Theory and Applications Workshop*, Pacific Beach, CA, February 12 -16, 2017.
- \*“On Secure Computation over Linear Multiple-access Wiretap Channels,” (with Mario Goldenbaum and Holger Boche). Presented at the *2017 Information Theory and Applications Workshop*, Pacific Beach, CA, February 12 -16, 2017.
- \*“Random Tree Search Algorithm for Nash Equilibrium in Capacitated Selfish Replication Games,” (with Seyed Nematollah Ahmadyany and Seyed Rasoul Etesami). *Proceedings of the IEEE Conference on Decision and Control*, Las Vegas, NV, December 12 - 14, 2016.
- \*“Privacy in the Smart Grid: Information, Control and Games.” Presented at the *IEEE Workshop on Teams, Games and Control* (in conjunction with the *IEEE Conference on Decision and Control*), Las Vegas, NV, December 11, 2016.
- \*“Efficient Neural Network Architecture for Topology Identification in Smart Grid,” (with Yue Zhao and Jianshu Chen). *Proceedings of the 2016 IEEE Global Conference on Signal and Information Processing*, Washington, DC, December 7 - 9, 2016.
- “Secrecy Performance of Cooperative Single Carrier Systems with Unreliable Backhaul Connections,” (with Phee Lep Yeoh, Kyeong Jin Kim and Philip V. Orlik). *Proceedings of the 2016 IEEE Global Communications Conference*, Washington, DC, December 4 - 8, 2016.
- “Content Pushing Based on Physical Layer Multicasting and Request Delay Information,” (with Yawei Lu and Wei Chen). *Proceedings of the 2016 IEEE Global Communications Conference*, Washington, DC, December 4 - 8, 2016.
- “Prospect Theoretic Study of Cloud Storage Defense Against Advanced Persistent Threats,” (with Dongjin Xu, Yanda Li, Liang Xiao and Narayan Mandayam). *Proceedings of the 2016 IEEE Global Communications Conference*, Washington, DC, December 4 - 8, 2016.
- “Spatial Continuum Model: Toward the Fundamental Limits of Dense Wireless Networks,” (with Jean-Marie Gorce and Jean-Marc Kelif). *Proceedings of the 2016 IEEE Global Communications Conference*, Washington, DC, December 4 - 8, 2016.
- “Finite Blocklength Information Theory: What is the Practical Impact on Wireless Communications?” (with Philippe Mary, Jean-Marie Gorce and Ayse Unsul). *Proceedings of the IEEE International Workshop on Low-Layer Implementation and Protocol Design for IoT Applications (IoT-LINK), 2016 IEEE Global Communications Conference*, Washington, DC, December 4, 2016.
- \*“Secure Computation of Linear Functions over Linear Discrete Multiple-Access Wiretap Channels,” (with Mario Goldenbaum and Holger Boche). *Proceedings of the 50th Annual Asilomar Conference on Signals, Systems, and Computers*, Pacific Grove, CA, November 6 - 9, 2016.
- \*“On Parallel Sequential Change Detection Controlling False Discovery Rate,” (with Jie Chen and Wenyi Zhang). *Proceedings of the 50th Annual Asilomar Conference on Signals, Systems, and Computers*, Pacific Grove, CA, November 6 - 9, 2016.
- \*“Nonparametric Composite Outlier Detection,” (with Weiguang Wang and Yingbin Liang). *Proceedings of the 50th Annual Asilomar Conference on Signals, Systems, and Computers*, Pacific Grove, CA, November 6 - 9, 2016.
- “Real Time Electricity Theft Detection in Microgrids Through Wireless Sensor Networks,” (with Muhammad Tariq). *Proceedings of IEEE SENSORS*, Orlando, FL, October 30 - November 2, 2016.
- “Multiple Key Generation with Restricted Public Discussion Structure,” (with Wenwen Tu, Mario Goldenbaum and Lifeng Lai). *Proceedings of the 3rd Workshop on Physical-Layer Methods for Wireless Security, IEEE Conference on Communications and Network Security*, Philadelphia, PA, October 17 - 19, 2016.
- “A Data Processing Architecture for Realtime Decoding of Extremely Long LDPC Codes,” (with Quanqiang Miao, Bo Bai and Wei Chen). *Proceedings of the 2016 International Conference on Digital Signal Processing*, Beijing, China, October 16 - 18, 2016.

- “Hypergraph Based Three-Dimensional Matching in Wireless Distributed Storage over D2D Links,” (with Li Wang, Huaqing Wu, Yinan Ding and Wei Chen). *Proceedings of the 2016 International Conference on Digital Signal Processing*, Beijing, China, October 16 - 18, 2016.
- “Prospect Theory for Enhanced Smart Grid Resilience Using Distributed Energy Storage,” (with Georges El Rahi, Anibal Sanjab, Walid Saad and Narayan B. Mandayam). *Proceedings of the 54th Annual Allerton Conference on Communication, Control and Computing*, Monticello, IL, September 28 - 29, 2016.
- \*“On the Number of Users Served in MIMO NOMA Cellular Networks,” (with Wonjae Shin and Mojtaba Vaezi). *Proceedings of the Thirteenth International Symposium on Wireless Communication Systems*, Poznan, Poland, September 20 - 23, 2016.
- “On the Applications of the Minimum Mean  $p$ -th Error (MMPE) to Information Theoretic Quantities,” (with Alex Dytso, Ronit Bustin, Daniela Tuninetti, Natasha Devroye and Shlomo Shamai). *Proceedings of the 2016 IEEE Information Theory Workshop*, Cambridge, UK, September 11 - 14, 2016.
- “ $K$ -User Degraded Broadcast Channel with Secrecy Outside a Bounded Range,” (with Shaofeng Zou, Yingbin Liang, Lifeng Lai and Shlomo Shamai). *Proceedings of the 2016 IEEE Information Theory Workshop*, Cambridge, UK, September 11 - 14, 2016.
- “Simultaneously Generating Multiple Keys over a Cascade of a Noiseless Channel and a Wiretap Channel,” (with Wenwen Tu, Mario Goldenbaum and Lifeng Lai). *Proceedings of the 2016 IEEE Information Theory Workshop*, Cambridge, UK, September 11 - 14, 2016.
- “On Secure Computation Over the Binary Modulo-2 Adder Multiple-Access Wiretap Channel,” (with Mario Goldenbaum and Holger Boche). *Proceedings of the 2016 IEEE Information Theory Workshop*, Cambridge, UK, September 11 - 14, 2016.
- “Using Compression Codes in Compressed Sensing,” (with Farideh Ebrahim Rezagah, Shirin Jalali and Elza Erkip). *Proceedings of the 2016 IEEE Information Theory Workshop*, Cambridge, UK, September 11 - 14, 2016.
- “Prospect Theory for Prosumer-Centric Energy Trading in the Smart Grid,” (with George El Rahi, Walid Saad, Arnold Glass and Narayan Mandayam). *Proceedings of the 2016 IEEE PES Innovative Smart Grid Technologies Conference*, Minneapolis, MN, September 6 - 9, 2016.
- “Cognitive Hierarchy Theory for Heterogeneous Uplink Multiple Access in the Internet of Things,” (with Nof Abuzainab and Walid Saad). *Proceedings of the 2016 IEEE International Symposium on Information Theory*, Barcelona, Spain, July 10 - 15, 2016.
- “A Beta-Beta Achievability Bound with Applications,” (with Wei Yang, Austin Collins, Giuseppe Durisi, and Yury Polyanskiy). *Proceedings of the 2016 IEEE International Symposium on Information Theory*, Barcelona, Spain, July 10 - 15, 2016.
- “Super-Activation as a Unique Feature of Arbitrarily Varying Wiretap Channels,” (with Rafael F. Schaefer and Holger Boche). *Proceedings of the 2016 IEEE International Symposium on Information Theory*, Barcelona, Spain, July 10 - 15, 2016.
- “Quickest Detection of Markov Networks,” (with Javad Heydari and Ali Tajer). *Proceedings of the 2016 IEEE International Symposium on Information Theory*, Barcelona, Spain, July 10 - 15, 2016.
- “On the Minimum Mean  $p$ -th Error in Gaussian Noise Channels and its Applications,” (with Alex Dytso, Ronit Bustin, Daniela Tuninetti, Natasha Devroye and Shlomo Shamai). *Proceedings of the 2016 IEEE International Symposium on Information Theory*, Barcelona, Spain, July 10 - 15, 2016.
- “Gaussian Approximation Bounds for the Downlink Interference in  $K$ -Tier Heterogeneous Cellular Networks,” (with Serkan Ak and Hazer Inaltekin). *Proceedings of the 2016 IEEE International Symposium on Information Theory*, Barcelona, Spain, July 10 - 15, 2016.
- “Downlink Outage Performance of Heterogeneous Cellular Networks,” (with Serkan Ak and Hazer Inaltekin). *Proceedings of the 2016 IEEE International Symposium on Information Theory*, Barcelona, Spain, July 10 - 15, 2016.
- “Universal Compressed Sensing,” (with Shirin Jalali). *Proceedings of the 2016 IEEE International Symposium on Information Theory*, Barcelona, Spain, July 10 - 15, 2016.

- “Finite-Blocklength Bounds for Wiretap Channels,” (with Wei Yang and Rafael F. Schaefer). *Proceedings of the 2016 IEEE International Symposium on Information Theory*, Barcelona, Spain, July 10 - 15, 2016.
- “Feedback Enhances Simultaneous Wireless Information and Energy Transmission in Multiple Access Channels,” (with Selma Belhadj Amor, Samir M. Perlaza and Ioannis Krikidis). *Proceedings of the 2016 IEEE International Symposium on Information Theory*, Barcelona, Spain, July 10 - 15, 2016.
- “Rate-Distortion Dimension of Stochastic Processes,” (with Farideh Ebrahim Rezagah, Shirin Jalali and Elza Erkip). *Proceedings of the 2016 IEEE International Symposium on Information Theory*, Barcelona, Spain, July 10 - 15, 2016.
- “On Channel Dispersion Per Unit Cost,” (with Yücel Altug and Sergio Verdú). *Proceedings of the 2016 IEEE International Symposium on Information Theory*, Barcelona, Spain, July 10 - 15, 2016.
- “Multiple Non-Bayesian Change-Point Detection Controlling False Discovery Rate,” (with Jie Chen and Wenyi Zhang). *Proceedings of the 2016 IEEE International Symposium on Information Theory*, Barcelona, Spain, July 10 - 15, 2016.
- “Guiding Blind Transmitters for  $K$ -User MISO Interference Relay Channels with Imperfect Channel Knowledge,” (with Wonjae Shin, Namyoon Lee and Jungwoo Lee). *Proceedings of the 2016 IEEE International Symposium on Information Theory*, Barcelona, Spain, July 10 - 15, 2016.
- \*“Wireless Energy Harvesting Massive MIMO Relays,” (with Gayan Amarasuriya and Shang Liu). *Proceedings of the Ninth IEEE Sensor Array and Multichannel Signal Processing Workshop*, Rio de Janeiro, Brazil, July 10 - 13, 2016.
- “New Theorems on Sparsest Unobservable Attacks in Power Networks,” (with Yue Zhao and Andrea Goldsmith). *Proceedings of the 2016 American Control Conference*, Boston, MA, July 6 - 8, 2016.
- \*“Mean-Field Games for Distributed Caching in Ultra-Dense Small Cell Networks,” (with Kenza Hamidouche, Walid Saad and Mérouane Debbah). *Proceedings of the 2016 American Control Conference*, Boston, MA, July 6 - 8, 2016.
- \*“Secure Communication in Massive MIMO Relay Networks,” (with Gayan Amarasuriya and Rafael F. Schaefer). *Proceedings of the 17th IEEE International Workshop on Signal Processing Advances in Wireless Communications*, Edinburgh, UK, July 3 - 6, 2016.
- \*“Secure Multicast Communications with Private Jammers,” (with Kanapathippillai Cumanan, Zhiguo Ding and Mai Xu). *Proceedings of the 17th IEEE International Workshop on Signal Processing Advances in Wireless Communications*, Edinburgh, UK, July 3 - 6, 2016.
- \*“Decentralized MMSE Attacks in Electricity Grids,” (with Iñaki Esnaola, Samir M. Perlaza and Oliver Kosut). *Proceedings of the 2016 IEEE Statistical Signal Processing Workshop*, Palma de Mallorca, Spain, June 26 - 29, 2016.
- “A Finite Moving Average Test for Transient Change Detection in GNSS Signal Strength Monitoring,” (with Daniel Egea-Roca, Gonzalo Seco-Granados and José A. López-Salcedo). *Proceedings of the 2016 IEEE Statistical Signal Processing Workshop*, Palma de Mallorca, Spain, June 26 - 29, 2016.
- \*“Learning to Infer: New Variational Inference Methods for Power Grid Topology Identification,” (with Yue Zhao and Jianshu Chen). *Proceedings of the 2016 IEEE Statistical Signal Processing Workshop*, Palma de Mallorca, Spain, June 26 - 29, 2016.
- “Joint Pushing and Caching with a Finite Receiver Buffer: Optimal Policies and Throughput Analysis,” (with Wei Chen). *Proceedings of the 2016 IEEE International Conference on Communications*, Kuala Lumpur, Malaysia, May 23 - 27, 2016.
- “Communication Theoretic Inference on Heterogeneous Data,” (with Kwang-Cheng Chen, Baturalp Mankir, Shao-Lun Huang and Lizhong Zheng). *Proceedings of the 2016 IEEE International Conference on Communications*, Kuala Lumpur, Malaysia, May 23 - 27, 2016.
- “On the Design of MIMO-NOMA Downlink and Uplink Transmission,” (with Zhiguo Ding and Robert Schober). *Proceedings of the 2016 IEEE International Conference on Communications*, Kuala Lumpur, Malaysia, May 23 - 27, 2016.
- “Simplified Han-Kobayashi Region for One-Sided and Mixed Gaussian Interference Channels,” (with Motjaba Vaezi). *Proceedings of the 2016 IEEE International Conference on Communications*, Kuala Lumpur, Malaysia, May 23 - 27, 2016.

- \*“Shannon’s Work and Its Legacy,” (with Michelle Effros). Presented at *The Bell Labs Shannon Conference on the Future of the Information Age*, Murray Hill, NJ, April 28 - 29, 2016.
- “Efficiency Modeling and Optimization of Social Learning Networks in MOOCs,” (with Christopher Brinton, Swapna Buccapatnan, Felix Ming Fai Wong and Mung Chiang). *Proceedings of the IEEE International Conference on Computer Communications (INFOCOM)*, San Francisco, CA, April 10 - 15, 2016.
- “Mobile Offloading Game Against Smart Attacks,” (with Liang Xiao, Caixia Xie, Tianhua Chen and Huaiyu Dai). *Proceedings of the Fourth International Workshop on Security and Privacy in Big Data (BigSecurity 16)*, San Francisco CA, April 10 -15, 2016.
- “Adaptive Distributed Compressed Estimation Based on Recursive Least Squares with Sensing Matrix Design,” (with Huang Bai, Songcen Xu, Sheng Li, Rodrigo C. de Lamare and Xiongxiang He). *Proceedings of the 41st IEEE International Conference on Acoustics, Speech and Signal Processing*, Shanghai, China, March 20 - 25, 2016.
- “Nonparametric Detection of an Anomalous Disk over a Two-dimensional Lattice Networks,” (with Shaofeng Zou and Yingbin Liang). *Proceedings of the 41st IEEE International Conference on Acoustics, Speech and Signal Processing*, Shanghai, China, March 20 - 25, 2016.
- “Quickest Search over Correlated Sequences with Model Uncertainty,” (with Javad Heydari and Ali Tajer). *Proceedings of the 41st IEEE International Conference on Acoustics, Speech and Signal Processing*, Shanghai, China, March 20 - 25, 2016.
- “A Low-Complexity Near-ML Differential Spatial Modulation Detector,” (with Miaowen Wen, Xiang Cheng and Yuyang Bian). Presented at the *41st IEEE International Conference on Acoustics, Speech and Signal Processing*, Shanghai, China, March 20 - 25, 2016. [Also published in *IEEE Signal Processing Letters*, Vol. 22, No. 11, pp. 1834 - 1838, November 2015.]
- “Training Design and Channel Estimation in Uplink Cloud Radio Access Networks,” (with Xinqian Xie, Mugen Peng and Wenbo Wang). Presented at the *41st IEEE International Conference on Acoustics, Speech and Signal Processing*, Shanghai, China, March 20 - 25, 2016. [Also published in *IEEE Signal Processing Letters*, Vol. 22, No. 8, pp. 1060 - 1064, August 2015.]
- \*“Recent Results on Broadcast Networks with Layered Decoding and Secrecy: An Overview,” (with Shaofeng Zou, Yingbin Liang, Lifeng Lai and Shlomo Shamai). *Proceedings of the 2016 International Zurich Seminar on Communications*, Zurich, Switzerland, March 2 - 4, 2016.
- \*“On the Secrecy Capacity of the Z-Interference Channel,” (with Ronit Bustin, Mojtaba Vaezi and Rafael F. Schaefer). *Proceedings of the 2016 International Zurich Seminar on Communications*, Zurich, Switzerland, March 2 - 4, 2016.
- \*“On Secure Broadcasting Over Parallel Channels with Independent Secret Keys,” (with Rafael Schaefer and Ashish Khisti). *Proceedings of the 2016 International Zurich Seminar on Communications*, Zurich, Switzerland, March 2 - 4, 2016.
- \*“A Beta-beta Achievability Channel Coding Bound with Applications,” (with Wei Yang, Austin Collins, Giuseppe Durisi and Yury Polyanskiy). *Proceedings of the 2016 International Zurich Seminar on Communications*, Zurich, Switzerland, March 2 - 4, 2016.
- \*“Secure Communication in Massive MIMO Relay Networks,” (with Gayan Amarasuriya and Rafael Schaefer). Presented at the *2016 Information Theory and Applications Workshop*, La Jolla, CA, January 30 - February 5, 2016.
- \*“On the Gaussian Channel with Feedback under Probabilistic Power Constraints,” (with Yücel Altug and Sergio Verdú). Presented at the *2016 Information Theory and Applications Workshop*, La Jolla, CA, January 30 - February 5, 2016.
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## Ph.D. THESES SUPERVISED:

### Princeton University:

- A New Approach to Lossy Compression and Applications to Security* (2015), by Eva Song (now with FutureWei Technologies, Bridgewater, NJ; co-supervised with Paul Cuff)
- New Approaches to Reconstructing Geometric Models From Noisy Measurements* (2012), by Jieqi Yu (now with Facebook, Menlo Park, CA; co-supervised with Sanjeev Kulkarni)
- Topics in Probabilistic Judgment Aggregation* (2011), by Arvid Wang (now with Baidu, Beijing, China; co-supervised with Sanjeev Kulkarni)
- Distributed Learning: Regression on Attribute-Distributed Data and Consensus Clustering* (2011), by Haiping Zheng (now with Virtu Financial; co-supervised with Sanjeev Kulkarni)
- Channel Coding: Non-Asymptotic Fundamental Limits* (2010), by Yury Polyanskiy (now with the Massachusetts Institute of Technology; co-supervised with Sergio Verdú)
- Stochastic Network Utility Maximization: Modeling, Analysis and Applications* (2009), by Jiaping Liu (now an attorney with Haley Guiliano, New York, NY; co-supervised with Mung Chiang)
- Energy Efficient Communication in Wireless Networks* (2008), by Sharon M. Betz (now with Mitre Corporation, McLean, VA)
- Topics in Distributed Inference* (2006), by Joel B. Predd (now with the RAND Corporation, Pittsburgh, PA; co-supervised with Sanjeev Kulkarni)
- Game Theoretic Approaches to Energy-Efficient Radio Resource Management in Multiple-Access Networks* (2006), by Farhad Meshkati (now with Qualcomm Corporation, San Diego, CA; co-supervised with Stuart C. Schwartz)
- Design and Analysis of Impulse Radio Ultra Wideband Receivers for Communications and Geolocation* (2006), by Sinan Gezici (now with Bilkent University, Ankara, Turkey; co-supervised with Hisashi Kobayashi)
- Side Information in Bandit Problems and Low-Density Parity-Check Codes for Non-Symmetric Channels* (2005), by Chih-Chun Wang (now with Purdue University; co-supervised with Sanjeev Kulkarni)
- Performance Analysis of Multiuser Detection Based Receivers in Fading CDMA Channels* (2005), by Husheng Li (now with the University of Tennessee)
- Topics in Stochastic Processes and Their Applications* (2004), by Erhan Bayraktar (now with the University of Michigan (Mathematics))
- Non-Coherent Fading Channels: Spectral Efficiency and Efficient Signaling* (2004), by Mustafa Gursoy (now with Syracuse University; co-supervised with Sergio Verdú)
- Affine and Quadratic Markov Processes and Their Applications in Finance* (2004), by Li Chen (now with Merrill Lynch, New York, NY)
- Time-Frequency and Time-Scale Representations of Doubly Spread Channels* (2003), by Scott Rickard (now with University College, Dublin, Ireland; co-supervised with Sergio Verdú)
- Multi-Antenna Wireless Communication Systems: Capacity, Coding and Receiver Design* (2003), by Sudharman K. Jayaweera (now with the University of New Mexico)
- Capacity and Coverage of Two-Tier Cellular CDMA Networks* (2003), by Shalinee Kishore (now with Lehigh University; co-supervised with Stuart Schwartz)
- Topics in DS/CDMA Systems* (2002), by Yingwei Yao (now with the University of Illinois, Chicago)
- Signal Detection in Multiaccess Quantum Channels* (2002), by Julio Ignacio Concha (now with Pragma Securities, New York, NY)
- Wireless Cellular Communications with Antenna Arrays* (2002), by Huaiyu Dai (now with North Carolina State University)
- Multi-Alternative Online Change Detection with Applications in Wireless Communications* (2001), by Taragay Oskiper (now with Sarnoff Corp., Princeton, NJ)
- Rate Scheduling Techniques and Delay Quality of Service Guarantees for Heterogeneous Networks* (2001), by Aikaterini Varsou (now with Sound View Innovations, Parsippany, NJ)

*The Linear Structure of Self-Similar Processes* (2000), by Carl Jeremy Nuzman (now with the Mathematics Research Center, Nokia Bell Labs, Murray Hill, NJ)

*Topics in Multiuser Detection* (1998), by Xiaodong Wang (now with Columbia University)

*Statistical Models for Rapidly Sampled Data* (1997), by Lih-Huah Yiin (now with KAL Instruments, San Jose, CA)

*Finite-field Wavelet Transforms and Error Control Coding* (1996), by Sandip Sarkar (now with Qualcomm Corporation, San Diego, CA)

*Multiuser Detection for Radio-frequency and Optical Code-division Multiple Access Channels* (1995), by Laurie B. Nelson (now with the IDA Center for Communications Research, Princeton, NJ)

*Interference Suppression in Spread Spectrum Code Division Multiple Access Communications* (1994), by Leslie Ann Rusch (now with Université Laval, Québec City, Canada)

*Adaptive Multi-user Detection* (1994), by Urbashi Mitra (now with the University of Southern California)

#### **University of Illinois:**

*Topics in Decentralized Detection* (1992), by Venugopal V. Veeravalli (now with the University of Illinois at Urbana-Champaign; co-supervised with Tamer Başar)

*Difference-Operator-Based Models in Statistical Signal Processing* (1991), by Rajiv Vijayan (now with Qualcomm Corporation, San Diego, CA)

*Identification of Impulsive Interference Channels* (1989), by Serena M. Zabin (formerly with the Georgia Institute of Technology)

*Signal Detection in Fractional Gaussian Noise and an RKHS Approach to Robust Detection and Estimation* (1988), by Richard J. Barton (now with the NASA Johnson Space Center, Houston, TX)

*Performance Analysis of DS/SSMA Communications in Impulsive Channels* (1986), by Behnaam Aazhang (now with Rice University)

*Optimum Multi-user Signal Detection* (1984), by Sergio Verdú (now with Princeton University)

*Topics in Robust Statistical Signal Processing* (1982), by Kenneth Steven Vastola (now with the Rensselaer Polytechnic Institute)

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Reeves Yang (Drexel University; now with Shannon Systems, Shanghai (founder))  
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