# HAROLD <u>VINCENT</u> 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
Associated 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

*Selected Other Visiting Positions:*

Moore Distinguished Scholar, California Institute of Technology, 2019-21 (upcoming)
Fellow, Hagler Institute for Advanced Study, Texas A & M University, 2018 - 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
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, European Alliance for Innovation (elected 2018)

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 (2019)

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)

**Selected Recognition for Teaching, Mentoring & Educational Contributions**

Benjamin Garver Lamme Award, ASEE (2019)

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)

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)**

IEEE Jack Neubauer Memorial Award (2018)
IEEE Heinrich Hertz Prize Paper Award (2018)
*IEEE Signal Processing Letters* Best Paper Award (2018)
Best Paper Award, IEEE Communications Society CSIM Technical Committee (2018)
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 - Selected)**

IEEE International Conference on Communications (Shanghai, 2019)
IEEE International Conference on Communications (Kansas City, 2018)
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**

State of Alabama Engineering Hall of Fame (inducted 2014)
Eminent Member, Eta Kappa Nu (elected 2008)
Distinguished Alumnus Award, Tau Beta Pi (2005)
Fellow, John Simon Guggenheim Memorial Foundation (selected 2002)
Distinguished Member Award, IEEE Control Systems Society (1994)

**OTHER PROFESSIONAL ACTIVITIES:**

**Principal Institutional Leadership**

Board of Directors, Hyster-Yale Materials Handling, Inc., 2017 - present
    Subsidiary boards: Bolzoni Holdings, Hyster-Yale Group & Nuvera Fuel Cells
Board of Managers, Swarthmore College, 2016 - present (Executive Committee, 2019 - 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 IEEE Activities (Past Five Years)**

Distinguished Lecturer, Vehicular Technology Society, 2018 - present
Communications Society Nominations and Elections Committee, 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

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

Editorial Board *Springer-Nature Computer Science*, 2019 - present
Editorial Board, *Frontiers of Information Technology & Electronic Engineering*, 2019-present
Editorial Board, *Harvard Data Science Review*, 2018 - present
Founding Co-Editor-in-Chief, *IET Smart Grid*, 2018 - 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
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
Editorial Advisory Board, *IEEE Spectrum*, 2017-18
Senior Editor, *IEEE Journal of Selected Topics in Signal Processing*, 2013-18
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

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

Guest Co-Editor (with Miaowen Wen, Zhiguo Ding, Ertugrul Basar, Yuanwei Liu, Fuhui Zhou, Ioannis Krikidis and Mojtaba Vaezi,). *IEEE Access - Special Section on Advances in Signal Processing for Non-Orthogonal Multiple Access*, under development for publication in 2019.

Guest Co-Editor (with Zheng Ma, Ming Xiao, Yue Xiao, Zhibo Pang and Branka Vucetic). *IEEE Internet of Things Journal - Issue on Low-latency High-reliability Communications for the Internet of Things*, under development for publication in 2019.

Guest Co-Editor (with Wen Ji, Wenwu Zhu, Christian Timmerer and Zhu Li). *IEEE Journal on Selected Areas in Communications - Multimedia Economics for Future Networks: Theory, Methods and Applications* (Vol. 37, No. 7, 2019)

Guest Co-Editor (with Maria Sabrina Greco, Silvija Kokalj-Filipovic George Stantchev and Liang Xiao). *IEEE Journal on Selected Topics in Signal Processing - Machine Learning for Cognition in Radio Communications and Radar* (Vol. 12, No. 1, 2019)

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 - Wireless Transmission of Information and Power - Part II* (Vol. 36, No. 2, 2019)

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 - Wireless Transmission of Information and Power - Part I* (Vol. 36, No. 1, 2019)

Guest Co-Editor (with Moe Z. Win, Michael Beuhrer, George Chrisikos and Andrea Conti), *Proceedings of the IEEE - Foundations and Trends in Localization Technologies, Parts I & II* (Vol. 106, Nos. 6 & 7, 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 Panayırcı). *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

Co-organizer, 2019 IEEE CNS Workshop on Physical-layer Methods for Security and Privacy in 5G and the IoT, IEEE Conference on Communications and Network Security, Washington, DC, June 11, 2019

General Co-chair, 5th International Workshop on Non-Orthogonal Multiple Access Techniques for 5G, IEEE International Conference on Communications, Shanghai, China, May 20 - 24, 2019

General Co-chair, 4th International Workshop on Non-Orthogonal Multiple Access Techniques for 5G, IEEE Global Communications Conference, Abu Dhabi, UAE, December 9 - 13, 2018

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

Program Co-Director, 52$^{nd}$ Conference on Information Sciences and Systems, Princeton University, Princeton, NJ, March 21 - 23, 2018

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 Committees, IEEE International Symposia on Information Theory: 2019 (Paris, upcoming), 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 "Data Analytics for Power Systems," at the 2019 IEEE Data Science Workshop, Minneapolis, MN, June 2 - 5, 2019

Steering Committee, Fifth London Symposium on Information Theory, London, UK, May 30 - 31, 2019

Steering Committee, 6th IEEE GLOBECOM Workshop on Trusted Communications with Physical Layer Security, IEEE Global Communications Conference, Abu Dhabi, UAE, December 9 -13, 2018

Technical Program Committee, 2018 International Conference on Network Games, Control and Optimization, New York, November 14 - 16, 2018

Technical Program Committee, 2018 International Symposium on Information Theory and its Applications (ISITA2018), Singapore, October 28 - 31, 2018

Technical Program Committee, 26th European Signal Processing Conference (EUSIPCO), Rome, Italy, September 3 - 7, 2018

Steering Committee, IEEE 5G World Forum, Santa Clara, CA, July 8 -10, 2018

Technical Program Committee, 2018 IEEE Statistical Signal Processing Workshop, Freiberg, Germany, June 10 - 13, 2018

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

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

**Other Recent (Past Five Years)**

Committee on Modernizing the U.S. Electricity System, National Academies of Sciences, Engineering and Medicine, 2019 - present

Chair, Academic Affairs Committee, Swarthmore College Board of Managers, 2019 - present

Engineering Advisory Council, Swarthmore College, 2019 - present

Engineering Advisory Council, Brown University, 2018 - present

Engineering Advisory Council, Purdue University, 2018 - present

Advisory Board, The Institute of Electronics, Communications and Information Technology, Queen's University Belfast, UK, 2018 - present

Advisory Committee, CTIF Global Capsule, Aarhus University, Denmark, 2018 - present

Newton International Fellowships Committee: Physical Sciences, Royal Society, 2017 - present

Board of Advisors, Schaefer School of Engineering and Science, Stevens Institute of Technology, 2017 - present

Advisory Board, Gordian Knot Analytics Group, LLC, 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, and the Max Planck Institute for Solid State Research, 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

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

Class III Temporary Nominating Group, National Academy of Sciences, 2017-19

Panelist, "Opportunities and Challenges in Applying IoT to Sustain Critical Urban Infrastructures," ACM International Conference on Distributed Computing and Networking, Bangalore, India, January 4 - 7, 2019

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

**Invited Seminars (Past Ten Years)**

Dean's Lecture, Rochester Institute of Technology, Rochester, NY (upcoming October 18, 2019)
Distinguished Lecture, University of Waterloo, Canada (June 14, 2019)
Distinguished Lecture, University of Arizona, Tucson, AZ (April 18, 2019)
Singapore University of Technology and Design (April 12, 2019)
Nanyang Technological Institute, Singapore (April 11, 2019)
Distinguished Lecture, University of Maryland, College Park (April 3, 2019)
Distinguished Lecture, University of Illinois at Urbana-Champaign (March 7, 2019)
California Institute of Technology (January 29, 2019)
Distinguished Lecture, University of Southern California (January 24, 2019)
Institute Lecture, Indian Institute of Technology - Delhi (January 8, 2019)
Indian Institute of Science, Bangalore (January 4, 2019)
ShanghaiTech, Shanghai, China (November 20, 2018)
Distinguished Lecture, Stony Brook University, Stony Brook, NY (August 24, 2018)
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, Hafai, 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)

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

**Current**

"A Unified View of Estimation and Information Relationships for Networks and Beyond," National Science Foundation Grant CCF-1908308 (with researchers from the Technion), award pending.

"Innovations in Mean-Field Game Theory for Scalable Computation and Diverse Applications," Air Force Office of Scientific Research MURI Grant FA9550-18-1-0502 (with researchers from UCLA, the University of Houston and the University of Maryland), July 20, 2018 - July 19, 2023.

"Local Topological Properties of Power Flow Networks, and Their Role in Power System Functionality," National Science Foundation Grant ECCS-1824710 (with researchers from the University of Texas at Dallas). August 15, 2018 - August 14, 2020.

"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.

"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.

**Previous (Past Fifteen Years)**

"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.

"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 17, 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.

"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 Poly-

technic 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 (Computer 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.

# PUBLICATIONS

**Books:**

*Advanced Data Analytics for Power Systems.* Edited, with Ali Tajer and Samir Perlaza. (Cambridge University Press, Cambridge, UK, 2020), to appear.

*Multiple Access Techniques for 5G Wireless Networks and Beyond.* Edited, with Mojtaba Vaezi and Zhiguo Ding. (Springer International Publishing, Cham, Switzerland, 2019).

*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 Hatziargyriou, 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 Publishers, 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 Hadjiliadis. (Cambridge University Press, Cambridge, UK, 2009)

*MIMO Wireless Communications.* With Ezio Biglieri, A. Robert Calderbank, Anthony G. Constantinides, Andrea Goldsmith and A. Paulraj. (Cambridge University Press, Cambridge, UK, 2007). [Japanese translation published by Tokyo Denki University Press, Tokyo, in 2009.] [Korean translation 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:**

"Smart Meter Privacy." With Giulio Giaconi and Deniz Gündüz. Chapter in *Advanced Data Analytics for Power Systems*, Ali Tajer, Samir Perlaza and H. Vincent Poor, Eds. (Cambridge University Press, Cambridge, UK, 2020), to appear.

"Graph-Theoretic Analysis of Power Grid Robustness." With Dorcas Ofori-Boateng, Asim Kumer Dey and Yulia Gel. Chapter in *Advanced Data Analytics for Power Systems*, Ali Tajer, Samir Perlaza and H. Vincent Poor, Eds. (Cambridge University Press, Cambridge, UK, 2020), to appear.

"Role of Data Analytics in Modern Power Systems." With Ali Tajer and Samir Perlaza. Chapter in *Advanced Data Analytics for Power Systems*, Ali Tajer, Samir Perlaza and H. Vincent Poor, Eds. (Cambridge University Press, Cambridge, UK, 2020), to appear.

"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, 2019), 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, 2019), 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, 2019), to appear.

Foreword to *Stochastic Disorder Problems*, Albert N. Shiryaev (Springer Nature, Cham, Switzerland, 2019), pp. v - vi.

"NOMA: An Information Theoretic Perspective," (with Mojtaba Vaezi). Chapter 5 in Multiple Access Techniques for 5G Wireless Networks and Beyond, Mojtaba Vaezi, Zhiguo Ding and H. Vincent Poor, Eds. (Springer International Publishing, Cham, Switzerland, 2019), pp. 167 - 193.

"Dynamic Social Networks: Search and Data Routing," (with Hazer Inaltekin). Chapter 23 in *Cooperative and Graph Signal Processing: Principles and Applications*, Petar M. Djurić and Cédric Richard, Eds. (Elsevier, Amsterdam, 2018), pp. 623 - 650.

"Data-Driven Approaches for Detecting and Identifying Anomalous Data Streams," (with Shaofeng Zou, Yingbin Liang and Xinghua Shi). Chapter 4 in *Signal Processing and Machine Learning for Biological Big Data*, Ervin Sejdić and Tiago H. Falk, Eds. (CRC Press, Boca Raton, FL, 2018), pp. 57 - 72.

"Privacy in Networks of Interacting Agents." Chapter 19 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), pp. 259 - 268.

"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, Yingin 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 Soummya 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 Soummya 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. (Spinger-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.

"Ultrawideband Geolocation," (with Sinan Gezici, Zafer Sahinoglu and Hisashi Kobayashi). Chapter 3 in *Ultra Wideband Wireless Communications*, H. Arslan, Z. N. Chen and M.-G. Di Benedetto, Eds. (Wiley: New York, 2006), pp. 43 - 76.

"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.

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"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.

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Foreword to the Classic Re-issue of *Introduction to Statistical Communication Theory*, by David Middleton (IEEE Press: New York, 1996).

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"Quadratic Detection of Signals with Drifting Phase," (with Venugopal V. Veeravalli). *Journal of the Acoustical Society of America*, Vol. 89, No. 2, pp. 811 - 819, February 1991.

"Efficient Estimation of the Class A Parameters Via the EM Algorithm," (with Serena M. Zabin). *IEEE Transactions on Information Theory*, Vol. 37, No. 1, pp. 60 - 72, January 1991.

"Nonlinear Techniques for Interference Suppression in Spread-Spectrum Systems," (with Rajiv Vijayan). *IEEE Transactions on Communications*, Vol. 38, No. 7, pp. 1060 - 1065, July 1990.

"An RKHS Approach to Robust $L^2$ Estimation and Signal Detection," (with Richard J. Barton). *IEEE Transactions on Information Theory*, Vol. 36, No. 3, pp. 579 - 588, May 1990.

"Recursive Algorithms for Identification of Impulsive Noise Channels," (with Serena M. Zabin). *IEEE Transactions on Information Theory*, Vol. 36, No. 3, pp. 559 - 578, May 1990.

"Detection of Broadband Signals in Signal-Dependent Noise," *Journal of the Acoustical Society of America*, Vol. 87, No. 3, pp. 1227 - 1230, March 1990.

"Parameter Estimation for Middleton Class A Interference Processes," (with Serena M. Zabin). *IEEE Transactions on Communications*, Vol. 37, No. 10, pp. 1042 - 1051, October 1989.

"An Analysis of Nonlinear Direct-sequence Correlators," (with Behnaam Aazhang). *IEEE Transactions on Communications*, Vol. 37, No. 7, pp. 723 - 731, July 1989.

"Fine Quantization in Signal Detection and Estimation," *IEEE Transactions on Information Theory*, Vol. 34, No. 5, pp. 960 - 972, September 1988.

"Signal Detection in Fractional Gaussian Noise," (with Richard J. Barton). *IEEE Transactions on Information Theory*, Vol. 34, No. 5, pp. 943 - 959, September 1988.

"Performance of DS/SSMA Communications in Impulsive Channels - Part II: Hard-limiting Correlation Receivers," (with Behnaam Aazhang). *IEEE Transactions on Communications*, Vol. 36, No. 1, pp. 88 - 97, January 1988.

"Single-user Detectors for Multi-user Channels," (with Sergio Verdú). *IEEE Transactions on Communications*, Vol. 36, No. 1, pp. 50 - 60, January 1988. [Also reprinted in *Wireless Applications of Spread Spectrum Systems*, S. Tantaratana and K. A. Ahmed, Eds. (IEEE Press: Piscataway, NJ, 1998).]

"Robust Matched Filters for Optical Receivers," (with Evaggelos A. Geraniotis). *IEEE Transactions on Communications*, Vol. COM-35, No. 12, pp. 1289 - 1296, December 1987.

"Performance Analysis of DS/SSMA Communications in Impulsive Channels - Part I: Linear Correlation Receivers," (with Behnaam Aazhang). *IEEE Transactions on Communications*, Vol. COM-35, No. 11, pp. 1179 - 1188, November 1987.

"Abstract Dynamic Programming Models under Commutativity Conditions," (with Sergio Verdú). *SIAM Journal on Control and Optimization*, Vol. 25, No. 4, pp. 990 - 1006, July 1987.

*"Uncertainty Tolerance in Underwater Acoustic Signal Processing," *IEEE Journal on Oceanic Engineering*, Vol. OE-12, No. 1, pp. 48 - 65, January 1987.

"Minimax Linear Smoothing for Capacities: The Case of Correlated Signals and Noise," *IEEE Transactions on Automatic Control*, Vol. AC-31, No. 9, pp. 877 - 878, September 1986.

"A Reduced-Complexity Quadratic Structure for the Detection of Stochastic Signals," (with Chein-I Chang). *Journal of the Acoustical Society of America*, Vol. 78, No. 5, pp. 1652 - 1657, November 1985.

"Minimax Discrimination for Observed Poisson Processes with Uncertain Rate Functions," (with Evaggelos Geraniotis). *IEEE Transactions on Information Theory*, Vol. IT-31, No. 5, pp. 660 - 669, September 1985.

"Asymptotic Relative Efficiencies of Multistage Detectors," (with Sawasd Tantaratana). *IEEE Transactions on Information Theory*, Vol. IT-31, No. 5, pp. 710 - 715, September 1985.

*"Robust Techniques for Signal Processing: A Survey," (with Saleem A. Kassam). *Proceedings of the IEEE*, Vol. 73, No. 3, pp. 433 - 481, March 1985.

"Robust Quantization of $\epsilon$-contaminated Data," *IEEE Transactions on Communications*, Vol. COM-33, No. 3, pp. 218 - 222, March 1985.

"On Optimum and Nearly Optimum Data Quantization for Signal Detection," (with Behnaam Aazhang). *IEEE Transactions on Communications*, Vol. COM-32, No. 7, pp. 745 - 751, July 1984.

"Minimax Linear Observers and Regulators for Stochastic Systems with Uncertain Second-order Statistics," (with Sergio Verdú). *IEEE Transactions on Automatic Control*, Vol. AC-29, No. 6, pp. 499 - 511, June 1984.

"On Minimax Robustness: A General Approach and Applications," (with Sergio Verdú). *IEEE Transactions on Information Theory*, Vol. IT-30, No. 2, pp. 328 - 340, March 1984.

"Robust Wiener-Kolmogorov Theory," (with Kenneth S. Vastola). *IEEE Transactions on Information Theory*, Vol. IT-30, No. 2, pp. 316 - 327, March 1984.

"On the p-point Uncertainty Class," (with Kenneth S. Vastola). *IEEE Transactions on Information Theory,* Vol. IT-30, No. 2, pp. 374 - 376, March 1984.

"Robust Matched Filters," *IEEE Transactions on Information Theory*, Vol. IT-29, No. 5, pp. 677 - 687, September 1983.

"Minimax Control of Linear Stochastic Systems with Noise Uncertainty," (with Douglas P. Looze, Kenneth S. Vastola and John C. Darragh). *IEEE Transactions on Automatic Control*, Vol. AC-28, No. 3, pp. 882 - 888, September 1983.

"Signal Selection for Robust Matched Filtering," (with Sergio Verdú). *IEEE Transactions on Communications*, Vol. COM-31, No. 5, pp. 667 - 670, May 1983.

"An Analysis of the Effects of Spectral Uncertainty on Wiener Filtering," (with Kenneth S. Vastola). *Automatica*, Vol. 19, No. 3, pp. 289 - 293, May 1983.

"Minimax Robust Discrete-time Matched Filters," (with Sergio Verdú). *IEEE Transactions on Communications*, Vol. COM-31, No. 2, pp. 208 - 215, February 1983.

"Robust Signal Processing for Communication Systems," (with Saleem A. Kassam). *IEEE Communications Magazine*, Vol. 21, No. 1, pp. 20 - 28, January 1983.

"Asymptotic Efficiencies of Truncated Sequential Tests," (with Sawasd Tantaratana). *IEEE Transactions on Information Theory,* Vol. IT-28, No. 6, pp. 911 - 923, November 1982.

"Signal Detection in the Presence of Weakly Dependent Noise - Part II: Robust Detection," *IEEE Transactions on Information Theory*, Vol. IT-28, No. 5, pp. 744 - 753, September 1982.

"Signal Detection in the Presence of Weakly Dependent Noise - Part I: Optimum Detection," *IEEE Transactions on Information Theory*, Vol. IT-28, No. 5, pp. 735 - 744, September 1982.

"On the Performance of Two Simplified Approaches to Memoryless Discrete Time Detection in Dependent Noise," (with Donald R. Halverson and Gary L. Wise). *Journal of Combinatorics, Information, and System Sciences*, Vol. 7, No. 3, pp. 171 - 179, September 1982.

"A State Estimation Algorithm for Linear Systems Driven Simultaneously by Wiener and Poisson Processes," (with Samuel P. Au and Abraham H. Haddad). *IEEE Transactions on Automatic Control*, Vol. AC-27, No. 3, pp. 617 - 626, June 1982.

"Minimax Linear Smoothing for Capacities," *Annals of Probability*, Vol. 10, No. 2, pp. 504 - 507, May 1982.

"A Relative Efficiency Study of Some Popular Detectors," (with Douglas L. Michalsky and Gary L. Wise). *Journal of the Franklin Institute*, Vol. 313, No. 3, pp. 135 - 148, March 1982.

"A Two-stage Version of the Kassam-Thomas Nonparametric Dead-zone Limiter Detection System," (with Sawasd Tantaratana). *Journal of the Acoustical Society of America*, Vol. 67, No. 1, pp. 110 - 115, January 1982.

"The Rate-distortion Function on Classes of Sources Determined by Spectral Capacities," *IEEE Transactions on Information Theory*, Vol. IT-28, No. 1, pp. 19 - 26, January 1982.

"The Segment Method as an Alternative to Minimax in Hypothesis Testing," (with Bruce H. Krogh). *Information Sciences*, Vol. 27, pp. 9 - 37, 1982.

"Minimax State Estimation for Linear Stochastic Systems with Noise Uncertainty," (with Douglas P. Looze). *IEEE Transactions on Automatic Control*, Vol. AC-26, No. 4, pp. 902 - 906, August 1981.

"Input Amplitude Compression in Digital Signal-detection Systems," (with Yousef Rivani). *IEEE Transactions on Communications*, Vol. COM-29, No. 5, pp. 707 - 710, May 1981.

"Optimum Memoryless Tests Based on Dependent Data," *Journal of Combinatorics, Information, and System Sciences,*Vol. 6, No. 2, pp. 111 - 122, 1981.

"Robust Decision Design Using a Distance Criterion," *IEEE Transactions on Information Theory*, Vol. IT-26, No. 5, pp. 575 - 587, September 1980.

"The Analysis and Design of Data Quantization Schemes for Stochastic Signal Detection Systems," (with Dimitrios Alexandrou). *IEEE Transactions on Communications*, Vol. COM-28, No. 7, pp. 983 - 991, July 1980.

"Memoryless Quantizer-Detectors for Constant Signals in $m$-Dependent Noise," (with John B. Thomas). *IEEE Transactions on Information Theory*, Vol. IT-26, No. 4, pp. 423 - 432, July 1980.

"On Robust Wiener Filtering," *IEEE Transactions on Automatic Control*, Vol. AC-25, No. 3, pp. 531 - 536, June 1980.

"A General Relationship between Two Quantizer Design Criteria," (with Dimitrios Alexandrou). *IEEE Transactions on Information Theory*, Vol. IT-26, No. 2, pp. 210 - 212, March 1980.

"Minimum-Distortion Functional for One-Dimensional Quantisation," *Electronics Letters*, Vol. 16, pp. 23 - 25, January 1980.

"On Robust Detection of Discrete-Time Stochastic Signals," (with Mohamed Mami and John B. Thomas). *Journal of the Franklin Institute*, Vol. 309, No. 1, pp. 29 - 53, January 1980.

"Memoryless Discrete-Time Detection of a Constant Signal in $m$-Dependent Noise," (with John B. Thomas). *IEEE Transactions on Information Theory*, Vol. IT-25, No. 1, pp. 54 - 61, January 1979.

"Asymptotically Robust Quantization for Detection," (with John B. Thomas). *IEEE Transactions on Information Theory*, Vol. IT-24, No. 2, pp. 222 - 229, March 1978.

"Locally-Optimum Detection of Discrete-Time Stochastic Signals in Non-Gaussian Noise," (with John B. Thomas). *Journal of the Acoustical Society of America*, Vol. 63, No. 1, pp. 75 - 80, January 1978.

"Applications of Ali-Silvey Distance Measures in the Design of Generalized Quantizers for Binary Decision Systems," (with John B. Thomas). *IEEE Transactions on Communications*, Vol. COM-25, No. 9, pp. 893 - 900, September 1977.

"Optimum Quantization for Local Decisions Based on Independent Samples," (with John B. Thomas). *Journal of the Franklin Institute*, Vol. 303, No. 6, pp. 549 - 561, June 1977. [Also reprinted in *Benchmark Papers in Electrical Engineering and Computer Science: Quantization*, P.F. Swaszek, Ed. (Dowden, Hutchinson & Ross: Stroudsburg, PA, 1985).]

**Invited Plenary and Keynote Addresses:**

"Learning at the Edge." To be presented at the *Second IEEE 5G Workshop on Tactical and First Responder Networks*, Laurel, MD, October 7, 2019.

"Machine Learning Meets Mobile Communications." To be presented at the *30th Annual IEEE International Symposium on Personal, Indoor and Mobile Radio Communication*, Istanbul, Turkey, September 8 - 11, 2019.

"Fundamentals for IoT Networks: Secure and Low-Latency Communications." Presented at the *IEEE International Conference on Communications*, Shanghai, China, May 20 - 24, 2019.

"Fundamentals for IoT Networks: Secure and Low-Latency Communications." Presented at the *ACM International Conference on Distributed Computing and Networking*, Bangalore, India, January 4 - 7, 2019.

"Security in the Internet of Things: Information Theoretic Insights." Presented at the *6th IEEE Global Symposium on Signal and Information Processing*, Anaheim, CA, November 26 - 29, 2018.

"Fundamentals for Low Latency Communications." Presented at the *52nd Annual Asilomar Conference on Signals, Systems, and Computers*, Pacific Grove, CA, October 28 - 31, 2018.

"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 6$^{th}$ *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):**

*"Learning at the Edge." Presented at the *IEEE Training School on Machine Learning Learning for Communications*, Paris, France, September 23 - 25, 2019.

"Properties of the Conditional Mean Estimator in Poisson Noise," (with Alex Dytso). *Proceedings of the IEEE Information Theory Workshop*, Visby, Sweden, August 25 - 28, 2019, to appear.

"Estimation of Bounded Normal Mean: An Alternative Proof for the Discreteness of the Least Favorable Prior," (with Semih Yagli and Alex Dytso). *Proceedings of the IEEE Information Theory Workshop*, Visby, Sweden, August 25 - 28, 2019, to appear.

"Coding for Non-IID Sources and Channels: Entropic Approximations and a Question of Ahlswede," (with Holger Boche and Rafael F. Schaefer). *Proceedings of the IEEE Information Theory Workshop*, Visby, Sweden, August 25 - 28, 2019, to appear.

"On the Structure of the Capacity Formula for General Finite State Channels with Applications," (with Holger Boche and Rafael F. Schaefer). *Proceedings of the IEEE Information Theory Workshop*, Visby, Sweden, August 25 - 28, 2019, to appear.

"On the Time-Varying Distributions of Online Stochastic Optimization," (with Xuanyu Cao and Junshan Zhang). *Proceedings of the 2019 American Control Conference*, Philadelphia, PA, July 10 - 12, 2019, to appear.

"Variable-length Compression and Secrecy by Design," (with Yanina Y. Shkel and Rick S. Blum). *Proceedings of the 2019 IEEE International Symposium on Information Theory*, Paris, France, July 7 - 12, 2019, to appear.

"Using Erasure Feedback for Online Timely Updating with an Energy Harvesting Sensor," (with Ahmed Arafa, Jing Yang and Sennur Ulukus). *Proceedings of the 2019 IEEE International Symposium on Information Theory*, Paris, France, July 7 - 12, 2019, to appear.

"An Upper Bound on the Number of Mass Points in the Capacity Achieving Distribution for the Amplitude Constrained Additive Gaussian Channel," (with Semih Yagli, Alex Dytso and Shlomo Shamai). *Proceedings of the 2019 IEEE International Symposium on Information Theory*, Paris, France, July 7 - 12, 2019, to appear.

"Identification Capacity of Correlation-Assisted Discrete Memoryless Channels: Analytical Properties and Representations," (with Holger Boche and Rafael Schaefer). *Proceedings of the 2019 IEEE International Symposium on Information Theory*, Paris, France, July 7 - 12, 2019, to appear.

"On Estimation under Noisy Order Statistics," (with Alex Dytso, Martina Cardone and Mishfad S. Veedu). *Proceedings of the 2019 IEEE International Symposium on Information Theory*, Paris, France, July 7 - 12, 2019, to appear.

"Robust Power Allocation for Approximately Gaussian Inputs," (with Wei Cao, Alex Dytso, Michael Fauß and Gang Feng). To be presented at the *IEEE International Symposium on Information Theory*, Paris, France, July 7 - 12, 2019.

*"Turing Meets Shannon: On the Algorithmic Computability of the Capacities of Secure Communication Systems," (invited thematic paper, with Rafael F. Schaefer and Holger Boche). *Proceedings of the 20th IEEE Workshop on Signal Processing Advances in Wireless Communications*, Cannes, France, July 2 - 5, 2019, to appear.

"Tight Bounds on the Weighted Sum of MMSEs with Applications in Distributed Estimation," (with Michael Fauß, Abdelhak M. Zoubir, Alex Dytso and Nagananda Kyatsandra). *Proceedings of the 20th IEEE Workshop on Signal Processing Advances in Wireless Communications*, Cannes, France, July 2 - 5, 2019, to appear.

*"On Ultra-Reliable and Low Latency Simultaneous Information and Energy Transmission Systems," (with Nizar Khalfet, Samir M. Perlaza and Ali Tajer). *Proceedings of the 20th IEEE Workshop on Signal Processing Advances in Wireless Communications*, Cannes, France, July 2 - 5, 2019, to appear.

"How to Price Fresh Data," (with Meng Zhangy, Ahmed Arafa and Jianwei Huang). *Proceedings of the International Symposium on Modeling and Optimization of Mobile, Ad Hoc, and Wireless Networks (WiOpt 2019)*, Avignon, France, June 3 - 7, 2019, to appear.

"Fundamentals for Low Latency Communications." Presented at the *Princeton-TAMU Symposium on Quantum Engineering and Technology*, Princeton, NJ, June 20 - 22, 2019.

\*"Learning at the Edge." Presented at the *Information Modeling, Analysis, and Control of Complex Systems Workshop*, Ohio State University, Columbus, OH, June 3 - 4, 2019.

\*"Resilience of the Texas Power Grid Network," (with Dorcas Ofori-Boateng, Asim Kumer Dey, Yulia R. Gel, Binghui Li and Jie Zhang). *Proceedings of the 2019 IEEE Data Science Workshop*, Minneapolis, MN, June 2 - 5, 2019.

"Graph Topology Learning and Signal Recovery Via Bayesian Inference," (with Mahmoud Ramezani-Mayiami, Mohammad Hajimirsadeghi, Karl Skretting and Rick S. Blum). *Proceedings of the 2019 IEEE Data Science Workshop*, Minneapolis, MN, June 2 - 5, 2019.

"Learning Requirements for Stealth Attacks," (with Ke Sun, Iñaki Esnaola and Antonia M. Tulino). Presented at the Fifth London Symposium on Information Theory, London, UK, May 30 - 31, 2019.

"Sum-Capacity of the MIMO Gaussian Many-Access Channel," (with Wei Cao, Alex Dytso, Yanina Shkel and Gang Feng). *Proceedings of the IEEE International Conference on Communications*, Shanghai, China, May 20 - 24, 2019.

"Impact of Strong Spatial Correlation on the Capacity Scaling of Massive MIMO," (with Junyoung Nam, Giuseppe Caire and Mérouane Debbah). *Proceedings of the IEEE International Conference on Communications*, Shanghai, China, May 20 - 24, 2019.

"Statistical Delay-Bounded QoS Provisioning Over 5G Multimedia Mobile Wireless Networks in the Finite Blocklength Regime," (with Xi Zhang and Jingqing Wang). *Proceedings of the IEEE International Conference on Communications*, Shanghai, China, May 20 - 24, 2019.

"Coded Caching under Heterogeneous User Preferences: An Effective Throughput Perspective," (with Yawei Lu and Wei Chen). *Proceedings of the IEEE International Conference on Communications*, Shanghai, China, May 20 - 24, 2019.

"Outage Analysis of Distributed CDD Systems with Mixture Interference," (with Kyeong Jin Kim, Hongwu Liu, Marco Di Renzo, Theodoros A. Tsiftsis and Philip V. Orlik). *Proceedings of the IEEE International Conference on Communications*, Shanghai, China, May 20 - 24, 2019.

"Non-Asymptotic Performances for Finite Blocklength Coding Over Nakagami-$m$ Channels," (with Xi Zhang and Qixuan Zhu). *Proceedings of the IEEE International Conference on Communications*, Shanghai, China, May 20 - 24, 2019.

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"Method and Apparatus for High-Resolution Tracking Via Mono-Pulse Beam-Forming in a Communication System," (with Louis R. Brothers, Jr., et al.). U. S. Patent No. 6,930,637. Issued August 16, 2005. [Assigned to Texas Instruments.]

**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)

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*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 (formerly with Princeton University)

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

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