

Curriculum Vitae

I. Personal Information

Name: **Yindi Jing**

Address: Department of Electrical and Computer Engineering,
University of Alberta,
Edmonton, AB, T6G 2V4 Canada

E-mail: yindi@ualberta.ca

Telephone: 780-492-9286

Professional Engineering Status: PEng (Date of licensure: August, 2012).

Education

Ph.D., Electrical Engineering, 2004

California Institute of Technology

Thesis: Space-time code design and its applications in wireless networks

Advisors: Dr. John C. Doyle and Dr. Babak Hassibi

M.Sc., Electrical Engineering, 2000

California Institute of Technology

Advisor: Dr. John C. Doyle

M.Eng., Control Theory and Control Engineering, 1999

University of Science and Technology of China

B.Eng., Automation, 1996

University of Science and Technology of China

Appointments

Associate Professor, July 2014 - Now

Department of Electrical and Computer Engineering, University of Alberta

Assistant Professor, August 2008 – June 2014

Department of Electrical and Computer Engineering, University of Alberta

Post-Doctoral Researcher, February 2006 – June 2008

Department of Electrical Engineering and Computer Science, University of California, Irvine

Post-Doctoral Researcher, October 2004 – August 2005

Department of Electrical Engineering, California Institute of Technology

II. Teaching

Teaching Initiative and Contributions

- **New courses initiated**
 - **ECE 540/ECE 740 A2/ECE 780 A3 Detection and Estimation** (graduate level course)
 - **ECE 780 MIMO Communications** (graduate level course)
- **Remodeled courses**

- ECE 380 Introduction to Communication systems (3rd year core course)
- ECE 342 Probability for Electrical and Computer Engineers (3rd year core course)
- ECE 485/E E 485 Digital Communications (4th year technical elective course)
- Other course
 - ECE 240/E E 238 Continuous-Time Signals and Systems (2nd year core course)

Teaching Experience and Evaluations

Course code	Course Title	Term	Enrollment	ESRI median
ECE 380 B3	Introduction to Communication Systems	Winter 2017	51	4.6
ECE 540	Detection and Estimation	Fall 2016	12	4.9
ECE 342 A2	Probability for Electrical and Computer Engineers	Fall 2016	71	4.6
ECE 342 J2	Probability for Electrical and Computer Engineers Seminar	Fall 2016	71	4.6
N/A	Introduction to Detection and Estimation A short course taught at <i>Southeast University</i> , Nanjing, China during sabbatical (<u>16 lecture hours</u>)	Fall 2015	73	N/A
ECE 240 B1	Continuous-Time Signals and Systems	Winter 2015	57	4.7
ECE 240 J1	Continuous-Time Signals and Systems Seminar	Winter 2015	57	4.7
ECE 485	Digital Communications	Winter 2015	29	4.7
ECE 540	Detection and Estimation	Fall 2014	13	4.8
ECE 240 B1	Continuous-Time Signals and Systems	Winter 2014	75	4.7
ECE 240 J1	Continuous-Time Signals and Systems Seminar	Winter 2014	75	4.7
ECE 485	Digital Communications	Winter 2014	7	N/A
ECE 540	Detection and Estimation	Fall 2013	18	4.8
ECE 240 B1	Continuous-Time Signals and Systems	Winter 2013	67	4.7
ECE 240 J1	Continuous-Time Signals and Systems Seminar	Winter 2013	67	4.7
ECE 485	Digital Communications	Winter 2013	15	4.9
ECE 540	Detection and Estimation	Fall 2012	19	4.8
E E 238 B1	Continuous-Time Signals and Systems	Winter 2012	69	4.8
E E 238 J1	Continuous-Time Signals and Systems Seminar	Winter 2012	69	4.8
E E 485	Digital Communications	Winter 2012	14	4.3
ECE 740 A3	Detection and Estimation	Fall 2011	21	4.8
E E 238 B2	Continuous-Time Signals and Systems	Winter 2011	75	4.5
E E 238 J2	Continuous-Time Signals and Systems Seminar	Winter 2011	75	4.5
E E 485	Digital Communications	Winter 2011	10	4.63
ECE 780 A2	Detection and Estimation	Fall 2010	12	5.0
E E 238 B2	Continuous-Time Signals and Systems	Winter 2010	96	4.1
E E 238 J2	Continuous-Time Signals and Systems Seminar	Winter 2010	96	4.1
E E 485	Digital Communications	Winter 2010	10	3.6
E E 238 B3	Continuous-Time Signals and Systems	Winter 2009	39	4.1
E E 238 J3	Continuous-Time Signals and Systems Seminar	Winter 2009	39	4.1

Supervision of Postdoctoral Fellows and Graduate Students

Supervised Postdoctoral Fellows (including visiting scholars)

- **Qingfeng Ding** (100% supervision). February 2017-February 2018.
Project: Massive MIMO with low-complexity and low-cost hardware.
Publication: 1 journal paper submitted.
- **Godfrey Okeke** (100% supervision). June 2015 – August 2015.
Project: Interference mitigation and user-relay association in cooperative MIMO cellular uplink with non-regenerative relays.
- **Dan Wang** (100% supervision). November 2013-November 2014.
Project: Power allocation and optimization in channel training for cooperative relay networks.
Publication: 1 journal paper and 1 conference paper.

Finished Ph.D. Students

- **Qian Wang** (100% supervision).
Started: September 2011. Defense: August 2016.
Thesis title: Asymptotic performance analysis and transmission design for large-scale relay networks.
Publications: 3 journal papers and 3 conference papers.
- **Godfrey Okeke** (co-supervised with Dr. W. Krzymien).
Started: September 2009. Defense: April 2015.
Thesis title: Coverage and throughput enhancement in MIMO cellular networks via cooperative relaying.
Publications: 2 journal papers and 2 conference papers.
- **Qian Cao** (co-supervised with Dr. V. Zhao).
Started: September 2009. Defense: December 2013.
Thesis title: Game theoretic power allocation in multi-user wireless cooperative systems.
Publications: 3 journal papers and 2 conference papers.
- **Gencheng Guo** (co-supervised with Dr. M. Mandal).
Start: September 2016. Under my supervision since April 2011. Defense: September 2012.
Thesis title: Robust signal detection in nonGaussian noise using threshold system and bistable system.
Publications (co-authored with me): 2 journal papers.
- **Lukasz Krzymien** (co-supervised with Dr. C. Schlegel).
Started: September 2003. Defense: March 2011.
Thesis title: Iterative receivers for interference dominated environments.

Finished M.Sc. Students

- **Chi Feng** (100% supervision).
Started: September 2012. Accepted as Ph.D. and transferred to M.Sc. in May 2016. Defense: June 2016.
Thesis title: Interference analysis and massive MIMO downlink with MRT precoding and applications in performance analysis.
Publications: 1 journal paper and 1 conference paper.
- **Benzhe Li** (co-supervised with Dr. Wilsun Xu).

Started: September 2013. Defense: June 2016.

Thesis title: Fault detection method for utility equipment condition monitoring.

Publications: 1 journal paper.

- **Wuhua Zhang** (co-supervised with Dr. M. Ardakani)

Started: September 2013. Defense: September 2015

Thesis title: Partial zero forcing for multi-way relay networks.

Publications: 1 conference paper.

- **Tao Cui** (100% supervision).

Started: September 2012. Defense: August 2014.

Thesis title: SVD-based estimation and rank detection for reduced-rank MIMO channel.

Publications: 1 conference paper.

- **Chunyan Wu** (100% supervision).

Started: September 2011. Defense: December, 2013.

Thesis title: Power allocation in training for amplify-and-forward relay networks.

Publications: 1 journal paper and 2 conference papers.

- **Yichen Hao** (100% supervision)

Started: September 2011. Defense: September 2013.

Thesis title: Energy efficient relay network design using power-normalized SNR.

Publications: 1 journal paper and 2 conference papers.

- **Sun Sun** (100% supervision)

Started: September 2009. Defense: August 2011.

Thesis title: Channel training and decodings for MIMO relay networks.

Publications: 2 journal papers and 2 conference papers.

Current Ph.D. Students

- **Ying Xiong** (co-supervised with Dr. T. Chen).

Started: September 2014. Candidacy exam: April 2017.

Project: Abnormality detection monitoring for industrial facilities.

Publication: 1 journal paper (submitted) and 1 conference paper.

- **Edgar Amazonas** (co-supervised with Dr. Wilsun Xu)

Started: September 2015.

Project: Fault detection and classification for power monitoring systems in smart grid.

- **Samira Rahimian** (co-supervised with Dr. M. Ardakani)

Started: September 2016.

Project: Multi-way relaying in massive MIMO systems.

Current M.Sc. Student

- **Sun Lin** (100% supervision).

Started: September 2016.

Project: Precoding design for massive MIMO with hardware limits.

Supervised Visiting Ph.D. Graduate Students

- **Cheng Zhang**

Project: Statistical beamforming and low-complexity massive MIMO design and performance analysis.

Publications: 2 journal papers and 1 conference paper; 2 more journal papers submitted.

- **Paleerat Wongchampa**

Project: Beamforming for multi-user MIMO and its lab test.

- **Wenhai Zhang** (co-supervised with Dr. W. Xu)

Project: Detection of arcing fault.

Publications: 2 journal papers.

- **Ang Yang**

Project: Performance analysis of distributed massive MIMO system with circulant structure.

Publications: 1 journal paper.

Undergraduate Students Supervised

Name	Supervising Period	Project Title
Michelle Hauer	Nov. 2012-Apr. 2013	Effect of channel estimation error on relay selection in cooperative relay networks
Xihui Liu	Dec. 2015 – Feb. 2016	A Low-Complexity Precoding Scheme for Two-User Massive MIMO Downlink

III. Publications

Citation numbers are based on scholar.google.com. Journal impact factors are the 5-year impact factors according to JCR website. All numbers are as of July 7, 2017.

Citation Profile Summary

Database	h-index	TotalCitation	Citation since 2008	Citation since 2011
scholar.google.com	26	4312	4023	2925

Refereed Journal Publications (*Trained HQP names are bolded*)

- (a1) **Q. Ding** and Y. Jing, "Receiver energy efficiency and resolution profile design for massive MIMO uplink with mixed-ADC," *IEEE Transactions on Vehicular Technology*, Accepted on October 13, 2017.
- (a2) **Y. Xiong**, Y. Jing, T. Chen, "Sensitivity analysis and sensitivity-based design for linear alarm filters," *Control Practice Engineering*, September 2017. Accepted.
- (a3) **C. Zhang**, Y. Huang, Y. Jing, and L. Yang, "Power Efficient Hybrid Beamforming for Massive MIMO Public Channel," *IEEE Transactions on Vehicular Technology*, vol. 66, 10595-10600, November 2017.
- (a4) **C. Zhang**, Y. Jing, Y. Huang, and L. Yang, "Performance scaling law for multi-cell multi-user massive MIMO with MRT," Submitted to *IEEE Transactions on Vehicular Technology*, vol. 66, 9890-9903, November 2017.
- (a5) **Q. Wang** and Y. Jing, "Performance analysis and scaling law of MRC/MRT relaying with CSI error in massive MIMO systems," *IEEE Transactions on Wireless Communications*, vol. 16, pp. 5882-5896, September 2017. (*Impact factor:3.160, Citation: 3.*)

- (a6) C. Xing, Y. Jing, and Y. Zhou, "On weighted MSE model for MIMO transceiver optimization," *IEEE Transactions on Vehicular Technology*, vol. 66, pp. 7072-7085, August 2017. (Impact factor:2.631, Citation: 1)
- (a7) **W. Zhang**, X. Xiao, K. Zhou, W. Xu, and Y. Jing, "Multicycle incipient fault detection and location for medium voltage underground cable," *IEEE Transactions on Power Delivery*, vol. 32, pp. 1450-1459, June 2017. (Impact factor:2.464, Citation:0)
- (a8) **C. Zhang**, Y. Huang, Y. Jing, S. Jin, and L. Yang, "Sum-rate analysis for massive MIMO downlink with joint statistical beamforming and user scheduling," *IEEE Transactions on Wireless Communications*, vol. 16, pp. 2181-2194, April 2017. (Impact factor:3.160, Citation: 2)
- (a9) **B. Li**, Y. Jing, and W. Xu, "A generic waveform abnormality detection method for utility equipment condition monitoring," *IEEE Transactions on Power Delivery*, vol. 32, pp. 162-171, February 2017. (Impact factor:2.464, Citation:0)
- (a10) **W. Zhang**, Y. Jing, and X. Xiao, "Model-based general arcing fault detection in medium voltage distribution lines," *IEEE Transactions on Power Delivery*, vol. 31, pp. 2231-2241, October 2016. (Impact factor:2.464, Citation: 1)
- (a11) **W. Tan**, S. Jin, C.-K. Wen, and Y. Jing, "Spectral efficiency of mixed-ADC receivers for massive MIMO systems," *IEEE Access*, vol.4, pp. 7841-7846, 2016. (Impact factor:1.276, Citation: 8)
- (a12) **C. Feng**, Y. Jing, and S. Jin, "Interference and outage probability analysis for massive MIMO downlink with MF precoding," *IEEE Signal Processing Letters*, vol. 23, pp. 366-370, March 2016. (Impact factor: 1.852, Citation:10)
- (a13) **Q. Wang** and Y. Jing, "Closed-form average SNR and ergodic capacity approximations for best relay selection," *IEEE Transactions on Vehicular Technology*, vol. 65, pp. 2827-2833, April 2016. (Impact factor:2.631, Citation:2)
- (a14) **Q. Wang** and Y. Jing, "New rank-detection methods for reduced-rank MIMO systems," *EURASIP Journal on Wireless Communications and Networking*, 2015, DOI: 10.1186/s13638-015-0457-4, URL: <http://www.jwcn.eurasipjournals.com/content/2015/1/230>. (Impact factor:0.770, Citation: 2)
- (a15) **A. Yang**, Y. Jing, C. Xing, Z. Fei, and J. Kuang, "Performance analysis and location optimization for massive MIMO systems with circularly distributed antennas," *IEEE Transactions on Wireless Communications*, vol. 14, pp. 5659-5671, October, 2015. (Impact factor:3.160, Citation: 26)
- (a16) **Q. Cao**, Y. Jing, and H. Zhao, "Iterative double auction-based power allocation in multi-user cooperative networks", *IEEE Transactions on Vehicular Technology*, vol. 64, pp. 4298-4303, September 2015. (Impact factor: 2.631, Citation: 2)
- (a17) **G. Okeke**, W. A. Krzymien, Y. Jing, and J. Melzer, "A novel low-complexity joint user-relay selection and association for multi-user multi-relay MIMO uplink," *IEEE Wireless Communications Letters*, vol. 3, pp.309-312, June 2015. (Impact factor: N/A, Citation:3)
- (a18) **C. Wu, D. Wang**, and Y. Jing, "MSE and outage probability based training power allocations for relay networks," *IEEE Transactions on Communications*, vol. 62, pp. 2260-2270, July 2014. (Impact factor: 2.192, Citation: 4)
- (a19) **Y. Hao**, Y. Jing and S. Shahbazpanahi, "Energy efficient network beamforming design using power-normalized SNR," *IEEE Transactions on Wireless Communications*, vol. 12, pp. 2756-2769, May 2014. (Impact factor: 3.160, Citation: 5)

- (a20) **S. Atapattu**, Y. Jing, H. Jiang, and C. Tellambura, "Relay selection and performance analysis in multiple-user networks," *IEEE Journal on Selected Areas in Communications*, vol. 31, pp. 1517-1529, August 2013. (Impact factor: 4.149, Citation: 37)
- (a21) **Q. Cao**, Y. Jing, and V. Zhao, "Power allocation in multi-user wireless relay networks through bargaining," *IEEE Transactions on Wireless Communications*, vol. 12, pp. 2870-2882, June 2013. (Impact factor: 3.160, Citation: 40)
- (a22) **S. Atapattu**, Y. Jing, H. Jiang, and C. Tellambura, "Relay selection schemes and performance analysis approximations for two-way networks," *IEEE Transactions on Communications*, vol. 61, pp. 987-998, March 2013. (Impact factor: 2.192, Citation: 82)
- (a23) **G. Guo**, X. Yu, Y. Jing, and M. Mandal, "Optimal design of noise-enhanced binary threshold detector under AUC measure," *IEEE Signal Processing Letters*, vol. 20, pp. 161-164, February 2013. (Impact factor: 1.852, Citation: 6)
- (a24) **G. Okeke**, W. Krzymien and Y. Jing, "Beamforming in non-regenerative MIMO broadcast relay networks," *IEEE Transactions on Signal Processing*, vol. 60, pp. 6641-6654, December 2012. (Impact factor: 3.157, Citation: 19)
- (a25) Y. Jing and S. Shahbazpanahi, "Max-min optimal joint power control and distributed beamforming for two-way relay networks under per-node power constraints," *IEEE Transactions on Signal Processing*, vol. 60, pp. 6576-6589, December 2012. (Impact factor: 3.157, Citation: 56)
- (a26) **G. Guo**, M. Mandal, and Y. Jing, "A robust detector of known signal in non-Gaussian noise using parallel threshold systems," *Signal Processing*, vol. 92, pp. 2676-2688, November 2012. (Impact factor: 2.143, Citation: 16)
- (a27) **Q. Cao**, V. Zhao, and Y. Jing, "Power allocation and pricing in multi-user relay networks using Stackelberg and bargaining games," *IEEE Transactions on Vehicular Technology*, vol. 61, pp. 3177-3190, September 2012. (Impact factor: 2.632, Citation: 44)
- (a28) Y. Jing and X. Yu, "ML-based channel estimations for non-regenerative MIMO relay networks with multiple transmit and receive antennas," *IEEE Journal on Selected Areas in Communications*, vol. 30, pp. 1428-1439, August 2012. (Impact factor: 4.149, Citation: 38)
- (a29) **S. Sun** and Y. Jing, "Training and decoding for cooperative network with multiple relays and receive antennas," *IEEE Transactions on Communications*, vol. 60, pp. 1534-1544, June 2012. (Impact factor: 2.192, Citation: 20)
- (a30) **S. Sun** and Y. Jing, "Channel training design in amplify-and-forward MIMO relay networks," *IEEE Transactions on Wireless Communications*, vol. 10, pp. 3380-3391, October 2011. (Impact factor: 2.744, Citation: 38)
- (a31) **L. Li**, Y. Jing, and H. Jafarkhani, "Multi-source transmission for wireless relay networks with linear complexity," *IEEE Transactions on Signal Processing*, vol. 59, pp. 2898-2912, June 2011. (Impact factor: 3.157, Citation: 10)
- (a32) **L. Li**, Y. Jing, and H. Jafarkhani, "Interference cancellation at the relay for multi-user wireless cooperative networks," *IEEE Transactions on Wireless Communications*, vol. 10, pp. 930-939, March 2011. (Impact factor: 3.160, Citation: 29)
- (a33) **S. Talwar**, Y. Jing, and S. Shahbazpanahi, "Joint relay selection and power allocation for two-way relay networks," *IEEE Signal Processing Letters*, vol. 18, pp. 91-94, February 2011. (Impact factor: 1.852, Citation: 150)

- (a34) Y. Jing and H. Jafarkhani, "Relay power allocation in distributed space-time coded networks with channel statistical information," *IEEE Transactions on Wireless Communications*, vol. 10, pp. 443-449, February 2011. (Impact factor: 3.160, Citation: 25)
- (a35) Y. Jing, "Combination of MRC and distributed space-time coding in networks with multiple-antenna relays," *IEEE Transactions on Wireless Communications*, vol. 9, pp. 2550-2559, August 2010. (Impact factor: 3.160, Citation: 17)
- (a36) Y. Jing and H. Jafarkhani, "Network beamforming using relays with perfect channel information," *IEEE Transactions on Information Theory*, vol. 55, pp. 2499-2517, June 2009. (Impact factor: 2.350, Citation: 387)
- (a37) Y. Jing and H. Jafarkhani, "Single and multiple relay selection schemes and their achievable diversity orders," *IEEE Transactions on Wireless Communications*, vol. 8, pp. 1414-1423, March 2009. (Impact factor: 3.160, Citation: 659)
- (a38) E. Koyuncu, Y. Jing, and H. Jafarkhani, "Distributed beamforming in wireless relay networks with quantized feedback," *IEEE Journal on Selected Areas in Communications*, vol. 26, pp. 1429-1439, October 2008. (Impact factor: 4.149, Citation: 124)
- (a39) Y. Jing and H. Jafarkhani, "Distributed differential space-time coding for wireless relay networks," *IEEE Transactions on Communications*, vol. 56, pp. 1092-1100, July 2008. (Impact factor: 2.192, Citation: 157)
- (a40) Y. Jing and B. Hassibi, "Diversity analysis of distributed space-time codes in relay networks with multiple transmit/receive antennas," *EURASIP Journal on Advances in Signal Processing*, 17 pages, 2008. (Impact factor: 0.940, Citation: 67)
- (a41) Y. Jing and H. Jafarkhani, "Using orthogonal and quasi-orthogonal designs in wireless relay networks," *IEEE Transactions on Information Theory*, vol. 53, pp. 4106-4118, November 2007. (Impact factor: 2.350, Citation: 356)
- (a42) Y. Jing and B. Hassibi, "Distributed space-time coding in wireless relay networks," *IEEE Transactions on Wireless Communications*, vol. 5, pp. 3524-3536, December 2006. (Impact factor: 3.160, Citation: 1107)
- (a43) Y. Jing and B. Hassibi, "Three-transmit-antenna space-time codes based on SU(3)," *IEEE Transactions on Signal Processing*, vol. 53, pp. 3688-3702, October 2005. (Impact factor: 3.157, Citation: 34)
- (a44) Y. Jing and B. Hassibi, "Design of fully-diverse multiple-antenna codes based on Sp(2)," *IEEE Transactions on Information Theory*, vol. 50, pp. 2639-2656, November 2004. (Impact factor: 2.350, Citation: 33)
- (a45) Y. Jing and B. Hassibi, "Unitary space-time modulation via Cayley transform," *IEEE Transactions on Signal Processing*, vol. 51, pp. 2891-2904, November 2003. (Impact factor: 3.157, Citation: 53)

Journal Papers Submitted (HQP names are bolded)

- (b1) **C. Zhang**, Y. Jing, Y. Huang, and L. Yang, "Performance analysis for massive MIMO downlink with low complexity approximate zero-forcing precoding," Submitted to *IEEE Transactions on Communications*, October 2017.
- (b2) **S. Rahimian, W. Zhang**, M. Noori, Y. Jing, and M. Ardakani, "Partial zero forcing for multi-way relay networks," submitted to *IEEE Transactions on Wireless Communications*, October, 2017.

- (b3) **C. Zhang**, Y. Jing, Y. Huang, and L. Yang, "Interleaved training and training-based transmission design for hybrid massive antenna downlink," submitted to *IEEE Journal of Selected Topics in Signal Processing*, September 2017.
- (b4) S. Atapattu, N. Ross, Y. Jing, Y. He, and J. Evans, "Physical-layer security in full-duplex multi-hop multi-user wireless network with relay selection," submitted to *IEEE Journal on Selected Areas on Communications*, August 2017.
- (b5) Y. Huang, **C. Zhang**, J. Wang, Y. Jing, and L. Yang, "Signal processing for MIMO-NOMA: Present and future challenges," Submitted to *IEEE Wireless Communications Magazine*, March 2017.
- (b6) C. Xing, Y. Jing, S. Wang, J. Wang, and J. An, "A general framework for covariance matrix optimization in MIMO systems," Submitted to *IEEE Transactions on Wireless Communications*, November 2017.

Refereed Conference Papers *(Trained HQP names are bolded. Presenter names are underlined.)*

- (c1) **C. Zhang**, Y. Jing, Y. Huang, and L. Ying, "Comprehensive scaling law for single-cell massive MIMO with MRT," *IEEE International Workshop on Signal Processing Advances in Wireless Communications (SPAWC)*, Sapporo, Japan, July 3-6, 2017. Invited. *Citation: 0.*
- (c2) **Y. Xiong**, Y. Jing, T. Chen, "Performance sensitivity analysis for linear alarm filters," American Control Conference (ACC), Seattle, USA, May 24–26, 2017. *Citation: 0.*
- (c3) **X. Liu** and Y. Jing, "A low-complexity precoding scheme for two-user massive MIMO downlink," *IEEE International Workshop on Signal Processing Advances in Wireless Communications (SPAWC)*, Edinburgh, UK, July 3-6, 2016. *Citation: 0.*
- (c4) **C. Feng** and Y. Jing, "Modified MRT and outage probability analysis for massive MIMO downlink under per-antenna power constraint," *IEEE International Workshop on Signal Processing Advances in Wireless Communications (SPAWC)*, Edinburgh, UK, July 3-6, 2016. *Citation: 1.*
- (c5) **Q. Wang** and Y. Jing, "Performance analysis of MRC/MRT relaying in finite-dimension massive MIMO systems," *IEEE International Workshop on Signal Processing Advances in Wireless Communications (SPAWC)*, Edinburgh, UK, July 3-6, 2016. *Citation: 0.*
- (c6) **Q. Wang** and Y. Jing, "Multiple-threshold rank-detection for reduced-rank MIMO channels," *IEEE Pacific Rim Conference on Communications, Computers and Signal Processing (PACRIM)*, Victoria, Canada, August 24-26, 2015. *Citation: 1.*
- (c7) **W. Zhang**, M. Noori, Y. Jing, and M. Ardakani, "Partial zero forcing for multi-way relay networks," *IEEE International Workshop on Signal Processing Advances in Wireless Communications (SPAWC)*, Stockholm, Sweden, June 28-July 1, 2015. *Citation: 3.*
- (c8) **D. Wang** and Y. Jing, "Improved training and training power allocation schemes for multi-relay AF networks," *IEEE Canadian Workshop on Information Theory (CWIT)*, St. John's, Canada, July 6-9, 2015. *Citation: 0.*
- (c9) **T. Cui**, **Q. Wang**, Y. Jing, and X. Yu, "SVD-based estimation for reduced-rank MIMO channel," *IEEE International Symposium on Information Theory (ISIT)*, Honolulu, USA, June 29 –July 4, 2014. *Citation: 4.*
- (c10) **Y. Hao**, Y. Jing, and S. ShahbazPanahi, "Multi-relay network design using power-normalized SNR," *IEEE International Workshop on Computational Advances in Multi-Sensor Adaptive Processing (CAMSAP)*, Saint Martin, December 15-18, 2013. *Citation: 0.*

- (c11) **G. Okeke**, W. Krzymien and Y. Jing, "Distributed beamforming in multi-cell cooperative MIMO cellular networks with non-regenerative relays: an LTE-advanced framework," *IEEE GLOBECOM*, Atlanta, USA, December 9-13, 2013. *Citation: 3.*
- (c12) **Q. Wang** and Y. Jing, "Power allocation and sum-rate analysis for multi-user multi-relay networks," *IEEE Vehicular Technology Conference (VTC) - Fall 2013*, Las Vegas, USA, September 2-5, 2013. *Citation: 3.*
- (c13) **C. Wu** and Y. Jing, "Power allocation in training for amplify-and-forward relay network," *IEEE Vehicular Technology Conference (VTC) - Fall 2013*, Las Vegas, USA, September 2-5, 2013. *Citation: 3.*
- (c14) **C. Wu** and Y. Jing, "Power allocation in training for two-way amplify-and-forward relay network," *IEEE China Summit and International Conference on Signal and Information Processing (ChinaSIP)*, Beijing, China, July 6-10, 2013. *Invited. Citation: 0.*
- (c15) **Y. Hao**, Y. Jing, and S. Shahbazpanahi, "SNR-per-unit-power optimization in relay networks," *IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, Vancouver, Canada, May 26-31, 2013. *Citation: 4.*
- (c16) X. Yu and Y. Jing, "SVD-based channel estimation for MIMO relay networks," *IEEE Vehicular Technology Conference (VTC) - Fall*, Quebec City, Quebec, Canada, September 3-6, 2012. *Citation: 3.*
- (c17) S. Shahbazpanahi and Y. Jing, "Power control for two-way relay networks under per-node power constraint," *IEEE Asilomar Conference on Signals, Systems and Computers*, Pacific Grove, USA, November 4-7, 2012. *Invited. Citation: 1.*
- (c18) **Q. Cao**, Y. Jing, and H. Zhao, "Power bargaining in multi-source relay networks," *IEEE International Conference on Communications (ICC)*, Ottawa, Canada, June 10-15, 2012. *Citation: 6.*
- (c19) **Q. Cao**, H. Zhao, and Y. Jing, "Relay power allocation and pricing in multi-user relay networks using game theory," *IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, Kyoto, Japan, March 25-30, 2012. *Citation: 6.*
- (c20) **S. Sun** and Y. Jing, "Channel training and coherent decodings in amplify-and-forward relay networks," *IEEE GLOBECOM Conference*, Atlanta, USA, December 9-13, 2011. *Citation: 1.*
- (c21) **G. Okeke**, Y. Jing, and W. Krzymien, "Beamforming in MIMO broadcast relay networks with multiple antenna users," *IEEE Asilomar Conference on Signals, Systems and Computers*, Pacific Grove, USA, November 6-9, 2011. *Invited. Citation: 4.*
- (c22) **L. Li**, Y. Jing, and H. Jafarkhani, "Transmission schemes for two user linear multi-access relay networks," *IEEE GLOBECOM Conference*, Miami, USA, December 6-10, 2010. *Citation: 2.*
- (c23) **S. Atapattu**, Y. Jing, H. Jiang, and C. Tellambura, "Opportunistic relaying in two-way networks," *International ICST Conference Communications and Networking in China (ChinaCom)*, Beijing, China, August 25-27, 2010. *Invited. Citation: 20.*
- (c24) **S. Sun** and Y. Jing, "Channel training and estimation in distributed space-time coded relay networks with multiple transmit/receive antennas," *IEEE Wireless Communications and Networking Conference (WCNC)*, Sydney, Australia, April 18-21, 2010. *Citation: 17.*
- (c25) **L. Li**, Y. Jing, and H. Jafarkhani, "Interference cancellation at the relay in two user wireless relay networks," *IEEE Wireless Communications and Networking Conference (WCNC)*, Sydney, Australia, April 18-21, 2010. *Citation: 6.*

- (c26) Y. Jing, "Improving distributed space-time coding through combining at the multiple-antenna relay," *IEEE International Workshop on Computational Advances in Multi-Sensor Adaptive Processing (CAMSAP)*, Aruba, December 13-16, 2009. Invited. *Citation: 2.*
- (c27) Y. Jing, "Distributed space-time code designs via Cayley transform," *IEEE International Workshop on Computational Advances in Multi-Sensor Adaptive Processing (CAMSAP)*, Aruba, December 13-16, 2009. *Citation: 1.*
- (c28) Y. Jing, "A relay selection scheme for two-way amplify-and-forward relay networks," *International Conference on Wireless Communications and Signal Processing (WCSP)*, Nanjing, China, November 13-15, 2009. Invited. *Citation: 94.*
- (c29) Y. Jing and H. Jafarkhani, "Interference cancellation in distributed space-time coded wireless relay networks," *IEEE International Conference on Communications (ICC)*, Dresden, Germany, June 14-18, 2009. *Citation: 14.*
- (c30) Y. Jing and H. Jafarkhani, "Single and multiple relay selection schemes and their diversity orders," *IEEE International Conference on Communications (ICC) - Communications Workshops*, Beijing, China, May 19-23, 2008. *Citation: 51.*
- (c31) Y. Jing and H. Jafarkhani, "Beamforming in wireless relay networks," *Information Theory and Applications Workshop (ITA)*, La Jolla, USA, January 27-February 1, 2008. Invited. *Citation: 14.*
- (c32) Y. Jing and H. Jafarkhani, "Network beamforming with channel mean and covariance at relays," *IEEE International Conference on Communications (ICC)*, Beijing, China, May 19-23, 2008. *Citation: 44.*
- (c33) Y. Jing and H. Jafarkhani, "Network beamforming using relays with perfect channel information," *IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, Honolulu, USA, April 15-20, 2007. *Citation: 161.*
- (c34) Y. Jing and H. Jafarkhani, "Distributed differential space-time coding in wireless relay networks," *Information Theory and Applications Workshop (ITA)*, San Diego, USA, January 29-February 2, 2007. Invited. *Do not find.*
- (c35) Y. Jing and H. Jafarkhani, "Using orthogonal and quasi-orthogonal designs in wireless relay networks," *IEEE GLOBECOM Conference*, San Francisco, USA, November 27-December 1, 2006. *Citation: 1.*
- (c36) Y. Jing and B. Hassibi, "Cooperative diversity in wireless networks with multiple-antenna nodes," *IEEE International Symposium on Information Theory (ISIT)*, Adelaide, Australia, September 4-9, 2005. *Citation: 88.*
- (c37) Y. Jing and B. Hassibi, "Distributed diversity in wireless networks using space-time coding," *Allerton Conference Communication, Control and Computing*, Allerton Park, USA, September 29-October 1, 2004. *Citation: 1.*
- (c38) Y. Jing and B. Hassibi, "Wireless network, diversity, and space-time codes," *Information Theory Workshop (ITW)*, San Antonio, USA, October 24-29, 2004. Invited. *Citation: 28.*
- (c39) Y. Jing and B. Hassibi, "Distributed space-time codes in wireless relay networks," *IEEE Sensor Array and Multichannel Signal Processing Workshop (SAM)*, Sitges, Barcelona, Spain, July 18-21, 2004. *Citation: 0.*
- (c40) Y. Jing and B. Hassibi, "Space-time code design for three-transmit-antenna systems," *IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, Montreal, Canada, May 17-21, 2004. *Citation: 1.*

- (c41) Y. Jing and B. Hassibi, "High-rate space-time codes motivated by SU(3)," *IEEE Asilomar Conference on Signals, Systems and Computers*, Pacific Grove, USA, November 9-12, 2003. *Citation: 1.*
- (c42) Y. Jing and B. Hassibi, "Fully-diverse Sp(2) code design," *IEEE International Symposium on Information Theory (ISIT)*, Yokohama, Japan, June 29-July 4, 2003. *Citation: 4.*
- (c43) Y. Jing and B. Hassibi, "Design of fully-diverse multi-antenna codes based on Sp(2)," *IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, Hong Kong, China, April 6-10, 2003. (Meetings cancelled due to SARS.) *Citation: 8.*
- (c44) Y. Jing and B. Hassibi, "Fully-diverse multiple-antenna space-time codes based on Sp(2)," *IEEE Asilomar Conference on Signals, Systems and Computers*, Pacific Grove, USA, November 3-6, 2002. *Citation: 1.*
- (c45) B. Hassibi and Y. Jing, "Unitary space-time modulation via Cayley transform," *IEEE International Symposium on Information Theory (ISIT)*, Lausanne, Switzerland, June 30-July 5, 2002. *Citation: 4.*
- (c46) B. Hassibi and Y. Jing, "Unitary space-time codes and the Cayley transform," *IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, Orlando, May 13-17, 2002. *Citation: 5.*

Books and Book-Chapters

- (d1) S. Shahbazpanahi and Y. Jing, *Recent Advances in Network Beamforming*, Elsevier Major Reference Books, Academic Press Library in Signal Processing, Final version submitted, April 2017.
- (d2) Y. Jing, *Distributed Space-Time Coding*, SpringerBriefs in Computer Science, Springer, 2013. ISBN: 978-1-4614-6830-1 (Print), 978-1-4614-6831-8 (Online). 108 pages.

IV. Professional Leadership and Services

NSERC Discover Grant Evaluation Group for ECE

- August 3, 2017 – June 30, 2020.

Journal Editorship

- Senior Area Editor, October 2017 – now, *IEEE Signal Processing Letters*
- Associate Editor, August 2011 – August 2016 (responsibilities extended till May 2017), *IEEE Transactions on Wireless Communications*.

Technical Committee

- Member, Jan. 1 2015 - now, *IEEE Signal Processing Society, Signal Processing for Communications and Networking (SPCOM)* Technical Committee.
 - SPCOM TC: Marconi award nomination subcommittee; Jan. 2016 – Dec. 2018
- Associate member, Nov. 2013 - Dec. 2014, *IEEE Signal Processing Society, Sensor Array and Multichannel (SAM)* Technical Committee.

Conference Organization

- Financial chair for *IEEE GlobalSIP Conference 2018*
- Track co-chair for *IEEE Vehicular Technology Conference (VTC)* - fall 2013
Track 8: Transmission Technologies and Communication Theory.

Invited Talks *(since August 2008)*

- Suranaree Institute of Technology, “Massive MIMO systems for 5G wireless,” December 20, 2016. Hosted by Dr. Monthippa Uthansakul, Nakhon Ratchasima, Thailand.
- University of Alberta, “Massive MIMO system for 5G wireless,” August 24, 2016. ECE Graduate Student Association (ECEGSA) Lecture Series, Hosted by Gem Shoute, Edmonton, Canada.
- University of Science and Technology, “Multi-user massive MIMO and outage probability analysis,” January 28, 2016. Hosted by Dr. Huarui Yin, Hefei, China.
- Nanjing University of Science and Technology, “Multi-user massive MIMO and outage probability analysis,” January 26, 2016. Hosted by Dr. Feng Shu, Nanjing, China.
- Tongji University, “Massive MIMO in 5G wireless systems,” December 31, 2015, Hosted by Dr. Qijun Chen, Shanghai, China.
- Ericsson “Low-cost and practical massive MIMO,” presentation to Ericsson R&D (virtual conference), Sept. 8, 2015. Hosted by Dr. Edward Sich.
- Southeast University, “Training and channel estimation in MIMO relay networks”, July 2013, Nanjing, China, Hosted by Dr. Shi Jin.
- University of Ontario Institute of Technology, January 2012, “Training design and channel estimation in cooperative relay networks,” Oshawa, Ontario, Canada. Hosted by Dr. Shahram Shahbazpanahi.
- Microsemi Cooperation, January 2012, “Cooperative wireless relay networks,” Ottawa, Canada, Hosted by Dr. Kamran Rahbar. (Co-presented with Dr. Dong and Dr. Shahbazpanahi.)
- NEC Labs China, “Space-time coding, beamforming, and relay selection for cooperative relay network”, August, 2011, Beijing, China, Hosted by Dr. Chaofeng (James) Li.
- University of Science and Technology of China, “Network cooperative diversity - a space-time approach”, November, 2009, Hefei, China, Hosted by Dr. Yong Tan.
- Shanghai Jiao-Tong University, “Network cooperative diversity - a space-time approach,” November, 2009, Shanghai, China, Hosted by Dr. Chengnian Long.

External Thesis Examiner / Reader

- PhD defense examiner for the University of Victoria in 2016
- Master thesis reader for McGill University in 2011 and 2016

Conference Technical Program Committee (TPC) members

- The Biennial Symposium on Communications (BSC) 2016
- IEEE Canadian Conference on Electrical and Computer Engineering (CCECE) 2011
- IEEE Canadian Workshop on Information Theory (CWIT) 2011, 2013, 2015, 2017
- IEEE Global Communication Conference (GlobeCom) 2012, 2013, 2014, 2015
- IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP) 2013, 2014, 2015, 2016
- IEEE International Conference on Communications (ICC) 2011, 2013, 2015, 2016
- IEEE/CIC International Conference on Communications in China (ICCC) (Signal Processing in Communications) 2014

- IEEE International Conference on Wireless Communications, Networking and Information Security (ICWCNIS) 2010
- International Conference on Wireless Communications and Signal Processing (WCSP) 2012, 2013, 2014
- IEEE International Workshop on Signal Processing Advances in Wireless Communications (SPAWC) 2015 2016
- IEEE Vehicular Technology Conference (VTC) 2010-fall, 2011-spring, 2012-spring, 2012-fall, 2013-spring, 2014-fall
- IEEE Wireless Communication and Networking Conference (WCNC) 2010, 2013, 2014, 2015
- ChinaCom 2010
- IEEE Symposium on Personal, Indoor, Mobile and Radio Communications (PIMRC) 2011, 2014, 2015, 2017
- MilCom 2016

Grant Review and Book Review

- Natural Sciences and Engineering Research Council (NSERC) of Canada
Discovery Grant – 5 in total (1 in 2014, 1 in 2013, 1 in 2012, 1 in 2011, and 2 in 2010).
CRD Grant – May 2017.
- National Fund for Science and Technology Development (FONDECYT) Chile 2009
- 1 book review for Wiley, February 2016

Journal Paper Review

- IEEE Transactions on Communications
- IEEE Communications Letters
- IEEE Transactions on Wireless Communications
- IEEE Transactions on Information Theory
- IEEE Transactions on Signal Processing
- IEEE Signal Processing Letters
- IEEE Journal on Selected Areas in Communications
- IEEE Journal of Selected Topics in Signal Processing
- IEEE Transactions on Vehicular Technology
- EURASIP Journal on Advances in Signal Processing
- IET Communications
- International Journal of Communication Systems
- Annals of Telecommunications
- Springer Journal of Wireless Networks
- IEICE Transactions on Communications
- Journal of Communications and Networks

V.i Faculty/Department Committee

- ECE Department Graduate Studies Committee (Member) July 2013 – June 2016
- ECE Department Faculty Selection Committee (Member) 2012

- Engineering Faculty Nomination Committee (Member) 2010-2014
- ECE Department Nomination Committee (Chair) 2010-2012
- Review Committee for the Graduate Research Symposium of the ECE Department of the University of Alberta – 2012, 2010

V.j Thesis and Candidacy Exam Committee of UoA

- Number of M.Sc. Defense attended: 21
- Number of Ph.D. Defense attended: 37
- Number of Ph.D. Candidacy Exam attended: 37
- Number of Ph.D. Defense Chaired: 5