

## Dr. Serhat Erküçük

Department of Electrical-Electronics Engineering, Kadir Has University, Fatih, Istanbul, 34083, Turkey

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### Highlights:

15+ years of experience in conducting research on PHY and MAC layer design of emerging communication systems with recent research focus on the design of 5G systems. Research funded by NSERC, ERC, TUBITAK, Turk Telekom and ARGELA. 50+ papers in refereed journals and conference proceedings, industrial contribution by attending standardization meetings and holding US patents. Recipient of Governor General's Gold Medal, NSERC Postdoctoral Fellowship and Marie Curie International Reintegration Grant. Executive Co-chair of IEEE 5G Summit, Istanbul and TPC Co-chair of IEEE BlackSeaCom-2017.

### Education:

- **Ph. D.** in Engineering Science, Simon Fraser University, Burnaby, BC, Canada, 2007
- **M.Sc.** in Electrical and Computer Engineering, Ryerson University, Toronto, ON, Canada, 2003
- **B.Sc.** in Electrical-Electronics Engineering, Middle East Technical Univ., Ankara, Turkey, 2001

### Work Experience:

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|-------------------------|---|
| Sept. 2017 – Sept. 2018 | <b>Visiting professor</b> , Ryerson University              |
| Sept. 2014 – present    | <b>Associate professor</b> , Kadir Has University           |
| Sept. 2008 – Aug. 2014  | <b>Assistant professor</b> , Kadir Has University           |
| Sept. 2007 – Aug. 2008  | <b>Postdoctoral fellow</b> , University of British Columbia |
| Sept. 2003 – Aug. 2007  | <b>Research assistant</b> , Simon Fraser University         |
| Sept. 2001 – Aug. 2003  | <b>Research assistant</b> , Ryerson University              |

### Research Areas:

- PHY and MAC layer design of emerging communication systems
- Signal processing for communications and multimedia
- Wireless sensor networks
- Cognitive radios and ultra-wideband (UWB) communications

### Supervised Thesis

#### Ph.D. Students:

- Mehmet Başaran, **Thesis:** Energy efficient communication systems, Istanbul Technical University (co-supervised with Prof. Hakan Ali Çırpan), Feb 2018 (*Dr. Basaran started working for Vodafone Turkey*).

#### M.Sc. Students:

- Mehmet Başaran, **Thesis:** Compressed sensing channel estimation for UWB systems, Istanbul University (co-supervised with Prof. Hakan Ali Çırpan), June 2011 (*Mr. Başaran enrolled in the Ph.D. degree program at the Department of Telecommunications Engineering at Istanbul Technical University*).
- Çağlar Fındıklı, **Thesis:** Performance of IEEE 802.15.4a systems in the presence of interference, Istanbul Technical University (co-supervised with Prof. Mehmet Ertuğrul Çelebi), June 2012 (*Mr. Fındıklı enrolled in the Ph.D. degree program at the Department of Telecommunications Engineering at Istanbul Technical University*).
- Burak Yılmaz, **Thesis:** Joint detection of primary users for detect-and-avoid purposes, Kadir Has University, May 2012 (*Mr. Yılmaz started working for SmartCom-Turkey*).
- Evren Çatak, **Thesis:** Implementation of combinational cooperative detection, Kadir Has University, May 2012 (*Ms. Çatak enrolled in the Ph.D. degree program at the Department of Telecommunications Engineering at Yıldız Technical University*).
- Mehmet Özgör, **Thesis:** Bayesian compressive sensing approach for UWB channel estimation, Istanbul Technical University (co-supervised with Prof. Hakan Ali Çırpan), Dec. 2012 (*Mr. Özgör started working for P.I.Works-Turkey*).
- Yağmur Sabuncu, **Thesis:** IEEE 802.15.4a based distributed WSNs, Kadir Has University, July 2013 (*Ms. Sabuncu enrolled in the Ph.D. degree program at the Department of Electrical-Electronics Engineering at Boğaziçi University*).
- Mustafa Can Macit, **Thesis:** Performance of Wi-Fi in TV White Space, Kadir Has University (co-supervised with Asst. Prof. Habib Şenol), June 2016 (*Mr. Macit enrolled in the Ph.D. degree program at the Department of Electrical-Electronics Engineering at Boğaziçi University*).

- Onur Karatalay, **Thesis:** Coexistence of Wi-Fi in TV White Space, Kadir Has University (co-supervised with Asst. Prof. Tunçer Baykaş), June 2016 (*Mr. Karatalay enrolled in the Ph.D. degree program at the Department of Electrical and Computer Engineering at McGill University*).
- Rameez Samo, **Thesis:** Realistic implementation of combinational cooperative detection, Kadir Has University, Sept. 2016.
- Abdul Ahad Ashfaq Sheikh, **Thesis:** Orbital angular momentum based communications, Kadir Has University, Sept. 2016.
- Ayşe Betül Büyükkşar, **Thesis:** Sparse channel estimation for time-varying OFDM systems, Istanbul Technical University (co-supervised with Prof. Hakan Ali Çırpan and Asst. Prof. Habib Şenol), June 2017 (*Ms. Büyükkşar enrolled in the Ph.D. degree program at the Department of Telecommunications Engineering at Istanbul Technical University*).
- Oğuz Ülgen, **Thesis:** Coexistence algorithms for TVWS systems, Kadir Has University (co-supervised with Asst. Prof. Tunçer Baykaş), June 2018 (*Mr. Ülgen started working for Huawei-Turkey*).

## **Publications:**

### **Summary**

- Papers in refereed journals ..... 20
- Papers in refereed conference proceedings ..... 35
- Patents .....2
- Book chapters ..... 1
- IEEE wireless standard contributions ..... 3

### **Journal Publications:**

- [J20] L. Ferdouse, A. Anpalagan, and **S. Erköçük**, “Energy efficient NOMA supported downlink cloud-RANs for 5G networks,” (in preparation), to be submitted: Jan. 2019.
- [J19] A. Alnoman, **S. Erköçük**, and A. Anpalagan, “Sparse code multiple access (SCMA)-based edge computing for IoT systems,” (in preparation), to be submitted: Dec. 2018.
- [J18] L. Ferdouse, A. Anpalagan, and **S. Erköçük**, “Joint communication and computing resource allocation in 5G cloud radio access networks,” *IEEE Trans. Vehic. Technol.*, submitted: Aug. 2018, (in revision).
- [J17] M. Başaran, H. Şenol, **S. Erköçük**, and H. A. Çırpan, “Channel estimation for TDS-OFDM systems in rapidly time varying wireless channels,” *IEEE Trans. Wireless Commun.*, vol. 17, iss. 12, pp. 8123–8135, Dec. 2018.
- [J16] O. Karatalay **S. Erköçük**, and T. Baykaş, “Busy tone based coexistence algorithm for WRAN and WLAN Systems in TV white space,” *IET Commun.*, vol. 12, iss. 13, pp. 1630 – 1637, Aug. 2018.
- [J15] M. Ulema, E. Panayirci, **S. Erköçük**, and R. Schober “Conference Report: IEEE BlackSeaCom 2017,” *IEEE Commun. Mag.*, vol. 55, issue 8, pp. 6, Aug. 2017.
- [J14] H. Hosseini, A. Anpalagan, K. Raahemifar, and **S. Erköçük**, “Wavelet based cognitive SCMA system for mmWave 5G communication networks,” *IET Commun.*, vol. 11, iss. 6, pp. 831–836, May 2017.
- [J13] H. Hosseini, A. Anpalagan, K. Raahemifar, **S. Erköçük** and S. Habib, “Joint wavelet based spectrum sensing and FBMC modulation for cognitive mmWave small cell networks,” *IET Commun.*, vol. 10, iss. 14, pp. 1803 – 1809, Sep. 2016.
- [J12] M. Başaran, **S. Erköçük**, and H. A. Çırpan, “Bayesian compressive sensing for primary user detection,” *IET Signal Process.*, vol. 10, pp. 514 – 523, July 2016.
- [J11] Ç. Fındıklı, **S. Erköçük**, and M. E. Çelebi, “Implementation of IEEE 802.15.4a based UWB systems for coexistence with primary users,” *Intl. Jour. of Adv. Telecommun., Electrotech., Signals and Systems*, vol. 5, pp. 86 – 94, Mar. 2016.
- [J10] M. Özgör, **S. Erköçük**, and H. A. Çırpan, “Bayesian compressive sensing for ultra-wideband channel estimation: algorithm and performance analysis,” *Telecommun. Syst. Jour.*, vol. 59, issue 4, pp. 417 – 427, Aug. 2015.
- [J9] E. Çatak and **S. Erköçük**, “Practical implementation of the combinational cooperative detection method,” *Wireless Personal Commun.*, vol. 80, pp. 723–738, Jan. 2015.
- [J8] M. Başaran, **S. Erköçük**, and H. A. Çırpan, “Compressive sensing for UWB channel estimation: on the sparsity assumption of UWB channels,” *Intl. J. of Commun. Syst.*, vol. 27, pp. 3383–3398, Nov. 2014.
- [J7] B. Yılmaz and **S. Erköçük**, “Detection of interdependent primary systems using wideband cognitive radios,” *AEÜ – Intl. J. Electron. Commun.*, vol. 67, pp. 926 – 936, Nov. 2013.
- [J6] **S. Erköçük**, L. Lampe, and R. Schober, “Joint detection of primary systems using UWB impulse radios,” *IEEE Trans. on Wireless Commun.*, vol. 10, pp. 419 – 424, Feb. 2011.
- [J5] **S. Erköçük**, D. I. Kim, and K. S. Kwak, “Code shift keying impulse modulation for UWB communications,” *IEEE Trans. on Wireless Commun.*, vol. 7, pp. 3285 – 3291, Sept. 2008.
- [J4] **S. Erköçük** and D. I. Kim, “Spectral characteristics of M-ary code shift keying based impulse radios: effects of code design,” *IEEE Trans. on Wireless Commun.*, vol. 6, pp. 2266 – 2275, June 2007.
- [J3] **S. Erköçük** and D. I. Kim, “M-ary code shift keying impulse modulation combined with BPPM for UWB communications,” *IEEE Trans. on Wireless Commun.*, vol. 6, pp. 2255 – 2265, June 2007.

[J2] S. Krishnan and **S. Erküçük**, "Interference excision in spread spectrum communications using adaptive positive time-frequency analysis," *EURASIP Journal on Wireless Commun. and Networking*, vol. 2007, article ID 14916, pp. 1 – 9, May 2007.

[J1] **S. Erküçük**, S. Krishnan, and M. Zeytinoglu, "A robust audio watermark representation based on linear chirps," *IEEE Trans. on Multimedia*, vol. 8, pp. 925 – 936, Oct. 2006.

### **Conference Publications:**

[C35] S. M. Hashir, **S. Erküçük**, and T. Baykaş, "A novel indoor channel model for TVWS communications based on measurements," *IEEE Conf. Standards Commun. & Network.*, pp. 1–7, Oct. 2018, Paris, France.

[C34] O. Ülgen, T. Baykaş, and **S. Erküçük**, "A new approach for coexistence of IEEE 802.11af and 802.22 systems," *IEEE Signal Proc. Appl. Conf.*, pp. 1–4, May 2018, Izmir, Turkey.

[C33] A. B. Büyüksar, H. Şenol, **S. Erküçük**, and H. A. Çırpan, "Rapidly varying sparse channel tracking with hybrid Kalman-OMP algorithm," *Proc. ITELCON*, Dec. 2017, Istanbul, Turkey.

[C32] O. Ülgen, **S. Erküçük**, O. Karatalay, and T. Baykaş, "Busy tone based power control for coordination of IEEE 802.11af and 802.22 systems," *IEEE Signal Proc. Appl. Conf.*, pp. 1–4, May 2017, Antalya, Turkey.

[C31] Y. Sabucu and **S. Erküçük**, "Noncoherent ultra wideband wireless sensor networks for primary user detection," *Proc. ICUMT*, Oct. 2016, pp. 75 – 79, Lisbon, Portugal.

[C30] A. B. Büyüksar, H. Şenol, **S. Erküçük**, and H. A. Çırpan, "Data-aided autoregressive sparse channel tracking for OFDM systems," *Proc. ISWCS*, Sept. 2016, pp. 424 – 428, Poznan, Poland.

[C29] M. Başaran, **S. Erküçük**, H. Şenol, and H. A. Çırpan, "Effect of inter-block-interference-free region on compressed sensing based channel estimation in TDS-OFDM systems," *Proc. IEEE BlackSeaCom*, June 2016, pp. 1 – 3, Varna, Bulgaria.

[C28] S. Çelik, M. Başaran, **S. Erküçük**, and H. A. Çırpan, "Comparison of compressed sensing based algorithms for sparse signal reconstruction," *IEEE Signal Proc. Appl. Conf.*, May 2016, pp. 1441 – 1444, Zonguldak, Turkey.

[C27] M. Başaran, **S. Erküçük**, and H. A. Çırpan, "The effect of primary user bandwidth on Bayesian compressive sensing based spectrum sensing," *Proc. ICUMT*, Oct. 2015, pp. 35 – 39, Brno, Czech Republic.

[C26] O. Karatalay **S. Erküçük**, and T. Baykaş, "Analysis of extended busy tone performance for coexistence between WRAN and WLAN TVWS networks," *IEEE Intl. PIMRC*, Sept. 2015, pp. 1957 – 1962, Hong Kong.

[C25] M. C. Macit, H. Şenol, and **S. Erküçük**, "Performance investigation of IEEE 802.11af systems under realistic channel conditions," *IEEE Intl. Wireless Commun. & Mobile Comput.*, Aug. 2015, pp. 431 – 435, Dubrovnik, Croatia.

[C24] O. Karatalay **S. Erküçük**, and T. Baykaş, "Busy tone implementation for coexistence of IEEE 802.22 and 802.11af systems," *IEEE Signal Proc. Appl. Conf.*, May 2015, pp. 1845 – 1848, Malatya, Turkey.

[C23] M. Başaran, **S. Erküçük**, and H. A. Çırpan, "Achievable performance of Bayesian compressive sensing based spectrum sensing," *IEEE Intl. Conf. on Ultra-Wideband*, Sept. 2014, pp. 86 – 90, Paris, France.

[C22] Ç. Fındıklı, **S. Erküçük**, and M. E. Çelebi, "IEEE 802.15.4a based ultra wideband systems for coexistence with primary users," *IEEE Intl. Conf. on Telecommun. and Signal Proc.*, July 2014, pp. 1 – 5, Berlin, Germany.

[C21] Y. Sabucu and **S. Erküçük**, "Primary user detection in IEEE 802.15.4a based wireless sensor networks," *IEEE Signal Proc. Appl. Conf.*, Apr. 2013, pp. 1 – 4, Cyprus.

[C20] M. Özgör, **S. Erküçük**, and H. A. Çırpan, "Bayesian compressive sensing for ultra-wideband channel models," *IEEE Intl. Conf. on Telecommun. and Signal Proc.*, July 2012, pp. 320 – 324, Prag, Czech Republic.

[C19] B. Yılmaz and **S. Erküçük**, "Detection of jointly active primary systems," *Future Network and Mobile Summit*, July 2012, pp. 1 – 8, Berlin, Germany.

[C18] E. Çatak and **S. Erküçük**, "The effect of secondary user locations on the cooperative detection performance," *IEEE Signal Proc. Appl. Conf.*, Apr. 2012, pp. 1 – 4, Muğla, Turkey.

[C17] M. Başaran, **S. Erküçük**, and H. A. Çırpan, "The effect of channel models on compressed sensing based ultra-wideband channel estimation," *IEEE Intl. Conf. on Ultra-Wideband*, Sept. 2011, pp. 375 – 379, Bologna, Italy.

[C16] Ç. Fındıklı, **S. Erküçük**, and M. E. Çelebi, "Performance of IEEE 802.15.4a systems in the presence of narrowband interference," *IEEE Intl. Conf. on Ultra-Wideband*, Sept. 2011, pp. 395 – 399, Bologna, Italy.

[C15] M. Başaran, **S. Erküçük**, and H. A. Çırpan, "The effect of channel resolution on compressed sensing based ultra-wideband channel estimation," *IEEE Signal Proc. Appl. Conf.*, Apr. 2011, pp. 367 – 370, Antalya, Turkey.

[C14] Ç. Fındıklı and **S. Erküçük**, "Effects of channel models and optional data rates on the IEEE 802.15.4a system performance," *IEEE Signal Proc. Appl. Conf.*, Apr. 2010, pp. 25 – 28, Diyarbakır, Turkey.

[C13] **S. Erküçük**, L. Lampe, and R. Schober, "Detection of multiple primary systems using DAA UWB-IRs," *IEEE Intl. Conf. on Ultra-Wideband*, Sept. 2009, pp. 210 – 213, Vancouver, Canada.

[C12] **S. Erküçük** and B. A. Kaleli, "Linear combination of pulses for coexistence in the IEEE 802.15.4a standard," *IEEE Signal Proc. Appl. Conf.*, Apr. 2009, pp. 620 – 623, Antalya, Turkey.

[C11] **S. Erküçük**, L. Lampe, and R. Schober, "Analysis of interference sensing for DAA UWB-IR systems," (**invited paper**) *IEEE Intl. Conf. on Ultra-Wideband*, Sept. 2008, vol. 3, pp. 17 – 20, Hannover, Germany.

- [C10] S. Erküçük, D. I. Kim, and K. S. Kwak, "Effects of channel models and Rake receiving process on UWB-IR system performance," *IEEE Intl. Conf. Commun.*, June 2007, pp. 4896 – 4901, Glasgow, Scotland.
- [C9] S. Erküçük and D. I. Kim, "UWB-IR system performance for implementable Rake receivers," *IEEE Canadian Conf. on Elec. and Comp. Eng.*, Apr. 2007, pp. 1179 – 1182, Vancouver, British Columbia.
- [C8] S. Erküçük, D. I. Kim, and K. S. Kwak, "Code shift keying modulation for low-rate UWB communications under dense multipath," *IEEE Global Commun. Conf.*, Nov. 2006, pp. 1 – 5, San Francisco, California.
- [C7] S. Erküçük and D. I. Kim, "Effects of code design on the spectral characteristics of M-CSK based impulse radios," *IEEE Intl. Conf. on Commun.*, June 2006, vol. 10, pp. 4757 – 4762, Istanbul, Turkey.
- [C6] S. Erküçük and D. I. Kim, "Combined M-ary code shift / differential chaos shift keying for low-rate UWB communications," *IEEE Intl. Conf. on Ultra-Wideband*, Sept. 2005, pp. 33 – 37, Zurich, Switzerland. → **Runner-up paper** (ranked between #4 to #6) for the Best Student Paper Competition among 101 accepted student papers.
- [C5] S. Erküçük and D. I. Kim, "Power spectral density characteristics of M-CSK based impulse radios in UWB communications," *61st IEEE Vehicular Tech. Conf.*, May 2005, vol. 2, pp. 1391 – 1395, Stockholm, Sweden.
- [C4] S. Erküçük and D. I. Kim, "Combined M-ary code shift keying/binary pulse position modulation for ultra wideband communications," *IEEE Global Commun. Conf.*, Dec. 2004, vol. 2, pp. 804 – 808, Dallas, Texas.
- [C3] S. Erküçük and S. Krishnan, "Time frequency filtering of interferences in spread spectrum communications," *Intl. Symp. Signal Proc. and its Appl.*, July 2003, vol. 2, pp. 323 – 326, Paris, France.
- [C2] S. Erküçük, S. Krishnan, and M. Zeytinoglu, "Robust audio watermarking using a chirp based technique," *IEEE Intl. Conf. Multimedia and Expo*, July 2003, vol. 2, pp. 513 – 516, Baltimore, Maryland.
- [C1] S. Erküçük and S. Krishnan, "Interference excision in spread spectrum communications using adaptive positive time frequency distributions," *IEEE Intl. Conf. on Acoustics, Speech and Signal Proc.*, May 2002, vol. 4, pp. 4180, Orlando, Florida.

#### **Patents:**

- [P2] M. Uysal, S. Erküçük, Ö. Narmanlıoğlu, "Communication between vehicles of a platoon," (US and PCT Patent Applications) US 14902235 and PCT/2015/050266, Dec. 2015.
- [P1] D. I. Kim, S. Erküçük, K. S. Kwak, "UWB M-CSK/BPPM wireless communication system and method for increased information rate," US Patent No: 7,773,659, Aug. 10, 2010.

#### **Book Chapters:**

- [B1] S. Krishnan, B. Ghoraani, and S. Erküçük, "Time-Frequency Analysis of Digital Audio Watermarking (**invited book chapter**)", *Digital Audio Watermarking Techniques and Technologies: Applications and Benchmarking*, Information Science Reference, Hershey, PA, 2007.

#### **IEEE Wireless Standard Contributions:**

- [S3] S. Erküçük, D. I. Kim and K. S. Kwak, "Code Shift Keying for UWB PHY," doc. IEEE 802.15-06-0045-00-004a (informative presentation presented to the IEEE 802.15 Low Rate Alternative PHY Task Group 4a), Jan. 2006, Waikoloa, Hawaii.
- [S2] D. I. Kim, S. Erküçük and K. S. Kwak, "Merged proposal of chaotic UWB system for 802.15.4a – Contributed Section: Combined M-ary Code Shift/Differential Chaos Shift Keying," doc. IEEE 15-05-0132-03-004a (merged proposal presented by Samsung, Korea to the IEEE 802.15 Low Rate Alternative PHY Task Group 4a), Mar. 2005, Atlanta, Georgia.
- [S1] D. I. Kim, S. Erküçük, K. S. Kwak, "M-ary Code Shift Keying/Binary PPM (M-CSK/BPPM) Based Impulse Radio," doc. IEEE 802.15-05-0022-02-004a (proposal presented to the IEEE 802.15 Low Rate Alternative PHY Task Group 4a), Jan. 2005, Monterey, California.

#### **Projects (as Principal Investigator / Fellow):**

- **Title:** Physical Layer Approaches for Small Cells in 5G System Design  
**Funded by:** Scientific and Technological Research Council of Turkey (TÜBİTAK), BİDEB-2219  
**Duration:** Sept. 2017 – Sept. 2018  
**Budget:** 30,000 USD (approx. 40,000 CAD)
- **Title:** Compressed Sensing Based Approaches for the Design of Energy Efficient Communication Systems  
**Funded by:** Scientific and Technological Research Council of Turkey (TÜBİTAK), 114E298  
**Duration:** Oct. 2014 – Sept. 2016  
**Budget:** 80,153 TL (approx. 40,000 CAD)
- **Title:** Wi-Fi Implementation in TV White Space  
**Funded by:** Türk Telekom / Argela  
**Duration:** Oct. 2014 – Sept. 2015  
**Budget:** 77,880 TL (approx. 40,000 CAD)

- Title:** Coexistence of Ultra Wideband and Licensed Systems  
**Funded by:** European Union 7th Framework Programme Marie Curie – International Reintegration Grants, PIRG GA 2009 249286  
**Duration:** Nov. 2010 – Oct. 2013  
**Budget:** 75,000 Euros (approx. 100,000 CAD)
- Title:** System Optimization for Low-Rate Ultra-Wideband Communications  
**Funded by:** Natural Sciences and Engineering Research Council of Canada  
**Duration:** Sept. 2007 – Aug. 2009  
**Budget:** 80,000 CAD

### Service and Administrative Duties:

|                         |   |
|-------------------------|---|
| June 2017               | <b>Executive Co-Chair</b> , IEEE 5G Summit, Istanbul  |
| June 2017               | <b>Technical Program Co-Chair</b> , IEEE 5 <sup>th</sup> International Black Sea Conference on Communications and Networking, Istanbul.   |
| Apr. 2016 – present     | <b>Section Vitality Coordinator</b> , IEEE Turkey.  |
| July 2015               | <b>Local Arrangements Co-Chair</b> , 17 <sup>th</sup> International Conference on Advanced Robotics, Istanbul.  |
| Apr. 2015 – present     | <b>Faculty Executive Committee Member</b> , Kadir Has University  |
| Apr. 2015 – present     | <b>Faculty Committee Member</b> , Kadir Has University  |
| Jan. 2015 – present     | <b>Graduate School of Science and Engineering Board Member</b> , Kadir Has University   |
| June 2014               | <b>Organizing Chair</b> , RWTH Aachen ICE & Kadir Has University Joint Workshop on Communication Technologies and Embedded Systems, Istanbul.   |
| Sept. 2011 – Sept. 2016 | <b>Area Editor</b> , Intl. Journal of Electronics and Communications (AEÜ).   |
| 2008 – present          | <b>Technical Program Committee Member</b> , IEEE ICC (2011-present), IEEE Globecom (2009-present), IEEE ICUMT (2009-present), IEEE IWCMC (2008-2011), IEEE CCECE (2008-2011).   |
| 2006 – present          | <b>Reviewer</b> , IEEE Transactions on Wireless Communications, IEEE Transactions on Signal Processing, IEEE Communications Letters, IEEE Transactions on Vehicular Technology, EURASIP JWCN, Physical Communication, IET Signal Processing, Digital Signal Processing. |
| Sept. 2007 – Aug. 2008  | <b>Vice Chair</b> , IEEE Vancouver Joint Communications Chapter.  |
| Jan. 2006 – Aug. 2008   | <b>Member</b> , IEEE Vancouver Joint Communications Chapter Executive Committee.  |
| Jan. 2005 – May 2007    | <b>Student Representative</b> , Graduate Program Committee, Simon Fraser University.  |
| Sept. 2004 – Jan. 2006  | <b>Student Representative</b> , IEEE Student Branch, Simon Fraser University.   |
| Sept. 2004 – Jan. 2005  | <b>Student Representative</b> , Committee of the School, Simon Fraser University.   |
| Feb. 2003 – Apr. 2003   | <b>Founding Member / Former President</b> , Electrical and Computer Engineering Graduate Student Association, Ryerson University.   |
| Oct. 2002 – Aug. 2003   | <b>Executive Board Member</b> , Ryerson Students' Administrative Council, Graduate Caucus.  |
| May 2002 – Aug. 2003    | <b>Student Representative</b> , IEEE Student Branch, Ryerson Uni.   |

### Memberships in Professional Organizations:

|                     |   |
|---------------------|---|
| Jan. 2004 – present | <b>Member</b> , Communications Society of IEEE. |
| Jan. 1999 – present | <b>Member</b> , IEEE.                           |

### Grants and Awards

|                       |   |
|-----------------------|---|
| Oct. 2012             | <b>Faculty of Engineering, Dean's Rising Star Award</b> , Kadir Has U.                                    |
| Dec. 2011             | <b>Young Academician Incentive Award</b> , Kadir Has Uni.   |
| Nov. 2010 – Oct. 2013 | <b>Marie Curie Intl. Reintegration Grant</b> , Kadir Has Uni.   |
| Sep. 2007 – Aug. 2009 | <b>NSERC Postdoctoral Fellowship</b> , University of British Columbia                                     |
| Jan. 2007             | <b>Faculty of Applied Science Fellowship</b> , Simon Fraser University                                    |
| Sep. 2005             | <b>President's Ph.D. Research Stipend</b> , Simon Fraser University                                       |
| Jan. 2005             | <b>Dean of Graduate Studies Fellowship</b> , Simon Fraser University                                      |
| Jan. 2004 – Jan. 2007 | <b>Private Graduate Scholarship in Expert Syst.</b> , Simon Fraser Uni.                                   |
| Oct. 2003             | <b>Governor General's Gold Medal</b> , Ryerson University   |
| Apr. 2003             | <b>Dennis Mock Student Leadership Award</b> , Ryerson University  |
| Aug. 2002             | <b>IBM Watson Travel Grant</b> (presented at the IBM / ICME-2002 Student Workshop, Lausanne, Switzerland) |
| July 2002             | <b>School of Graduate Studies Scholarship</b> , Ryerson University  |

## **Teaching**

### **Undergraduate Courses:**

EE-361 Electromagnetic Field Theory

EE-371 Signals and Systems

EE-374 Digital Signal Processing

EE-376 Communication Systems

EE-473 Digital Communications

### **Graduate Courses:**

EE-503 Information Theory and Coding

EE-508 Advanced Signal Processing

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Last updated: Dec. 11, 2018