

Liang Dong

Curriculum Vitae

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Professional Preparation

2002	Ph.D.	Electrical and Computer Engineering	The University of Texas at Austin
1998	M.S.	Electrical and Computer Engineering	The University of Texas at Austin
1996	B.S.	Computer Engineering	Shanghai Jiao Tong University
1996	B.S.	Applied Physics	Shanghai Jiao Tong University

Appointments

2011–	Associate Professor	Electrical and Computer Engineering	Baylor University
2010–11	Associate Professor	Electrical and Computer Engineering	Western Michigan University
2004–10	Assistant Professor	Electrical and Computer Engineering	Western Michigan University
2002–04	Research Associate	Electrical Engineering	University of Notre Dame

Honors and Awards

2013	ECS Research Initiation Award	Baylor University
2011	Faculty Scholars Award	Western Michigan University
2008	Research Development Award	Western Michigan University
2008	Faculty Research and Creative Activities Award	Western Michigan University
1999	Graduate Fellowship	The University of Texas at Austin
1994	Hua-Xin Scholarship	Shanghai Jiao Tong University

Membership of Associations

Senior Member	Institute of Electrical and Electronics Engineers (IEEE)
Member	American Physical Society (APS)
Member	American Society for Engineering Education (ASEE)
Member	Sigma Xi, The Scientific Research Society

Funded Research

1. L-3 Communications, “Onboard wireless high-definition content delivery system – Phase II,” P.I., Performing Organization: Baylor University, January 1, 2014–December 31, 2014, \$150,000
2. L-3 Communications, “Onboard wireless high-definition content delivery system – Phase I,” P.I., Performing Organization: Baylor University, October 21, 2012–December 21, 2013, \$150,000
3. Tank-Automotive Research, Development and Engineering Center (TARDEC) – U.S. Army, “Development of an intelligent vehicle health management system for light tactical vehicles,” Co-P.I., Performing Organization: Western Michigan University, May 2008–December 2010, \$348,683 (my share \$58,000)
4. DENSO North America Foundation, “Development of smart vehicles laboratory for future engineering workforce,” P.I., Performing Organization: Western Michigan University, July 2009–June 2010, \$20,000
5. Michigan Space Grant Consortium – NASA, “Cooperative localization and communication,” P.I., Performing Organization: Western Michigan University, June 2008–May 2009, \$5,000 (plus \$5,000 matching)

6. Michigan Department of Transportation, "Application of unmanned aerial vehicles (UAVs) to traffic and emergency surveillance: demonstration and system design," Co-P.I., Performing Organization: Western Michigan University, September 2005–August 2006, \$110,663 (my share \$37,000)

Courses Taught

At Baylor University:	EGR 1302: Introduction to Engineering Analysis
	ELC 2330: Electronic Circuit Theory
	ELC 4350: Principles of Communication
	ELC 4351: Digital Signal Processing
	ELC 4438: Embedded Systems Design
	ELC 5356: Statistical and Adaptive Signal Processing
	ELC 5396: Wireless Communication and Networking
At Western Michigan University:	ECE 1000: Fundamentals of Circuits and Electronics
	ECE 2210: Electronics I
	ECE 3200: Electronics II
	ECE 3510: Engineering for Real-Time Systems
	ECE 3570: Computer Architecture
	ECE 4550: Digital Signal Processing
	ECE 5150: Real-Time Computing
	ECE 5510: Application-Specific Integrated Circuits Design
	ECE 5550: Advanced Digital Signal Processing
	ECE 7250: Doctoral Research Seminar

Publications

Journal Articles

1. Liu, Y. and L. Dong (2014). Spectrum sharing in MIMO cognitive radio networks based on cooperative game theory. *IEEE Transactions on Wireless Communications* **Accepted for publication**.
2. Dong, L. and Y. Liu (2014). Parallel sub-channel transmission for cognitive radios with multiple antennas. *Wireless Personal Communications* **Accepted for publication**.
3. Dong, L. (2014). Receiver design for single-carrier block transmission over doubly selective channels. *Wireless Personal Communications* **77**(3), 1833–1845.
4. Alshbatat, A. I., P. J. Vial, and L. Dong (2014). Effect of polytetrafluoroethylene material on dynamic behaviour of an underactuated unmanned aerial vehicle. *International Journal of Science and Advanced Technology* **4**(6), 36–44.
5. Saleh, M. and L. Dong (2013). Real-time scheduling with security enhancement for packet switched networks. *IEEE Transactions on Network and Service Management* **10**(3), 271–285.
6. Dong, L. (2012). Opportunistic media access control and routing for delay-tolerant mobile ad hoc networks. *Wireless Networks* **18**(8), 949–965.
7. Dong, L. (2012). Cooperative localization and tracking of mobile ad hoc networks. *IEEE Transactions on Signal Processing* **60**(7), 3907–3913.
8. Wang, J., L. Dong, and Y. Fu (2011). Modeling of UHF voltage multiplier for radio-triggered wake-up circuits. *International Journal of Circuits Theory and Applications* **39**(11), 1189–1197.
9. Alshbatat, A. I. and L. Dong (2011). Low latency routing algorithm for unmanned aerial vehicles ad-hoc networks. *World Academy of Science, Engineering & Technology* **5**(8), 629–635.
10. Dong, L. (2010). Turbo equalization with prediction and iterative estimation of time-varying frequency-selective channels. *Wireless Personal Communications* **55**(4), 631–644.

11. Alshbatat, A. I. and L. Dong (2010). Performance analysis of mobile ad hoc unmanned aerial vehicle communication networks with directional antennas. *International Journal of Aerospace Engineering* **2010**.
12. Ro, K.-S., J.-S. Oh, and L. Dong (2010). A study on vehicular positioning technologies for smart/green cars. *Journal of Korea Institute of Information and Telecommunication Facilities Engineering* **9**(3), 92–101.
13. Dong, L. (2007). Open-loop beamforming for frequency-division duplex mobile wireless access. *IEEE Transactions on Vehicular Technology* **56**(4), 1845–1849.
14. Dong, L., H. Choo, R. W. Heath, and H. Ling (2005). Simulation of MIMO channel capacity with antenna polarization diversity. *IEEE Transactions on Wireless Communications* **4**(4), 1869–1873.
15. Dong, L., G. Xu, and H. Ling (2005). Predictive downlink beamforming for wideband CDMA over Rayleigh fading channels. *IEEE Transactions on Wireless Communications* **4**(2), 410–421.

Book Chapters

1. Brown, L. J., L. Dong, and A. G. Cerullo (2011). *Technology engineering and management in aviation: Advancements and discoveries*. IGI Global. Chap. The evaluation of wireless communication devices: To improve in-flight security on-board commercial aircraft, pp. 190–202.

Conference Papers

1. Xu, B., F. Zhang, L. Dong, and Y. Li (2014). Wideband propagation channel measurement in a hallway environment. In: *Proc. IEEE 2014 Texas Symposium on Wireless and Microwave Circuits and Systems (WMCS)*.
2. Liu, Y., L. Dong, and R. J. Marks II (2013). Joint reduction of out-of-band power and PAPR for non-contiguous OFDM systems. In: *Proc. IEEE Global Communications Conference (GLOBECOM)*.
3. Liu, Y. and L. Dong (2013). Network utility maximization of MIMO cognitive radio network with total interference-power constraints. In: *Proc. IEEE Wireless Communications and Networking Conference (WCNC)*.
4. Liu, Y., L. Dong, and R. J. Marks II (2013). Common control channel assignment in cognitive radio networks using potential game theory. In: *Proc. IEEE Wireless Communications and Networking Conference (WCNC)*.
5. Dong, L. (2013). Single carrier block transmission with cyclic prefix over doubly selective channels. In: *Proc. IEEE 2013 Texas Symposium on Wireless and Microwave Circuits and Systems (WMCS)*.
6. Dong, L., Y. Liu, and R. J. Marks II (2013). Reduction of out-of-band power and peak-to-average power ratio in OFDM-based cognitive radio using alternating projections. In: *Proc. IEEE 2013 Texas Symposium on Wireless and Microwave Circuits and Systems (WMCS)*.
7. Grantner, J., B. Bazuin, C. Fajardo, R. Hathaway, J. Al-shawawreh, L. Dong, M. Castanier, and S. Husain (2013). Linguistic model for engine power loss. In: *Proc. IEEE Symposium Series on Computational Intelligence (SSCI)*.
8. Dong, L. (2012). MIMO cognitive radio with channel covariance feedback. In: *Proc. IEEE International Conference on Communications (ICC)*.
9. Saleh, M. and L. Dong (2012). Adaptive security-aware scheduling using multi-agent system. In: *Proc. IEEE International Conference on Communications (ICC)*.
10. Grantner, J., B. Bazuin, L. Dong, J. Al-shawawreh, R. Hathaway, C. Fajardo, M. Castanier, and S. Husain (2012). Linguistic model for axle fatigue. In: *Proc. IEEE International Conference on Fuzzy Systems (FUZZ-IEEE)*.
11. Saleh, M. and L. Dong (2012). Real-time scheduling with security awareness for packet switched networks. In: *Proc. IEEE Radio and Wireless Week (RWW)*.

12. Xi, S., M. D. Zoltowski, Y. Zhao, and L. Dong (2011). Single-node MMSE for MMSE cooperative positioning. In: *Proc. SPIE - The International Society for Optical Engineering*. Vol. 8061.
13. Grantner, J., B. Bazuin, L. Dong, J. Al-shawawreh, R. Hathaway, C. Fajardo, M. P. Castanier, and S. Hussain (2010). Condition based maintenance for light trucks. In: *Proc. IEEE International Conference on Systems, Man, and Cybernetics*.
14. Alja'afreh, A. and L. Dong (2010). Ground vehicle classification based on hierarchical hidden Markov model and Gaussian mixture model using wireless sensor networks. In: *Proc. IEEE International Conference on Electro/Information Technology (EIT)*.
15. Alja'afreh, A. and L. Dong (2010). An evaluation of feature extraction methods for vehicle classification based on acoustic signals. In: *Proc. IEEE International Conference on Networking, Sensing and Control (ICNSC)*.
16. Alja'afreh, A. and L. Dong (2010). Cooperative detection of moving targets in wireless sensor network based on fuzzy dynamic weighted majority voting decision fusion. In: *Proc. IEEE International Conference on Networking, Sensing and Control (ICNSC)*.
17. Alja'afreh, A. and L. Dong (2010). Hidden Markov model based classification approach for multiple dynamic vehicles in wireless sensor networks. In: *Proc. IEEE International Conference on Networking, Sensing and Control (ICNSC)*.
18. Alshbatat, A. and L. Dong (2010). Adaptive MAC protocol for UAV communication networks using directional antennas. In: *Proc. IEEE International Conference on Networking, Sensing and Control (ICNSC)*.
19. Alshbatat, A. and L. Dong (2010). Cross layer design for mobile ad-hoc unmanned aerial vehicle communication networks. In: *Proc. IEEE International Conference on Networking, Sensing and Control (ICNSC)*.
20. Saleh, M. S. and L. Dong (2010). Comparing FCFS & EDF scheduling algorithms for real-time packet switching networks. In: *Proc. IEEE International Conference on Networking, Sensing and Control (ICNSC)*.
21. Xi, S., M. D. Zoltowski, and L. Dong (2010). Iterative MMSE cooperative localization with incomplete pair-wise range measurements. In: *Proc. SPIE - The International Society for Optical Engineering*. Vol. 7706.
22. Wu, L., Y. Fu, and L. Dong (2009). End-to-end throughput optimization in multi-hop wireless ad hoc networks. In: *Proc. 15th Asia-Pacific Conference on Communications*.
23. Dong, L. (2009). Cooperative network localization via node velocity estimation. In: *Proc. IEEE Wireless Communications and Networking Conference (WCNC)*.
24. Dong, L. (2009). Turbo equalization with channel prediction and iterative channel estimation. In: *Proc. IEEE Wireless Communications and Networking Conference (WCNC)*.
25. Dong, L. (2008). Doppler measurements rendering random routing. In: *Proc. 42nd Asilomar Conference on Signals, Systems, and Computers*.
26. Zhao, Y., L. Dong, J. Wang, B. Hu, and Y. Fu (2008). Implementing indoor positioning system via Zig-Bee devices. In: *Proc. 42nd Asilomar Conf. Signals, Systems, and Computers*.
27. Mousavinezhad, S. H. and L. Dong (2007). Digital signal processing: theory and practical considerations. In: *Proc. ASEE Annual Conference & Exposition*.
28. Dong, L. and F. L. Severance (2007). Position estimation with moving beacons in wireless sensor networks. In: *Proc. IEEE Wireless Communications and Networking Conference (WCNC)*.
29. Chen, Y. M., L. Dong, and J.-S. Oh (2007). Real-time video relay for UAV traffic surveillance systems through available communication networks. In: *Proc. IEEE Wireless Communications and Networking Conference (WCNC)*.

30. Khambekar, N. V., L. Dong, and V. Chaudhary (2007). Utilizing OFDM guard interval for spectrum sensing. In: *Proc. IEEE Wireless Communications and Networking Conference (WCNC)*.
31. Ro, K., J.-S. Oh, and L. Dong (2007). Lessons learned: application of small UAV for urban highway traffic monitoring. In: *Proc. 45th AIAA Aerospace Sciences Meeting and Exhibit*.
32. Dong, L. and Y. Zhao (2006). Frequency-domain Turbo equalization for single carrier mobile broadband systems. In: *Proc. IEEE Military Communications Conference (MILCOM)*.
33. Dong, L. (2005). Robust beamforming for FDD mobile systems over Rayleigh fading channels. In: *Proc. IEEE International Conference on Electro Information Technology (EIT)*.
34. Dong, L. and M. Atashbar (2005). An FPGA experience in ASIC design. In: *Proc. ASEE North Central Section Spring Conference*.
35. Dong, L., T. Li, and Y.-F. Huang (2003). Opportunistic transmission scheduling for multiuser MIMO systems. In: *Proc. IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*. Vol. 5, pp.63–68.
36. Dong, L., H. Ling, and R. W. Heath (2002). Multiple-input multiple-output wireless communication systems using antenna pattern diversity. In: *Proc. IEEE Global Telecommunications Conference (GLOBECOM)*, pp.997–1001.
37. Dong, L., G. Xu, and H. Ling (2001). Prediction of fast fading mobile radio channels in wideband communication systems. In: *Proc. IEEE Global Telecommunications Conference (GLOBECOM)*, pp.3287–3291.
38. Dong, L., G. Xu, and H. Ling (2001). Subspace-based channel estimation for wideband CDMA communication systems. In: *Proc. IEEE Military Communications Conference (MILCOM)*, pp.1205–1209.
39. Dong, L. and G. Xu (2001). Dynamic uplink power control for cellular radio systems over fast fading channel. In: *Proc. IEEE Vehicular Technology Conference (VTC)*, pp.2849–2853.

Ph.D. Dissertation

1. Dong, L. (2002). Adaptive antenna systems for mobile broadband communications. *Ph.D. Dissertation, The University of Texas at Austin*.