

ZHANGYU GUAN

CONTACT INFORMATION

221 Davis Hall, University at Buffalo, Buffalo, NY 14260

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Webpage: <http://www.acsu.buffalo.edu/~guan>

STATUS: US Permanent Resident (Green Card holder)

EDUCATIONAL BACKGROUND

Shandong University, Jinan, China **2005-2010**

School of Information Science and Engineering

Ph.D. in Information and Communication System

Thesis: “*Cross-layer Design Based on Game Theory in Cognitive and Cooperative Wireless Networks*”

Advisor: Prof. Dongfeng Yuan, Prof. Tommaso Melodia (Joint Advisor)

State University of New York (SUNY) at Buffalo, USA **2009-2010**

Department of Electrical Engineering

Visiting Ph.D. Student

Thesis: “*Dynamic Spectrum Management in Cognitive and Cooperative Wireless Networks*”

Advisor: Prof. Tommaso Melodia

Shandong University, Jinan, China **1999-2003**

School of Information Science and Engineering

B.S. in Communication Engineering

Thesis: “*Short Range Wireless Data Communication*”

Advisor: Prof. Yongsheng Fu

EMPLOYMENT HISTORY

Assistant Professor **Aug. 2018 - present**

Dept. of Electrical Engineering

University at Buffalo, The State University of New York

Associate Research Scientist **Nov. 2016 - Aug. 2018**

Dept. of Electrical and Computer Engineering

Northeastern University

Advisor: Prof. Tommaso Melodia

Postdoctoral Research Associate **Sept. 2015 - Oct. 2016**

Dept. of Electrical and Computer Engineering

Northeastern University

Advisor: Prof. Tommaso Melodia

Lecturer **March 2011 - Jan. 2015**

School of Information Science and Engineering

Shandong University

Postdoctoral Research Associate **Nov. 2012 - Aug. 2015**

Dept. of Electrical Engineering

University at Buffalo, The State University of New York

Advisor: Prof. Tommaso Melodia

RESEARCH INTERESTS

- **Network Design Automation:** Software-defined Networking, Operating System for Wireless Networks, AI/ML for Wireless, Digital Twin for Wireless
- **New Spectrum Technologies:** Spectrum Coexistence, mmWave/THz, Drone Networks
- **Wireless Network Security:** Protocol Jamming/Anti-jamming, Protocol-agnostic Sensing
- **Experimentation Platform:** OneLab, UB NeXT

PUBLICATIONS

Graduate student co-authors are underlined

*Corresponding authors

Submitted and Working Publications

1. S. K. Moorthy, **Z. Guan**, “ESN Reinforcement Learning for Spectrum and Flight Control in THz-Enabled Drone Networks,” submitted for journal publication, Dec. 2020.

Journals and Magazines

2. **Z. Guan***, L. Bertizzolo, E. Demirors, T. Melodia, “WNOS: Enabling Principled Software-Defined Wireless Networking,” *IEEE/ACM Transactions on Networking*, accepted for publication, March 2021.
3. N. Cen, **Z. Guan**, T. Melodia, “Compressed Sensing based Low-Power Multi-view Video Coding and Transmission in Wireless Multi-path Multi-hop Networks,” *IEEE Transactions on Mobile Computing*, accepted for publication, Dec. 2020.
4. S. K. Moorthy, **Z. Guan***, “Beam Learning in MmWave/THz-band Drone Networks Under In-Flight Mobility Uncertainties,” *IEEE Transactions on Mobile Computing*, accepted for publication, Oct. 2020.
5. L. Bonati, S. D’Oro, L. Bertizzolo, E. Demirors, **Z. Guan**, S. Basagni, T. Melodia, “CelIOS: Zero-touch Softwarized Open Cellular Networks,” *Computer Networks (Elsevier)*, vol. 180, pp. 1-13, Oct. 2020. (Citations: 4)
6. **Z. Guan***, N. Cen, T. Melodia, S. Pudlewski, “Joint Power, Association and Flight Control for Massive-MIMO Self-Organizing Flying Drones,” *IEEE/ACM Transactions on Networking*, vol. 28, no. 4, pp. 1491-1505, August 2020. (Citations: 1)
7. **Z. Guan***, H. Kulhandjian, T. Melodia, “Stochastic Channel Access in Underwater Networks With Statistical Interference Modeling,” *IEEE Transactions on Mobile Computing*, accepted, May 2020.
8. N. Cen, Jithin Jagannath, Simone Moretti, **Z. Guan**, Tommaso Melodia, “LANET: Visible-Light Ad Hoc Networks”, *Ad Hoc Networks (Elsevier)*, vol. 84, pp. 107-123, 2019. (Citations: 17)
9. N. Cen, **Z. Guan**, T. Melodia, “Inter-view Motion Compensated Joint Decoding of Compressive-Sampled Multi-view Video Streaming,” *IEEE Transactions on Multimedia*, vol. 19, no. 6, pp. 1117-1126, June 2017. (Citations: 9)
10. **Z. Guan** and T. Melodia, “The Value of Cooperation: Minimizing User Costs in Multi-broker Mobile Cloud Computing Networks,” *IEEE Transactions on Cloud Computing*, vol. 5, no. 4, pp. 780-791, Oct.-Dec. 2017. (Citations: 13)

11. L. Zhang, **Z. Guan**, and T. Melodia, "United Against the Enemy: Anti-jamming Based on Cross-layer Cooperation in Wireless Networks," *IEEE Transactions on Wireless Communications*, vol. 15, no. 8, pp. 5733-5747, Aug. 2016. (Citations: 27)
12. **Z. Guan**, G. Enrico Santagati, and T. Melodia, "Distributed Algorithms For Joint Channel Access and Rate Control in Ultrasonic Intra-body Networks," *IEEE/ACM Transactions on Networking*, vol. 24, no. 5, pp. 3109-3122, Oct. 2016. (Citations: 6)
13. **Z. Guan**, T. Melodia, D. Yuan, and D. Pados, "Distributed Resource Management for Cognitive Ad Hoc Networks with Cooperative Relays," *IEEE/ACM Transactions on Networking*, vol. 24, no. 3, pp. 1675-1689, June 2016. (Citations: 16)
14. **Z. Guan**, T. Melodia, and G. Scutari, "To Transmit or Not to Transmit? Distributed Queueing Games for Infrastructureless Wireless Networks," *IEEE/ACM Transactions on Networking*, vol. 24, no. 2, pp. 1153-1166, April 2016. (Citations: 19)
15. S. Pudlewski, N. Cen, **Z. Guan**, and T. Melodia, "Video Transmission over Lossy Wireless Networks: A Cross-layer Perspective," *IEEE Journal on Selected Topics in Signal Processing*, vol. 9, no. 1, pp. 6-22, Feb. 2015. (Citations: 50)
16. **Z. Guan** and T. Melodia, "Cloud-assisted Smart-camera Networks for Energy-efficient 3D Video Streaming," *IEEE Computer*, vol. 47, no. 5, pp. 60-66, May 2014. (Citations: 12)
17. **Z. Guan**, D. Yuan, H. Zhang, and L. Ding, "Cooperative Bargaining Solution for Efficient and Fair Spectrum Management in Cognitive Wireless Networks," *International Journal of Communication Systems*, vol. 27, no. 11, pp. 3441-3459, Nov. 2014. (Citations: 8)
18. Jiali Xu, **Z. Guan**, "Joint Relay Selection and Cognitive Spectrum Access Based on Genetic Algorithm in Cooperative Wireless Networks," *The Journal of New Industrialization*, vol. 5, 2014 (in Chinese). (Citations: 6)
19. **Z. Guan**, T. Melodia, and D. Yuan, "Jointly Optimal Rate Control and Relay Selection for Cooperative Wireless Video Streaming," *IEEE/ACM Transactions on Networking*, vol. 21, no. 4, pp. 1173-1186, Aug. 2013. (Citations: 36)
20. **Z. Guan**, D. Yuan, and H. Zhang, "Optimal and Fair Resource Allocation for Multiuser Wireless Multimedia Transmissions," *EURASIP Journal on Wireless Communications and Networking*, 2009. (Citations: 14)

Conference and Workshop Papers

21. Jiangqi Hu, Sabarish Krishna Moorthy, Ankush Harindranath, **Z. Guan**, N. Mastronarde, E. S. Bentley, and S. Pudlewski, "SwarmShare: Mobility-Resilient Spectrum Sharing for Swarm UAV Networking in the 6 GHz Band," in *Proc. of IEEE International Conference on Sensing, Communication and Networking (SECON)*, Virtual Conference, July 2021.
22. Sabarish Krishna Moorthy, **Z. Guan**, S. Pudlewski, E. S. Bentley, "FlyBeam: Echo State Learning for Joint Flight and Beamforming Control in Wireless UAV Networks," in *Proc. of IEEE International Conference on Communications (ICC)*, Virtual/Montreal, Canada, 14-24 June, 2021.
23. M. McManus, **Z. Guan**, E. S. Bentley, S. Pudlewski, "Experimental Analysis of Cross-Layer Sensing for Protocol-Agnostic Packet Boundary Recognition," in *Proc. of IEEE INFOCOM Workshop on Wireless Sensor, Robot and UAV Networks (WiSARN)*, Virtual Conference, May 2021.
24. Sabarish Krishna Moorthy, **Z. Guan**, "FlyTera: Echo State Learning for Joint Access and Flight Control in THz-enabled Drone Networks," in *Proc. of IEEE International Conference on Sensing, Communication and Networking (SECON)*, Como, Italy, June 2020. (AR: 28%)

25. Sabarish Krishna Moorthy, **Z. Guan**, “LeTera: Stochastic Beam Control Through ESN Learning in Terahertz-Band Wireless UAV Networks,” in *Proc. of IEEE INFOCOM Workshop on Wireless Communications and Networking in Extreme Environments (WCNEE)*, Toronto, Canada, July 2020. (**Best Paper Award Runner-Up**)
26. A. Anand, R. S. Suresh Kumar, F. Malandra, Z. Sun, **Z. Guan***, “UBSpot: A Universal Broadband Flying Hotspot Experimental Testbed Toward Programmable Aerial-Ground Wireless Networks,” in *Proc. of IEEE Internet of Things (IoT) Summit at Radio & Wireless Week (RWW2020)*, San Antonio, Texas, USA, 26-27 January 2020. (Citations: 1)
27. L. Bertizzolo, S. D’Oro, L. Ferranti, L. Bonati, E. Demirors, **Z. Guan**, T. Melodia, S. Pudlewski, “SwarmControl: An Automated Distributed Control Framework for Self-Optimizing Drone Networks,” in *Proc. of IEEE Conference on Computer Communications (INFOCOM)*, Toronto, Canada, July 2020. (AR: 20%, Citations: 2)
28. L. Bertizzolo, E. Demirors, **Z. Guan**, T. Melodia, “CoBeam: Beamforming-based Spectrum Sharing With Zero Cross-Technology Signaling for 5G Wireless Networks,” in *Proc. of IEEE Conference on Computer Communications (INFOCOM)*, Toronto, Canada, July 2020. (AR: 20%, Citations: 3)
29. **Z. Guan** and Tejas Kulkarni, “On the Effects of Mobility Uncertainties on Wireless Communications Between Flying Drones in the mmWave/THz Bands,” in *Proc. of IEEE INFOCOM Workshop on Wireless Communications and Networking in Extreme Environments (WCNEE)*, Paris, France, 29 April - 2 May 2019. (Citations: 8)
30. N. Cen, N. Dave, E. Demirors, **Z. Guan**, T. Melodia, “LiBeam: Throughput-Optimal Cooperative Beamforming for Indoor Visible Light Networks,” in *Proc. of IEEE Conference on Computer Communications (INFOCOM)*, Paris, France, 29 April - 2 May 2019. (AR: 19.7%, Citations: 5)
31. **Z. Guan**, Nan Cen, T. Melodia, Scott Pudlewski, “Self-Organizing Flying Drones with Massive MIMO Networking,” in *Proc. of Mediterranean Ad Hoc Networking Workshop (Med-Hoc-Net)*, Capri, Italy, June 2018. (Citations: 10)
32. **Z. Guan**, L. Bertizzolo, E. Demirors, and T. Melodia, “WNOS: An Optimization-based Wireless Network Operating System,” in *Proc. of ACM International Symposium on Mobile Ad Hoc Networking and Computing (MobiHoc)*, Los Angeles, USA, June 2018. (AR: 16%, Citations: 10)
33. **Z. Guan**, L. Bertizzolo, E. Demirors, and T. Melodia, “Demo Abstract: WNOS: Software-defined Generation of Distributed Optimal Control Programs for Wireless Networks,” in *Proc. of IEEE Conference on Computer Communications (INFOCOM)*, Honolulu, HI, April 2018.
34. **Z. Guan** and T. Melodia, “CU-LTE: Spectrally-Efficient and Fair Coexistence between LTE and Wi-Fi in Unlicensed Bands,” *Proc. of IEEE Conference on Computer Communications (INFOCOM)*, San Francisco, CA, April 2016. (AR: 18.25%, Citations: 101)
35. N. Cen, **Z. Guan**, and T. Melodia, “Multiview Video Streaming Based on Compressed Sensing: Architecture Design and Network Optimization,” in *Proc. of ACM International Symposium on Mobile Ad Hoc Networking and Computing (MobiHoc)*, Hangzhou, China, June 2015. (AR: 14.8%, Citations: 8)
36. **Z. Guan**, G. Enrico Santagati, and T. Melodia, “Ultrasonic Intra-body Networking: Interference Modeling, Stochastic Channel Access and Rate Control,” in *Proc. of IEEE Conference on Computer Communications (INFOCOM)*, Hong Kong S.A.R., PRC, April 2015. (AR: 19%, Citations: 16)
37. J. Shi, **Z. Guan**, C. Qiao, T. Melodia, D. Koutsonikolas, and G. Challen, “Crowdsourcing Access Network Spectrum Allocation Using Smartphones,” Poster in *ACM International Workshop on Mobile Computing Systems and Applications (HotMobile)*, Santa Fe, New Mexico, Feb. 2015.

38. J. Shi, **Z. Guan**, C. Qiao, T. Melodia, D. Koutsonikolas, and G. Challen, "Crowdsourcing Access Network Spectrum Allocation Using Smartphones," in *Proc. of ACM Workshop on Hot Topics in Networks (HotNets)*, Los Angeles, California, USA, Oct. 2014. (AR: 22%, Citations: 27)
39. L. Zhang, **Z. Guan**, T. Melodia, "Cooperative Anti-jamming for Infrastructure-less Wireless Networks with Stochastic Relaying," in *Proc. of IEEE International Conference on Computer Communications (INFOCOM)*, Toronto, Canada, April 2014. (AR: 19.4%, Citations: 14)
40. N. Cen, **Z. Guan**, and T. Melodia, "Joint Decoding of Independently Encoded Compressive Multi-view Video Streams," in *Proc. of Picture Coding Symposium (PCS)*, San Jose, CA, Dec. 2013. (Citations: 10)
41. **Z. Guan**, T. Melodia, and G. Scutari, "Distributed Queuing Games in Interference-limited Wireless Networks," in *Proc. of IEEE International Conference on Communications (ICC)*, Budapest, Hungary, June 2013. (Citations: 11)
42. **Z. Guan**, T. Melodia, and D. Yuan, "Stochastic Channel Access for Underwater Acoustic Networks with Spatial and Temporal Interference Uncertainty," in *Proc. of ACM International Conference on UnderWater Networks and Systems (WUWNet)*, Los Angeles, CA, USA, Nov. 2012. (Citations: 15)
43. **Z. Guan**, T. Melodia, D. Yuan, and D. A. Pados, "Distributed Spectrum Management and Relay Selection in Interference-Limited Cooperative Wireless Networks," in *Proc. of ACM International Conference on Mobile Computing and Networking (MobiCom)*, Las Vegas, Nevada, USA, September 2011. (AR: 13.6%, Citations: 43)
44. **Z. Guan**, T. Melodia, and D. Yuan, "Optimizing Cooperative Video Streaming in Wireless Networks," in *Proc. of IEEE International Conference on Sensor, Mesh and Ad Hoc Communications and Networks (SECON)*, Salt Lake City, Utah, June 2011. (AR: 28%, Citations: 13)
45. **Z. Guan**, L. Ding, T. Melodia, and D. Yuan, "On the Effect of Cooperative Relaying on the Performance of Video Streaming Applications in Cognitive Radio Networks," in *Proc. of IEEE International Conference on Communications (ICC)*, Kyoto, Japan, June 2011. (Citations: 39)
46. **Z. Guan**, D. Yuan, and H. Zhang, "Co-opetition Strategy for Collaborative Multiuser Multimedia Resource Allocation," in *Proc. of IEEE Intl. Conf. on Communications (ICC)*, Dresden, Germany, June 2009. (Citations: 4)
47. **Z. Guan**, D. Yuan, and H. Zhang, "Novel Coopetition Paradigm Based on Bargaining Theory for Collaborative Multimedia Resource Management," in *Proc. of IEEE Personal, Indoor and Mobile Radio Communications Symposium (PIMRC)*, Cannes, France, Sept. 2008. (Citations: 9)
48. Q. Jin, D. Yuan, and **Z. Guan**, "Distributed Geometric-Programming-Based Power Control in Cellular Cognitive Radio Networks," in *Proc. of IEEE Vehicular Technology Conference (VTC2009-Spring)*, Barcelona, Spain, April 2009. (Citations: 36)

Book Chapter

49. **Z. Guan**, "Multiuser Multimedia Radio Resource Management Based on Game Theory," in **Cross-layer Design in Wireless Communication Networks: From Theory to Applications (in Chinese)**, Haixia Zhang, Dongfeng Yuan, Yanbo Ma, The People Post and Telecommunications Press, pp. 24-56, 2010.

PATENT APPLICATIONS

-
1. T. Melodia, Z. Guan, Distributed Wireless Network Operating System, INV-18026, June 6, 2019.
 2. T. Melodia, Z. Guan, Method for Sharing of Unlicensed Radio Frequency Bands by Cellular LTE and WiFi Networks, US 9924372, Granted, March 2018.

3. Z. Guan, T. Melodia, A Medium Access Control Scheme for Ultrasonic Communications in the Human Body Based on Second Order Statistics, PCT/US14/58486, September 2014.
4. D. Yuan, J. Zheng, Q. Jin, Z. Guan, and W. Liu, *A Novel Inverse Method for Control Message Parsing*, No. ZL200710015217.X, China Invention Patent.
5. D. Yuan, F. Chen, K. Zhao, B. Wei, Y. Chong, Z. Guan, and Q. Miao, *An Adaptive Rate Control Method for Wireless Video Monitoring*, No. ZL200910014708.1, China Invention Patent.
6. D. Yuan, B. Wei, K. Zhao, Y. Chong, F. Chen, Z. Guan, and Q. Miao, *A Novel Design Method of HPI Time Sequence Conversion Circuit for ARM and Video Encoder Chip Connection*, No. ZL200910014500.x, China Invention Patent.
7. D. Yuan, Y. Chong, K. Zhao, B. Wei, Z. Shi, Z. Guan, and Q. Miao, *A Novel Design Method of Real Time Video Monitoring Terminal*, No. ZL200910014708.1, China Invention Patent.

SPONSORED RESEARCH

1. "SwarmControl-AI: AI-Enabled Autonomous Control of Swarm UAV Networks," **Sole PI**, AFRL Visiting Faculty Research Program (VFRP) Award, \$18,540, May 2021 - Aug. 2021.
2. "OVERCOME: Internet Service Delivered via CBRS to a Historic, Under-resourced Community Adjacent to the Buffalo Niagara Medical Campus Known as the Fruit Belt Neighborhood", **co-PI**, NSF/US Ignite, \$300,000, April 2021 - March 2022.
3. "Extension: DeepWave: Automated Radio Signal and Protocol Classification Through Deep Learning for Waveform Vulnerability Discovery," **PI**, \$241,752 (50%), Air Force Research Laboratory (AFRL), 2020 - 2021, (co-PI: Nicholas Mastronarde).
4. "SwarmAPI: An Evolved Network Abstraction for Automating the Design of Swarm Control Programs," **Sole PI**, AFRL Visiting Faculty Research Program (VFRP) Extension Grant, \$10,000, Sept. 2020 - Nov. 2020.
5. "SwarmAPI: An Evolved Network Abstraction for Automating the Design of Swarm Control Programs," **Sole PI**, AFRL Visiting Faculty Research Program (VFRP) Award, \$11,700, May 2020 - July 2020.
6. "Toward Elastic, Programmable, Optimized Tactical Swarm Networking," **Sole PI**, subcontract from Northeastern University, \$19,957, May-August 2020.
7. "DeepWave: Automated Radio Signal and Protocol Classification Through Deep Learning for Waveform Vulnerability Discovery," **Sole PI**, Air Force Research Laboratory (AFRL), \$100,000, 2020-2021.
8. "Wireless Network Security in the Presence of Advanced Protocol Attacks," **Sole PI**, AFRL Visiting Faculty Research Program (VFRP) Extension Grant, \$10,000, Sept. 2019 - Oct. 2019.
9. "Wireless Network Security in the Presence of Advanced Protocol Attacks," **Sole PI**, AFRL Visiting Faculty Research Program (VFRP) Award, \$16,498, May 2019 - July 2019.
10. "Student Travel Grant for 2019 IEEE International Conference on Sensing, Communication and Networking (IEEE SECON)", **Sole PI**, \$7,000, NSF, April 2019 - March 2020.
11. "SDIoBT: Software-Defined Internet of Battlefield Things With Distributed and Cognitive Autonomous Control," **co-PI**, \$333,333, Army Research Office, 2017.
12. "Distributed Optimization Theory in Cooperative Wireless Networks," **PI**, National Natural Science Foundation of China (NSFC), 2012 - 2014.
13. "Optimizing Cognitive and Cooperative Distributed Wireless Networks for Green Communications," **PI**, Chinese Ministry of Education, 2012 - 2014.

14. “Joint Spectrum and Energy Optimization in Wireless Networks Based on Non-convex Programming,” **PI**, Science and Technology Agency of Shandong Province, China, 2013 - 2015.
15. “Distributed Communication Networking Based on Variational Inequality Theory,” **PI**, China Postdoctoral Science Foundation, 2012 - 2014.
16. “Interference Management in Distributed Cooperative Wireless Networks,” **PI**, Shandong University Research Foundation, China, 2012 - 2013.

HONORS & AWARDS

- Best Paper Award Runner-Up, IEEE INFOCOM Workshop on Wireless Communications and Networking in Extreme Environments (WCNEE), Toronto, Canada, July 2020.
- Distinguished TPC Member Award, IEEE International Conference on Computer Communications (INFOCOM) 2018
- Outstanding Reviewer Award, Elsevier Journal on Ad Hoc Networks 2014
- Award for Science and Technology Progress (1st Class), Shandong Province, China 2013
- Shandong Natural Science Award (2nd Class), Shandong Province, China 2012
- AMD Excellent Research Scholarship, Shandong University 2009
- Excellent Social Practice Scholarship (for project of “wireless multimedia monitoring system development”), Shandong University 2007
- Excellent University Counselor, Shandong University 2005

PROFESSIONAL ACTIVITIES AND SERVICES

Leadership Positions

- TPC Chair, IEEE DCOSS Workshop on Wireless Communications and Networking in Extreme Environments (WCNEE), July 2021
- Publicity Co-Chair, IEEE International Conference on Wireless and Mobile Computing, Networking and Communications (WiMob), Oct. 2021
- Organizing Committee Chair, 3rd Buffalo Day for 5G and Wireless Internet of Things, Buffalo, NY, Nov. 2021
- TPC Co-Chair for IEEE INFOCOM Workshop on Wireless Sensor, Robot and UAV Networks (WiSARN 2021), 10-13 May 2021, Virtual Conference
- Workshop Co-Chair for International Conference on Distributed Computing in Sensor Systems (DCOSS 2021), Coral Bay, Pafos, Cyprus June 7 – 9, 2021
- General Co-Chair, 1st IEEE International Workshop on Communication and Networking for Swarms Robotics (RoboCom), January 2021, Virtual Conference
- Chair for Information System (EDAS) for IEEE Consumer Communications Networking Conference (CCNC) 2021
- Organizing Committee Chair, 2nd Buffalo Day for 5G and Wireless Internet of Things, Nov. 20, 2020, Virtual Event
- Student Travel Grants Chair, IEEE Sensor, Mesh and Ad Hoc Communications and Networks (SECON), Como, Italy, June 2020
- TPC Chair, IEEE INFOCOM Workshop on Wireless Communications and Networking in Extreme Environments (WCNEE), Beijing, China, April 2020
- Organizing Committee Chair, 1st Buffalo Day for 5G and Wireless Internet of Things, Nov. 22, 2019

- Student Travel Grants Chair, IEEE Sensor, Mesh and Ad Hoc Communications and Networks (SECON), Boston, June 2019
- TPC Vice-chair for Information System (EDAS) for IEEE International Symposium on Local and Metropolitan Area Networks (LANMAN), Osaka, Japan, June 12-14, 2017
- TPC Chair for MOBIMEDIA Workshop on QoE-Aware Resource Allocation for Multimedia Transmission (QoE-RAMT), Chongqing, China, July, 2017

Associate Editor

- Guest Editor for MDPI Drones Special Issue “Mobile Fog and Edge Computing in Drone Swarms”, Sept. 2020
- Computer Networks (Elsevier), Sept. 2019 - present

Technical Program Committee Membership

- IEEE INFOCOM 2016-2022
- IEEE MASS, 2017-2019, 2021
- IEEE/ACM IWQoS 2020-2021
- IEEE GLOBECOM, 2015-2021
- IEEE ICC, 2018-2021
- IEEE MILCOM, 2016-2019, 2021
- IEEE PIMRC, 2013-2017, 2020-2021
- IEEE ICNC, 2012-2020
- IEEE WCNC, 2012, 2014-2021
- IEEE VTC, 2011, 2015, 2021
- IEEE WONS, 2013-2014, 2016-2020
- IEEE IPCCC, 2015-2021
- IFIP NTMS, 2011-2012, 2014-2016, 2018-2020
- IEEE SwarmNet, 2019-2021
- IEEE MSN 2021

Reviewer Activity

- **Proposals:** SUNY IITG - Innovative Instructional Technology Grants
- **IEEE Journals:** IEEE Communications Magazine, IEEE Network Magazine, IEEE Journal on Selected Areas in Communications, IEEE/ACM Transactions on Networking, IEEE Transactions on Wireless Communications, IEEE Transactions on Multimedia, IEEE Transactions on Circuits and Systems for Video Technology, IEEE Transactions on Signal Processing, IEEE Transactions on Mobile Computing, IEEE Transactions on Parallel and Distributed Systems, IEEE Transactions on Computers, IEEE Transactions on Vehicular Technology, IEEE Transactions on Industrial Informatics, IEEE Systems Journal, Journal of Sensors, IEEE Wireless Communications Letters, IEEE Communications Letters
- **Elsevier Journals:** Elsevier Journal on Ad Hoc Networks (*2014 Outstanding Reviewer Award*), Elsevier Journal on Computer Networks
- **Wiley Journals:** International Journal of Communication Systems, Transactions on Emerging Telecommunications Technologies
- **Other Journals:** EURASIP Journal on Advances in Signal Processing, Chinese Journal on Communications, Chinese Journal of Electronics, Science China (Information Sciences)
- **Conferences:** INFOCOM, SECON, MASS, ICC, GLOBECOM, PIMRC, NTMS, WUWNet, MILCOM, WCNC, MSN, Networking

Departmental, School and University Services

- Member of University Committee on 5G 2019-2020
- Open House for High School Students Nov. 2019, May 2019, April 2019, Oct. 2018
- Open House for Newly Admitted Undergraduate Students March 2019
- MS Thesis Committee Member for Christopher Tjahjadi-Lopez (Advisor: Prof. Josep Jornet) May 2019
- MS Thesis Committee Member for Viswajith Singamaneni (Advisor: Prof. Josep Jornet) May 2019
- Judge for SEAS Graduate Student Poster Competition April 2019
- Judge for EE-Dept. Poster Competition March 2019

STUDENT SUPERVISION

Ph.D. Students

- **Sabarish Krishna Moorthy** (Network Design Automation, New Spectrum Technologies, started Jan. 2019)
- **Jiangqi Hu** (New Spectrum Technologies, started Aug. 2019)
- **Maxwell Mcmanus** (Wireless Network Security, co-advised with Dr. Scott Pudlewski from Georgia Tech Research Institute (GTRI), started from Jan. 2020)

Thesis M.S. Students

- **Ankush Hari** (Programmable Networks, May 2020 - May 2021)
- **Chencheng Lu** (Programmable Networks, May 2020 - May 2021)
- **Ranjith Samuel Suresh Kumar** (Programmable Networks, Jan. 2020 - Jan. 2021)

SCHOLARLY TALKS

- “Towards Principled Programmable Wireless Networks with Optimized Spectrum Coexistence”, NSF Spectrum Innovation Initiative Workshop, Jan. 6, 2021.
- “Towards End-to-End Radio Frequency Sensing for Secure Wireless Networking in the Presence of Advanced DoS Attacks”, Air Force Research Laboratory (AFRL), August 19, 2020.
- “Automating the Design of Autonomous Cross-Layer Control Programs for Swarm UAV Networks”, Air Force Research Laboratory (AFRL), July 9, 2020.
- “Wireless Network Security in the Presence of Advanced Protocol Attacks”, Air Force Research Laboratory (AFRL), Aug. 9, 2019.
- “On the Effects of Mobility Uncertainties on Wireless Communications Between Flying Drones in the mmWave/THz Bands,” IEEE INFOCOM Workshop on Wireless Communications and Networking in Extreme Environments (WCNEE), April 2019.
- “WNOS: Toward an Optimization-based Wireless Network Operating System”, Wireless Network Seminar, Northeastern University, Jan. 26, 2018.
- “Toward Spectrally-efficient and Secure Cognitive Internet of Things (IoT)”, Invited Talk on Undergraduate Course “Wireless Networking Technologies: Design & Simulation”, Northeastern University, MA, June 5, 2017.
- “CU-LTE: Spectrally-efficient and Fair Coexistence between LTE and Wi-Fi in Unlicensed Bands,” Presentation on IEEE Conference on Computer Communications (INFOCOM), San Francisco, CA, April 14, 2016.

- “Logarithmic Expectation of the Sum of Exponential Random Variables for Wireless Communication Performance Evaluation,” Presentation on IEEE VTC-Spring, Sept. 2015.
- “Software-defined, Cognitive and Cooperative Wireless Networks,” Wireless Networks and Embedded Systems Lab (WiNES) Workshop, Northeastern University, July 2015.
- “To Transmit or Not to Transmit? Distributed Queueing Games for Infrastructureless Wireless Networks,” Invited Seminar, Northeastern University, April 2015.
- “On the Effect of Cooperative Relaying on the Performance of Video Streaming Applications in Cognitive Radio Networks,” Presentation on IEEE ICC, June 2011.
- “Cross-layer Design Based on Game Theory in Cognitive and Cooperative Wireless Networks,” Invited Seminar, Shandong University, China, October 2010.

PROFESSIONAL MEMBERSHIP

- IEEE (Institute of Electrical and Electronics Engineers)
- IEEE Communications Society
- ACM (Association for Computing Machinery)

COURSES TAUGHT

- | | |
|--------------------|---|
| Spring 2021 | EE 434/534: Principles of Networking
(for undergraduate/graduate students, enrollment: 42) |
| Fall 2020 | EE 701: The Internet of Things: From Technology to Applications, University at Buffalo
(for graduate students, enrollment: 12) |
| Spring 2020 | EE 459/559: Programmable Networks, University at Buffalo
(for undergraduate/graduate students, enrollment: 27) |
| Fall 2019 | EE 701: The Internet of Things: From Technology to Applications, University at Buffalo
(for graduate students, enrollment: 25) |
| Spring 2019 | EE 459/559: Programmable Networks, University at Buffalo
(for undergraduate/graduate students, enrollment: 24) |
| Fall 2017 | EECE 2540: Fundamentals of Networks, Northeastern University
(for undergraduate students, enrollment: 40) |
| Fall 2016 | EECE 2540: Fundamentals of Networks, Northeastern University
(for undergraduate students, enrollment: 75) |