

# TINGJUN CHEN

Assistant Professor of Electrical and Computer Engineering, Duke University

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## RESEARCH INTERESTS

Wireless networking, next-generation wireless systems, optical-wireless networks, edge cloud and computing, Internet-of-Things (IoT), mobile and embedded systems, research platforms and testbeds

## EDUCATION

- 2014–2020 **Columbia University**, New York, NY  
*Ph.D.* in Electrical Engineering  
*Dissertation:* Algorithms and Experimentation for Future Wireless Networks: From Internet-of-Things to Full-Duplex, **ACM SIGMOBILE Doctoral Dissertation Award Runner-up**, **Columbia University Eli Jury Award**  
*M.Phil.* and *M.S.* in Electrical Engineering  
*Advisor:* Prof. Gil Zussman
- 2010–2014 **Tsinghua University**, Beijing, China  
*B.Eng.* in Electronic Engineering  
*Thesis:* Power Control Policies for a Wireless Link with Energy Harvesting Transmitter and Receiver, **Tsinghua University Outstanding Undergraduate Thesis Award**  
*Advisors:* Prof. Zhisheng Niu and Prof. Sheng Zhou

## PROFESSIONAL EXPERIENCE

- 2020–present **Duke University**, Durham, NC  
*Assistant Professor*, Department of Electrical and Computer Engineering (08/2021–present)  
*Adjunct Assistant Professor*, Department of Electrical and Computer Engineering (10/2020–07/2021)
- 2020–present **WiLO Networks Inc.**, Santa Clara, CA  
*Co-Founder and Networks Lead*
- 2020–2021 **Yale University**, New Haven, CT  
*Postdoctoral Associate*, Department of Electrical Engineering  
*Hosts:* Prof. Leandros Tassiulas and Prof. Lin Zhong
- 2014–2020 **Columbia University**, New York, NY  
*M.S./Ph.D Student*, Wireless & Mobile Networking (WiMNet) Lab  
*Advisor:* Prof. Gil Zussman
- Summer 2018 **Nokia Bell Labs**, Holmdel, NJ  
*Research Intern*, Wireless Access Lab  
*Mentors:* Dr. Jinfeng Du, Dr. Dmitry Chizhik, and Dr. Reinaldo Valenzuela

## HONORS & AWARDS

- 2021 IBM Academic Award  
Google Research Scholar Award  
Columbia Nominee, ACM Doctoral Dissertation Award  
ACM SIGMOBILE Doctoral Dissertation Award Runner-up  
Advanced Practical Paper Competition (APPC) Finalist, *IEEE MTT-S IMS'21*  
Columbia Engineering Morton B. Friedman Memorial Prize

- Columbia University Eli Jury Award
- 2019 Facebook Fellowship  
Student Research Competition (SRC) Winner – First Place, *ACM MobiCom'19*  
Best Paper Finalist, *ACM MobiHoc'19*
- 2018 The 6th Heidelberg Laureate Forum Young Researcher  
Columbia Engineering Oscar and Verna Byron Fellowship  
Creative Tech Award, *NYC Media Lab's Annual Summit*  
Columbia University Jacob Millman Award
- 2017 Qualcomm Innovation Fellowship Finalist
- 2016 Best Paper Award, *ACM CoNEXT'16*  
Best Demo Award – Honorable Mention, *NYC Media Lab's Annual Summit*
- 2015 Columbia University Edwin Howard Armstrong Memorial Award
- 2014 Wei Family Private Foundation Fellowship  
Tsinghua University Outstanding Undergraduate Thesis Award

## PUBLICATIONS

### Conference Proceedings

- 2021 [C1] B. Lantz, J. Yu, A. Bhardwaj, A. A. Díaz-Montiel, A. Quraishy, S. Santaniello, **T. Chen**, R. Fujieda, A. Mukhopadhyay, G. Zussman, M. Ruffini, and D. Kilper, "SDN-Controlled Dynamic Front-Haul Provisioning, Emulated on Hardware and Virtual COSMOS Optical x-Haul Testbeds," in *Proc. IEEE/OSA Optical Fiber Communication Conference (OFC'21)*, M2B.8, 2021.
- [C2] X. Gu, A. Paidimerri, B. Sadhu, C. Baks, S. Lukashov, M. Yeck, Y. Kwark, **T. Chen**, G. Zussman, I. Seskar, and A. Valdes-Garcia, "Development of a Compact 28 GHz Software-Defined Phased Array for a City-Scale Wireless Research Testbed," in *Proc. IEEE MTT-S International Microwave Symposium (IMS'21)*, 2021. *Advanced Practical Paper Competition (APPC) Finalist*
- [C3] A. Nagulu, S. Garikapati, I. Kadota, M. Essawy, **T. Chen**, A. Natarajan, G. Zussman and H. Krishnaswamy, "Full-Duplex Receiver with Wideband Multi-Domain FIR Cancellation based on Stacked-Capacitor, *N*-path Switched-Capacitor Delay Lines Achieving  $>+54$  dB SIC across 80 MHz BW and  $>+15$  dBm TX Power Handling," in *Proc. IEEE International Solid-State Circuits Conference (ISSCC'21)*, 2021.
- 2020 [C4] D. Raychaudhuri, I. Seskar, G. Zussman, T. Korakis, D. Kilper, **T. Chen**, J. Kolodziejcki, M. Sherman, Z. Kostic, X. Gu, H. Krishnaswamy, S. Maheshwari, P. Skrimponis, and C. Gutterman, "Challenge: COSMOS: A City-Scale Programmable Testbed for Experimentation with Advanced Wireless," in *Proc. ACM International Conference on Mobile Computing and Networking (MobiCom'20)*, 2020.
- [C5] S. Garikapati, A. Gaonkar, **T. Chen**, A. Nagulu, G. Zussman, and H. Krishnaswamy, "Performance Comparison of Frequency-Domain and Time-Domain RF Self-Interference Cancellation in Full-Duplex Wireless System," in *Proc. Asilomar Conference on Signals, Systems, and Computers (Asilomar'20) (invited)*, 2020.
- [C6] A. Nagulu, A. Gaonkar, S. Ahasan, **T. Chen**, G. Zussman, and H. Krishnaswamy, "A Full-Duplex Receiver Leveraging Multiphase Switched-Capacitor-Delay based Multi-Domain FIR Filter Cancellers," in *Proc. IEEE Radio Frequency Integrated Circuits Symposium (RFIC'20)*, 2020.

- [C7] A. Minakhmetov, C. Gutterman, **T. Chen**, J. Yu, C. Ware, L. Iannone, D. Kilper, and G. Zussman, "Experiments on Cloud-RAN Wireless Handover using Optical Switching in a Dense Urban Testbed," in *Proc. IEEE/OSA Optical Fiber Communication Conference (OFC'20)*, Th2A.25, 2020.
- [C8] J. Yu, C. Gutterman, A. Minakhmetov, M. Sherman, **T. Chen**, S. Zhu, G. Zussman, I. Seskar, and D. Kilper, "Dual Use SDN Controller for Management and Experimentation in a Field Deployed Testbed," in *Proc. IEEE/OSA Optical Fiber Communication Conference (OFC'20)*, T3J.3, 2020.
- [C9] A. Nagulu, **T. Chen**, G. Zussman, and H. Krishnaswamy, "Non-Magnetic 180 nm SOI Circulator with Multi-Watt Power Handling based on Switched Capacitor Clock Boosting," in *Proc. IEEE International Solid-State Circuits Conference (ISSCC'20)*, 2020.
- 2019 [C10] **T. Chen**, M. Baraani Dastjerdi, J. Zhou, H. Krishnaswamy, and G. Zussman, "Wideband Full-Duplex Wireless via Frequency-Domain Equalization: Design and Experimentation," in *Proc. ACM International Conference on Mobile Computing and Networking (MobiCom'19)*, 2019.
- [C11] **T. Chen**, M. Baraani Dastjerdi, H. Krishnaswamy, and G. Zussman, "Wideband Full-Duplex Phased Array with Joint Transmit and Receive Beamforming: Optimization and Rate Gains," in *Proc. ACM International Symposium on Mobile Ad Hoc Networking and Computing (MobiHoc'19)*, 2019. **Best Paper Finalist**
- [C12] J. Yu, **T. Chen**, C. Gutterman, S. Zhu, G. Zussman, I. Seskar, and D. Kilper, "COSMOS: Optical Architecture and Prototyping," in *Proc. IEEE/OSA Optical Fiber Communication Conference (OFC'19)*, M3G.3 (invited), 2019.
- [C13] A. Nagulu, **T. Chen**, G. Zussman, and H. Krishnaswamy, "A Full-Duplex Radio using a CMOS Integrable Circulator Achieving +95 dB Overall SIC," in *Proc. IEEE AP-S Symposium on Antennas and Propagation and CNC/USNC-URSI Joint Meeting (AP-S/URSI'19)* (invited), 2019.
- 2018 [C14] **T. Chen**, J. Diakonikolas, J. Ghaderi, and G. Zussman, "Fairness and Delay in Heterogeneous Half- and Full-Duplex Wireless Networks," in *Proc. Asilomar Conference on Signals, Systems, and Computers (Asilomar'18)* (invited), 2018.
- [C15] **T. Chen**, J. Diakonikolas, J. Ghaderi, and G. Zussman, "Hybrid Scheduling in Heterogeneous Half- and Full-Duplex Wireless Networks," in *Proc. IEEE International Conference on Computer Communications (INFOCOM'18)*, 2018.
- [C16] M. Baraani Dastjerdi, N. Reiskarimian, **T. Chen**, G. Zussman, and H. Krishnaswamy, "Full Duplex Circulator-Receiver Phased Array Employing Self-Interference Cancellation via Beamforming," in *Proc. IEEE Radio Frequency Integrated Circuits Symposium (RFIC'18)*, 2018.
- [C17] M. Baraani Dastjerdi, **T. Chen**, N. Reiskarimian, G. Zussman, and H. Krishnaswamy, "Self-Interference Cancellation via Beamforming in an Integrated Full Duplex Circulator-Receiver Phased Array," in *Proc. IEEE International Conference on Signal Processing and Communications (SPCOM'18)* (invited), 2018.
- 2016 [C18] **T. Chen**, J. Ghaderi, D. Rubenstein, and G. Zussman, "Maximizing Broadcast Throughput under Ultra-Low-Power Constraints," in *Proc. ACM International Conference on emerging Networking Experiments and Technologies (CoNEXT'16)*, 2016. **Best Paper Award**
- [C19] H. Krishnaswamy, G. Zussman, J. Zhou, J. Marasevic, T. Dinc, N. Reiskarimian, and **T. Chen**, "Full-Duplex in a Hand-held Device - From Fundamental Physics to Complex Integrated Circuits, Systems and Networks: An Overview of the Columbia FlexICoN project," in *Proc. Asilomar Conference on Signals, Systems, and Computers (Asilomar'16)* (invited), 2016.
- [C20] R. Margolies, G. Grebla, **T. Chen**, D. Rubenstein, and G. Zussman, "Panda: Neighbor Discovery on a Power Harvesting Budget," in *Proc. IEEE International Conference on Computer Communications (INFOCOM'16)*, 2016.

- 2014 [C21] **T. Chen**, S. Zhou, W. Chen, and Z. Niu, "Power Control Policies for a Wireless Link with Energy Harvesting Transmitter and Receiver," in *Proc. IEEE International Symposium on Modeling and Optimization in Mobile, Ad Hoc and Wireless Networks (WiOpt'14)*, 2014.

### Journals

- 2021 [J1] M. Kohli, **T. Chen**, M. Baraani Dastjerdi, J. Welles, I. Seskar, H. Krishnaswamy, and G. Zussman, "Open-Access Full-Duplex Wireless in the ORBIT and COSMOS Testbeds," *Elsevier Computer Networks, Special Issue on Advances in Experimental Wireless Platforms and Systems (invited)*, vol. 9, pp. 108420, Nov. 2021.
- [J2] **T. Chen**, M. Baraani Dastjerdi, H. Krishnaswamy, and G. Zussman, "Wideband Full-Duplex Phased Array with Joint Transmit and Receive Beamforming: Optimization and Rate Gains," *IEEE/ACM Transactions on Networking*, vol. 29, no. 4, pp. 1591-1604, Aug. 2021.
- [J3] **T. Chen**, S. Garikapati, A. Nagulu, A. Gaonkar, M. Kohli, I. Kadota, H. Krishnaswamy, and G. Zussman, "A Survey and Quantitative Evaluation of Integrated Circuit-based Antenna Interfaces and Self-Interference Cancellers for Full-Duplex," *IEEE Open Journal of the Communications Society, Special Issue on Full-Duplex Transceivers for Future Networks: Theory and Techniques*, vol. 2, pp. 1753-1776, Jul. 2021.
- [J4] J. Du, D. Chizhik, R. Valenzuela, R. Feick, G. Castro, M. Rodriguez, **T. Chen**, M. Kohli, and G. Zussman, "Directional Measurements in Urban Street Canyons from Macro Rooftop Sites at 28 GHz for 90% Outdoor Coverage," *IEEE Transactions on Antennas and Propagation*, vol. 69, no. 6, pp. 3459-3469, Jun. 2021.
- [J5] A. Nagulu, A. Gaonkar, S. Ahasan, S. Garikapati, **T. Chen**, G. Zussman, and H. Krishnaswamy, "A Full-Duplex Receiver with True-Time-Delay Cancelers based on Switched-Capacitor-Networks Operating Beyond the Delay-Bandwidth Limit," *IEEE Journal of Solid-State Circuits*, vol. 56, no. 5, pp. 1398-1411, May 2021.
- 2020 [J6] A. Nagulu, **T. Chen**, G. Zussman, and H. Krishnaswamy, "Multi-Watt, 1 GHz CMOS Circulator based on Switched-Capacitor Clock Boosting," *IEEE Journal of Solid-State Circuits*, vol. 55, no. 12, pp. 3308-3321, Dec. 2020.
- [J7] **T. Chen**, J. Diakonikolas, J. Ghaderi, and G. Zussman, "Hybrid Scheduling in Heterogeneous Half- and Full-Duplex Wireless Networks," *IEEE/ACM Transactions on Networking*, vol. 28, no. 2, pp. 764-777, Apr. 2020.
- 2019 [J8] N. Reiskarimian, T. Dinc, J. Zhou, **T. Chen**, M. Baraani Dastjerdi, J. Diakonikolas, G. Zussman, and H. Krishnaswamy, "A One-Way Ramp to a Two-Way Highway: Integrated Magnetic-Free Non-Reciprocal Antenna Interfaces for Full Duplex Wireless," *IEEE Microwave Magazine (invited)*, vol. 20, no. 2, pp. 56-75, Feb. 2019.
- 2018 [J9] **T. Chen**, J. Ghaderi, D. Rubenstein, and G. Zussman, "Maximizing Broadcast Throughput under Ultra-Low-Power Constraints," *IEEE/ACM Transactions on Networking*, vol. 26, no. 2, pp. 779-792, Apr. 2018.
- 2017 [J10] J. Zhou, N. Reiskarimian, J. Marasevic, T. Dinc, **T. Chen**, G. Zussman, and H. Krishnaswamy, "Integrated Full Duplex Radios," *IEEE Communications Magazine (invited)*, vol. 55, no. 4, pp. 142-151, Apr. 2017.
- 2016 [J11] R. Margolies, G. Grebla, **T. Chen**, D. Rubenstein, and G. Zussman, "Panda: Neighbor Discovery on a Power Harvesting Budget," *IEEE Journal on Selected Areas in Communications, Series on Green Communications and Networking*, vol. 34, no. 12, pp. 3606-3619, Dec. 2016.

- 2015 [J12] S. Zhou, **T. Chen**, W. Chen, and Z. Niu, "Outage Minimization for a Fading Wireless Link with Energy Harvesting Transmitter and Receiver," *IEEE Journal on Selected Areas in Communications, Special Issue on Wireless Communications Powered by Energy Harvesting and Wireless Energy Transfer*, vol. 33, no. 3, pp. 496-511, Mar. 2015.

### Book Chapters

- 2021 [B1] M. Baraani Dastjerdi, **T. Chen**, G. Zussman, and H. Krishnaswamy, "Multiple-Input Multiple-Output Array Systems," invited book chapter in *In-Band Full-Duplex Technologies and Applications* (ed: K. Kolodziej), Artech House, 2021.
- [B2] J. Zhou, **T. Chen**, Y. Cao, G. Zussman, and H. Krishnaswamy, "Frequency-Domain RF Cancellation," invited book chapter in *In-Band Full-Duplex Technologies and Applications* (ed: K. Kolodziej), Artech House, 2021.
- 2020 [B3] **T. Chen**, J. Zhou, G. Zussman, and H. Krishnaswamy, "Integrated Full-Duplex Radios: System Concepts, Implementations, and Experimentation," invited book chapter in *Full-Duplex Communications for Future Wireless Networks* (eds: H. Alves, T. Riihonen, H. Suraweera), Springer, 2020.

### Patents

- 2019 [Pa1] D. Rubenstein, G. Zussman, J. Ghaderi, R. Margolies, **T. Chen**, G. Grebla, "Systems and Methods for Throughput Enhancement Among Ultra-Low Power Wireless Network Devices," U.S. Patent US 10,200,956 B2, Feb. 2019.

### Dissertation

- 2020 [D1] **T. Chen**, "Algorithms and Experimentation for Future Wireless Networks: From Internet-of-Things to Full-Duplex," Ph.D. Thesis, Columbia University, Oct. 2020. **ACM SIGMOBILE Doctoral Dissertation Award Runner-up, Columbia University Eli Jury Award**

### Workshop Proceedings

- 2021 [W1] **T. Chen**, P. Maddala, P. Skrimponis, J. Kolodziejski, X. Gu, A. Paidimarri, S. Rangan, G. Zussman, and I. Seskar, "Programmable and Open-Access Millimeter-Wave Radios in the PAWR COSMOS Testbed," *Proc. ACM MobiCom'21 Workshop on Wireless Network Testbeds, Experimental Evaluation & Characterization (WiNTECH'21)*, 2021.
- 2020 [W2] M. Kohli, **T. Chen**, M. Baraani Dastjerdi, J. Welles, I. Seskar, H. Krishnaswamy, and G. Zussman, "Open-Access Full-Duplex Wireless in the ORBIT and COSMOS Testbeds," in *Proc. ACM MobiCom'20 Workshop on Wireless Network Testbeds, Experimental Evaluation & Characterization (WiNTECH'20)* (invited), 2020.
- 2019 [W3] **T. Chen**, M. Kohli, T. Dai, A. D. Estigarribia, D. Chizhik, J. Du, R. Feick, R. Valenzuela, and G. Zussman, "28 GHz Channel Measurements in the COSMOS Testbed Deployment Area," in *Proc. ACM MobiCom'19 Workshop on Millimeter-Wave Networks and Sensing Systems (mmNets'19)*, 2019.
- [W4] **T. Chen**, J. Welles, M. Kohli, M. Baraani Dastjerdi, J. Kolodziejski, M. Sherman, I. Seskar, H. Krishnaswamy, and G. Zussman, "Experimentation with Full-Duplex Wireless in the COSMOS Testbed," in *Proc. IEEE ICNP'19 Workshop on Midscale Education and Research Infrastructure and Tools (MERIT'19)*, 2019.
- [W5] C. Gutterman, A. Minakhmetov, J. Yu, M. Sherman, **T. Chen**, S. Zhu, I. Seskar, D. Raychaudhuri, D. Kilper, and G. Zussman, "Programmable Optical x-Haul Network in the COSMOS Testbed," in *Proc. IEEE ICNP'19 Workshop on Midscale Education and Research Infrastructure and Tools (MERIT'19)*, 2019.

- [W6] A. Nagulu, **T. Chen**, G. Zussman, and H. Krishnaswamy, "A Single Antenna Full-Duplex Radio Using a Non-Magnetic, CMOS Circulator with In-built Isolation Tuning," in *Proc. IEEE ICC'19 Workshop on Full-Duplex Communications for Future Wireless Networks (invited)*, 2019.
- 2017 [W7] **T. Chen**, J. Ghaderi, D. Rubenstein, and G. Zussman, "Performance Evaluation of Energy-Constrained Broadcast (EconCast) in Wireless Networks," in *Proc. IEEE WCNC'17 Workshop on Energy Harvesting and Remotely Powered Wireless Communications for the IoT (invited)*, 2017.
- 2016 [W8] J. Marasevic, **T. Chen**, J. Zhou, N. Reiskarimian, H. Krishnaswamy, and G. Zussman, "Full-Duplex Wireless: Algorithms and Rate Improvement Bounds for Integrated Circuit Implementations," in *Proc. ACM MobiCom'16 Workshop on Hot Topics in Wireless (HotWireless'16) (invited)*, 2016.

### Demonstrations and Posters

- 2020 [DP1] M. Kohli, **T. Chen**, J. Welles, M. Baraani Dastjerdi, J. Kolodziejcki, M. Sherman, I. Seskar, H. Krishnaswamy, and G. Zussman, "Demo: Remote Experimentation with Open-Access Full-Duplex Wireless in the COSMOS Testbed," in *Proc. ACM International Conference on Mobile Computing and Networking (MobiCom'20)*, 2020.
- 2019 [DP2] **T. Chen**, M. Baraani Dastjerdi, J. Welles, J. Zhou, H. Krishnaswamy, and G. Zussman, 11Poster: Enabling Wideband Full-Duplex Wireless Frequency-Domain Equalization," in *Proc. ACM International Conference on Mobile Computing and Networking (MobiCom'19)*, 2019. **ACM MobiCom Student Research Competition (SRC) Winner - First Place**
- 2018 [DP3] **T. Chen**, M. Baraani Dastjerdi, G. Farkash, J. Zhou, H. Krishnaswamy, and G. Zussman, "Demo Abstract: Open-Access Full-Duplex Wireless in the ORBIT Testbed," in *Proc. IEEE International Conference on Computer Communications (INFOCOM'18)*, 2018.
- 2017 [DP4] **T. Chen**, J. Zhou, M. Baraani Dastjerdi, J. Diakonikolas, H. Krishnaswamy, and G. Zussman, "Demo Abstract: Full-Duplex with a Compact Frequency Domain Equalization-based RF Canceller," in *Proc. IEEE International Conference on Computer Communications (INFOCOM'17)*, 2017.
- 2016 [DP5] **T. Chen**, G. Chen, S. Jain, R. Margolies, G. Grebla, D. Rubenstein, and G. Zussman, "Demo Abstract: Power-Aware Neighbor Discovery for Energy Harvesting Things," in *Proc. ACM Conference on Embedded Networked Sensor Systems (SenSys'16)*, 2016.
- [DP6] **T. Chen**, J. Zhou, N. Grimwood, R. Fogel, J. Marasevic, H. Krishnaswamy, and G. Zussman, "Demo: Full-Duplex Wireless based on a Small-Form-Factor Analog Self-Interference Canceller," in *Proc. ACM International Symposium on Mobile Ad Hoc Networking and Computing (MobiHoc'16)*, 2016.

### GRANTS

- 2021 **NSF SWIFT**, Collaborative Research: SWIFT: SHIELD: A Software-Hardware Approach for Spectrum Coexistence with Rapid Interferer Learning, Detection, and Mitigation  
*Total amount: \$750,000, my share: \$250,000 (10/1/2021–9/30/2024)*  
*Role: lead PI (other PIs: Arun Natarajan and Leandros Tassiulas)*
- NSF NAI**, AI Institute for Edge Computing Leveraging Next Generation Networks (Athena)  
*Total amount: \$20,000,000, my share: ~\$550,000 (10/1/2021–9/30/2026)*  
*Role: senior investigator (lead PI: Yiran Chen)*
- IBM**, IBM Academic Award  
*Total amount: \$20,000 (9/1/2021–8/31/2022)*  
*Role: (sole) PI*

**Google**, Google Research Scholar Award  
*Total amount:* \$60,000 (9/1/2021–8/31/2022)  
*Role:* (sole) PI

**ACM SIGMOBILE**, SIGMOBILE Student Community Grant  
*Total amount:* \$10,000 (9/1/2021–6/30/2022)  
*Role:* advisor (with Ph.D. student Zhenzhou Qi)

2019 **Facebook**, Facebook Fellowship  
*Total amount:* \$71,652 (9/1/2019–8/31/2020)  
*Role:* (sole) student

2017 **National Instruments**, National Instruments Academic Research Grant  
*Total amount:* \$4,000 (9/1/2017–8/31/2019)  
*Role:* (sole) student

2016–2019 **Student Travel Grants**, ACM MobiCom 2019, IEEE ICNP 2019, ACM MobiHoc 2019, 6th Heidelberg Laureate Forum (the SkyLabs grant), National Instruments Week 2017, ACM CoNEXT 2016, ACM MobiCom 2016, ACM MobiHoc 2016

### **Glossary**

NSF National Science Foundation  
SWIFT Spectrum and Wireless Innovation enabled by Future Technologies (SWIFT)  
NAI National Artificial Intelligence (AI) Research Institutes  
ACM Association for Computing Machinery  
SIGMOBILE Special Interest Group on Mobility of Systems, Users, Data and Computing

### **MENTORING & ADVISING**

#### **Ph.D. Students**

2021–present Zhenzhou (Tom) Qi, Duke University, *ACM SIGMOBILE Student Community Grant Award*  
2021–present Zehao Wang, Duke University

#### **M.S. Students**

Spring 2021 Saravanan Govindarajan, Columbia University  
Fall 2019 Guanxuan Li, Columbia University, currently at Facebook  
Fall 2019 Shounak Roy, Columbia University, currently at TSMC America  
Spring 2019 Shanglin Guo, Columbia University, currently at Analog Devices  
2018–2019 Siao-Ting Wang, Columbia University, currently at Amazon  
2017–2018 Guy Farkash, Columbia University, currently at Knaq, *EE M.S. Research Award*  
2016–2017 Steven Alfano, Columbia University, currently at Wolverine Trading, *EE M.S. Research Award*  
2015–2016 Rel Fogel, Columbia University, currently at Front Gate Tickets

#### **Undergraduate Students**

2020–present Kaya Celebi, Duke University  
2021–present Perry Flamer, Columbia University, *EE Student Excellence Award*  
Spring 2020 Shaokai Jerry Lin, Columbia University, currently a Ph.D. student at UC Berkeley EECS  
2019–2021 Angel Daniel Estigarribia, Columbia University, currently at Qualcomm, *EE Undergrad Research Award*  
2019–2020 Tianyi Jason Dai, Columbia University, currently at Qualcomm  
2018–2019 Kimberly Santiago, Columbia University, currently at LinkedIn  
2018–2019 Jackson Welles, Columbia University, currently at Latch, *EE Undergrad Research Award*  
2017–2019 Jenny Li, Columbia University  
Fall 2017 Rodda John, Columbia University  
Fall 2017 Andy Lianghua Xu, Columbia University, currently at Facebook

- Summer 2017 Jinhui Song, Tsinghua University, China, currently a Ph.D. student at UIUC ECE
- Summer 2017 Fan Yi, Shanghai Jiao Tong University, China, currently a Ph.D. student at Princeton CS
- Summer 2017 Aishwarya Rajen, Anna University, India, currently at Intel, was an M.S. student at UT Austin ECE
- Spring 2016 Gregory Chen, Columbia University, currently at Bloomberg LP
- 2015–2016 Nicole Grimwood, Columbia University, currently at Cohere Tech., *EE Undergrad Research Award*
- 2015–2016 Saahil Jain, Columbia University, currently M.S. student at Stanford CS, was as Microsoft
- 2015–2016 James Thompson, Columbia University, currently at Lockheed Martin
- Summer 2015 Alexandre Simoes, Universidade de Sao Paulo, Brazil

**High School Students**

- Summer 2019 Shiraz Bendor, Cresskill High School, currently an undergrad student at U. Michigan

**TEACHING**

**Instructor**, Duke University, Durham, NC

- Spring 2022 ECE 590 Next-generation Wireless and Mobile Networks

**Teaching Assistant**, Columbia University, New York, NY

- Summer 2019 CSEE 4119 Computer Networks
- Summer 2018 CSEE 4119 Computer Networks
- Spring 2018 ELEN 6889 Large Data Stream Processing
- Fall 2017 ELEN 6950 Wireless & Mobile Networking I
- Summer 2017 CSEE 4119 Computer Networks
- Spring 2017 CSEE 4119 Computer Networks
- Fall 2016 ELEN 6950 Wireless & Mobile Networking I
- Spring 2016 ELEN 6951 Wireless & Mobile Networking II
- Spring 2015 ELEN 4703 Wireless Communications

**PROFESSIONAL SERVICE**

**Organizing Committee**

- 2021 General Chair, IEEE GlobeCom Testbeds4Wireless Workshop
- 2019 General Chair, IEEE DySPAN Workshop on mmWave Communications and Networks  
Local Arrangements Chair, ACM SenSys/BuildSys

**Technical Program Committee**

- 2022 IEEE ICC
- 2021 ACM MobiCom Poster/SRC  
ACM BuildSys Poster & Demo  
IEEE WiOpt  
ACM SIGCOMM Workshop on 5G Measurements, Modeling, and Use Cases (5G-MeMU)
- 2019 IEEE Future Networking Workshop for 5G and Beyond Testbed and Trials
- 2016 ACM MobiCom S3 Workshop

**National Funding Agency Service**

- 2021 U.S.-Israel Binational Science Foundation (BSF): external reviewer  
Chile National Research and Development Agency (ANID): external reviewer  
City University of New York (CUNY) Research Foundation: external reviewer



### **Journal Reviewer**

- 2021 IEEE/ACM Transactions on Networking  
IEEE Transactions on Mobile Computing  
IEEE Internet of Things Journal  
IEEE Open Journal of the Communications Society  
IEEE Communications Letters
- 2020 IEEE/ACM Transactions on Networking  
IEEE Transactions on Wireless Communications  
IEEE Wireless Communications Magazine  
Elsevier Computer Networks
- 2019 IEEE/ACM Transactions on Networking
- 2018 IEEE/ACM Transactions on Networking  
IEEE Transactions on Communications  
IEEE Communications Magazine
- 2017 IEEE Communications Magazine  
IEEE Microwave Magazine  
IEEE Communications Letters  
Elsevier Physical Communication
- 2016 ACM Transactions on Embedded Computing Systems
- 2015 ACM Transactions on Sensor Networks

### **Conference Reviewer**

- 2021 USENIX NSDI, ACM MobiCom
- 2020 ACM MobiHoc, IEEE VTC-Spring
- 2019 ACM SIGMETRICS
- 2018 ACM MobiCom, ACM MobiHoc, ACM SIGMETRICS
- 2017 ACM MobiHoc, ACM SIGMETRICS
- 2016 ACM MobiCom, ACM MobiHoc, ACM SIGMETRICS, IFIP WD, IEEE ICC
- 2015 ACM MobiHoc, ACM SIGMETRICS, IEEE ICC

### **Department Services**

- 2016–2020 Columbia University Electrical Engineering Student Ambassadors

### **Outreach & Education**

- 2021 Judge for the Alpha Hacks Hackathon  
Judge for the ENVISION By WiSTEM (Women in STEM) Competition
- 2020 Kids Week at Intrepid: Full STEAM Ahead
- 2019 Columbia Inside Engineering Labs program  
Columbia Girls' Science Day  
Class visit for underrepresented high school seniors at CE2 (Columbia Engineering Experience)  
COSMOS Summer Research Experiences for Teachers (RET) program  
Demo and poster at the Silicon Harlem Annual Tech Conference

- 2018 COSMOS Summer Research Experiences for Teachers (RET) program  
 Demo and poster at the Silicon Harlem Annual Tech Conference  
 Science Expo at The School at Columbia University
- 2015 High school outreach at the Manhattan Center for Science and Mathematics in East Harlem

### TALKS, DEMOS, AND ADDITIONAL PRESENTATIONS

- 2020 "The COSMOS Testbed – a Platform for Advanced Wireless, mmWave, and Optical Experimentation", *Microsoft Research Seminar*, Redmond, WA (**invited talk**).
- "Cross-Layering in Future Wireless Networks: From Compact Full-Duplex Radios to City-Scale Experimentation",  
 - *Yale University, Department of Electrical Engineering and Yale Institute for Network Science (YINS)*  
 - *Carnegie Mellon University, Department of Electrical and Computer Engineering*  
 - *University of Minnesota Twin Cities, Department of Electrical and Computer Engineering*  
 - *Duke University, Department of Electrical and Computer Engineering*  
 - *Cornell Tech and Cornell University, School of Electrical and Computer Engineering*  
 - *Columbia University, Data Science Institute Sense, Collect, and Move Data Seminar*
- 2019 "Experimentation with the City-Scale Programmable COSMOS Testbed",  
 - *ACM SenSys'19 Tutorial*, New York, NY (tutorial and demo)  
 - *ACM MobiCom'29 Tutorial*, Los Cabos, Mexico (tutorial and demo)
- "The COSMOS Education Toolkit and Open-Access Full-Duplex Wireless in the COSMOS Testbed", *6th Silicon Harlem Annual Tech Conference*, New York, NY (**invited demo**).
- "Algorithms and Experimentation for Future Wireless Networks: From Full-Duplex to Optical x-Haul", *Facebook Annual Fellow Summit*, Menlo Park, CA (**invited poster**).
- "The COSMOS Wireless Testbed and Experimentation with Compact Full-Duplex Wireless", *Optical Telecommunications Research Group, Telecom Paris*, Paris, France (opt-telecom seminar).
- "COSMOS – A Platform for Advanced Wireless Research (PAWR)", *ACM MobiHoc'19 Workshop on the Frontiers of Networks*, Catania, Italy (**invited talk**).
- "Algorithms and Experimentation for Future Wireless Networks: From Full-Duplex to Optical x-Haul", *Facebook Networking and Communications Faculty Summit*, Fremont, CA (**invited talk**).
- "Real-Time Full-Duplex Wireless using an Integrated CMOS Circulator", *IEEE MTT-S IMS'19*, Boston, MA (demo).
- "The COSMOS Wireless Testbed: Experimenting with Next-Generation Wireless Technologies and Applications in Real-World City-Scale Environments", *Department of Electronic Engineering, Tsinghua University*, Beijing, China (**invited talk**).
- "The COSMOS Wireless Testbed and Experimentation with Compact Full-Duplex Wireless", *Institute of Interdisciplinary Information Sciences, Tsinghua University*, Beijing, China (**invited talk**).
- "Open-Access Full-Duplex Wireless in the ORBIT/COSMOS Testbed", *COSMOS Experimenters Workshop, Rutgers University*, North Brunswick, NJ (tutorial and demo).
- "The COSMOS Wireless Testbed and Experimentation with Compact Full-Duplex Wireless", *Department of Computer Science and Engineering, University of California at Riverside*, Riverside, CA.
- "Real-Time Full-Duplex Wireless using an Integrated CMOS Circulator", *Columbia Data Science Day, Columbia University*, New York, NY (demo).
- 2018 "Fully-Integrated Non-Magnetic 180nm SOI Circulator", *DARPA MTO RF Showcase, Johns Hopkins University Applied Physics Lab*, Laurel, MD (demo).

- “Open-Access Full-Duplex Wireless in the ORBIT Testbed”, *5th Silicon Harlem Annual Tech Conference*, New York, NY (**invited demo**).
- “Maximizing Broadcast Throughput under Ultra-Low-Power Constraints”, *6th Heidelberg Laureate Forum*, Heidelberg, Germany (poster-flash and poster).
- “Maximizing Broadcast Throughput under Ultra-Low-Power Constraints”, *Department of Electrical and Computer Engineering, Technical University of Munich*, Munich, Germany (**invited talk**).
- “Open-Access Full-Duplex Wireless in the ORBIT Testbed”, *NYC Media Lab’s Annual Summit, The New School*, New York, NY (demo). **Creative Tech Award in Engineering**
- “Maximizing Broadcast Throughput under Ultra-Low-Power Constraints”, *Institute of Interdisciplinary Information Sciences, Tsinghua University*, Beijing, China (**invited talk**).
- “Full-Duplex Wireless in Hand-Held Devices: From Circuits to Networks”, *Department of Electronic Engineering, Tsinghua University*, Beijing, China (**invited talk**).
- “The COSMOS Wireless Testbed and Experimentation with Compact Full-Duplex Wireless”, *Nokia Bell Labs*, Crawford Hill, NJ (**invited talk**).
- “Fully-Integrated Non-Magnetic 180nm SOI Circulator”, *IEEE RFIC’18*, Philadelphia, PA (demo).
- “Open-Access Full-Duplex Wireless in the ORBIT Testbed”, *CATT Annual Research Review*, NYU, Brooklyn, NY (**invited demo and poster**).
- “Open-Access Full-Duplex Wireless in the ORBIT Testbed”, *Columbia Data Science Day, Columbia University*, New York, NY (demo).
- 2017 “Full-Duplex Wireless: A Two-Way Road to 5G”, *National Instruments NIWeek Academic Forum*, Austin, TX (poster).
- “Full-Duplex MIMO Wireless: From IC Design to Networking”, *Qualcomm Innovation Fellowship Final’s Day*, San Diego, CA (talk and poster).
- “Full-Duplex Wireless: A Two-Way Road to 5G”, *Columbia Data Science Day, Columbia University*, New York, NY (demo).
- “Full-duplex Wireless: Algorithms, Rate Improvement Bounds, and System Implementations”, *WIN-LAB Workshop on Advanced Wireless Experimentation*, Rutgers University, North Brunswick, NJ (**invited talk**).
- 2016 “Double-Talk: Full-Duplex Wireless for Next-Generation Communications”, *NYC Media Lab’s Annual Summit, Columbia University*, New York, NY (demo). **Honorable Mention Award**
- “A Self-Interference-Cancelling Full-Duplex Enabling Next-Generation Wireless Communications”, *Columbia Data Science Day, Columbia University*, New York, NY (demo).