

Kyle Jamieson

Curriculum Vitae August 2023

Princeton University
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Professional Preparation

Massachusetts Institute of Technology Cambridge, Massachusetts, USA
Doctor of Philosophy (Ph.D.) in Computer Science June 2008
Thesis title: *The SoftPHY Abstraction: From Packets to Symbols in Wireless Network Design*
Advisor: Hari Balakrishnan

Master of Engineering (M.Eng.) in Electrical Engineering and Computer Science June 2002
Thesis title: *Implementation of a Power-Saving Protocol for Ad Hoc Wireless Networks*
Advisor: Hari Balakrishnan

Bachelor of Science (B.S.) in Computer Science and Engineering June 2001
Bachelor of Science (B.S.) in Mathematics June 2000

Professional History

Princeton University Princeton, New Jersey, USA
Professor of Computer Science January 2021–present
Director of Graduate Studies (Computer Science) January 2022–present
Associated Faculty, Department of Electrical and Computer Engineering December 2020–present
Associate Professor of Computer Science July 2017–December 2020
Fellow, Forbes College March 2016–present
Assistant Professor of Computer Science September 2015–June 2017

University College London London, UK
Honorary Reader (adjunct position) November 2016–August 2020
Reader of Wireless Systems and Networks (tenured faculty position) October 2015–October 2016
Senior Lecturer (tenure-track faculty position) October 2012–September 2015
Lecturer (tenure-track faculty position) September 2008–September 2012

Massachusetts Institute of Technology Cambridge, Massachusetts, USA
Visiting Research Scientist (on sabbatical) February 2020–July 2020
Postdoctoral Research Associate June 2008–August 2008

Awards and Honors

- Test of Time Award, ACM SenSys Conference (2022) for *Collection Tree Protocol (2009)*
- ACM Special Interest Group on Mobility of Systems, Users, Data, and Computing (SIGMOBILE) *Early Career Award (2018)*
- Best Paper award, IEEE CSNDSP Symposium (2016) for “Truncating and Oversampling OFDM Signals in White Gaussian Noise Channels”
- Best Paper Award, ACM CoNEXT Conference (2014) for “MIDAS: Empowering 802.11ac Networks with Multiple-Input Distributed Antenna Systems”
- European Research Council Starting Investigator Fellowship (2013)
- Best Paper award, USENIX Annual Technical Conference (2014) for “HACK: Hierarchical ACKs for Efficient Wireless Medium Utilization”

Earlier Honors

- NTT Graduate Fellowship (2000)
- Eta Kappa Nu Honor Society (2000)

Advising and Supervision

Ph.D. Students	Zhuqi Li *23
Ph.D. Students (Current)	Kun Woo Cho, Srikar Kasi, Minsung Kim, Abhishek Kumar Singh, Haoran Wan, Fan Yi
Ph.D. Committee Member	Jia Chen '10 (UCL), David Cottingham '08 (Cambridge University), Valentin Goverdovsky '13 (Imperial College London), Robert Harrison *16 (Non-Reader, Princeton), Austin Hounsel (Reader, Princeton), Xiaozhou Li *16 (Reader, Princeton), Themistoklis Melissaris (Reader, Princeton), Prakash Murali *21 (Reader, Princeton), Thomas Nitsche '15 (Universidad Carlos III de Madrid, Spain), Teague Tomesh *23 (Reader, Princeton), R. Ivan Zelaya (Reader, Yale University), Haoyu Zhang *18 (Reader, Princeton)
General Exam at Princeton	Josh Cohen (2021), Themis Melissaris (2016), Muhammad Shahbaz (2016), Mohammad Shahradsad (2016), Mina Tahmasbi (2016), Yufei Zheng (2021)
Transfer Viva at UCL	João Taveira Araújo (2012), Jia Chen (2010), Fei Qin (2010)

A.B., B.S.E., and M.Eng. Thesis Supervision

Supervisor at Princeton	Kevin Castro B.S.E. '23, Dale Lee A.B. '19, Colton Loftus A.B. '23, Gilbert Spencer A.B. '23, Paskalino Spirollari A.B. '21, Hansen Qian A.B. '16
Supervisor at UCL	Kanika Bahukuna M.Eng '09, Zelalem Deresse M.Eng. '09, Calum Harrison M.Eng. '10, Jofrey Kyomo M.Eng. '09, Jiwei Li M.Sc. '15, Piyakun Nopphakun M.Eng. '09, Juan Zhou M.Sc. '17
Reader at Princeton	Andrew Kim '16, Anabelle Chang '21

Prior Advising and Supervision

Postdoctoral Researcher	Dr. Konstantinos Nikitopoulos (Reader, University of Surrey, UK), Dr. Longfei Shangguan (Princeton, now Researcher, Microsoft Research, Redmond), Dr. Bo Tan (UCL, now Lecturer, Tampere University of Technology, Finland), Dr. Yaxiong Xie (Princeton, now Assistant Professor, University of Buffalo)
Ph.D. Students	Georgios Nikolaidis '16 (University College London), Jie Xiong '09 (UCL, now Assistant Professor at University of Massachusetts, Amherst)
Line Manager	Graeme McPhillips (Research Technician, UCL), Jon Gjengset (now MIT Ph.D. student)

Honors by Student Advisees

- Princeton School of Engineering and Applied Science (SEAS) Award for Excellence (2022), Andrew Kim Memorial Foundation Engineering Award (2023), and Adiabatic Quantum Computing Junior Scientist Award (2023) to Minsung Kim
- Qualcomm Innovation Fellowship, North America (2021): Srikar Kasi and Minsung Kim for “Quantum Computation for Wireless Networks”
- Best Presentation award (MobiCom 2014): Jon Gjengset

Professional Activities

Organizer	NSF COVID-19 “Call to Arms” Workshop, April 2020 General co-chair, ACM Workshop on Hot Topics in Networks 2019 Program committee co-chair, MobiCom 2018 Co-organizer, NSF Visioning Workshop on Wireless Networking, 2017, Snowbird, UT Co-organizer, Schloss Dagstuhl Seminar on Foundations of Wireless Networking, 2017 Program committee co-chair, MobiArch 2011
Journal Editor	Senior Editor, IEEE Journal on Selected Areas in Communications (2022) Associate Editor, IEEE/ACM Transactions on Networking 2018–2020
Program Committee	ACM SIGCOMM 2009–2012, 2014, 2015, 2018, 2019, 2022 ACM MobiCom 2010, 2012–2014, 2016, 2018, 2020–2024 IEEE INFOCOM 2024 ACM MobiSys 2017, 2020, 2021 USENIX NSDI 2014, 2016, 2018, 2020, 2022 Workshop on Quantum Resource Estimation (QRE) 2023 IEEE International Conference on Quantum Computing & Engineering (QCE) 2023 ACM CoNEXT EmergingWireless Workshop 2022 HotNets Workshop 2012, 2013, 2015, 2021, 2023 HotWireless Workshop 2015–2017

IEEE DySpan Conference 2012
ACM Internet Measurement Conference 2009
ACM Workshop on Cognitive Radio Networks (CoRoNet) 2009
Workshop on Embedded Networked Sensors (EmNets) 2006

Service Committee ACM MobiCom Conference 2019 Planning Committee on rolling paper submission deadlines
ACM SIGMOBILE Early Career Award Selection Committee

Funding Panels National Science Foundation (NSF) CISE: CNS 2015, 2017, 2019
National Science Foundation (NSF) CISE: CCF 2023
Canada Natural Sciences and Engineering Research Council (NSERC) 2019
NSF GENI Solicitation 3, 2010
NSF GENI Solicitation 4, 2013

Funding Agency Reviewer Swiss National Science Foundation (SNSF), 2012, 2022a
UK Engineering and Physical Sciences Research Council (EPSRC) 2012, 2017
European Research Council (ERC) Starting and Advanced Grants 2012, 2013
US-Israel Binational Science Foundation (BSF) 2014, 2017
Israel Science Foundation (ISF) 2014, 2017

External Reviewer IEEE Transactions on Communications 2022
Proceedings of the ACM on Interactive, Mobile, Wearable, and Ubiquitous Technologies 2021, 2022
ACM SIGCOMM 2001, 2006
ACM SIGMETRICS 2019
IEEE Infocom 2007
ACM CoNext 2010
ACM IMC 2010
ACM HotNets 2003, 2010
ACM/USENIX MobiSys 2003
ACM SenSys 2003 to 2005
ACM/USENIX NSDI 2004
IEEE/ACM Transactions on Networking 2007, 2009, 2010
IEEE Communications Letters 2008, 2010
IEEE Transactions on Mobile Computing 2005, 2007, 2008, 2009, 2010
ACM Transactions on Sensor Networks 2005, 2006, 2007, 2009, 2010
ACM Transactions on Computers 2010
Proceedings of the IEEE 2009, 2010
ACM HotNets 2003, 2017
IEEE Communications Magazine 2013

Society Membership Senior Member, ACM
ACM SIGMOBILE
Senior Member, IEEE
IEEE Communications Society

Teaching

University College London

Spring '09 COMPM038/GZ06 *Mobile and Adaptive Systems*: One-third teaching responsibilities.
Fall '09 COMP3035/GZ01 *Networked Systems*: One-half teaching responsibilities. Designed and developed a new Python coursework exercise, a functional local DNS server.
Spring '10 COMPM038/GZ06 *Mobile and Adaptive Systems*: One-third teaching responsibilities.
Fall '10 COMP3035/GZ01 *Networked Systems*: One-half teaching responsibilities.
Spring '11 COMPM038/GZ06 *Mobile and Cloud Computing*: One-half teaching responsibilities.
COMP6007/GC15 *Communications and Networks*: One-half teaching responsibilities.
Summer '11 Lecturer at EPSRC 2011 Summer School in Communications at the University of Edinburgh.
Fall '11 COMP3035/GZ01 *Networked Systems*: One-half teaching responsibilities.
Spring '12 COMPM038/GZ06 *Mobile and Cloud Computing*: One-half teaching responsibilities.
Fall '12 COMP3035/GZ01 *Networked Systems*: One-half teaching responsibilities.
Spring '13 COMPM038/GZ06 *Mobile and Cloud Computing*: One-half teaching responsibilities.
Fall '13 COMP3035/GZ01 *Networked Systems*: One-half teaching responsibilities.
Spring '14 COMPM038/GZ06 *Mobile and Cloud Computing*: One-half teaching responsibilities.
Guest lecturer, University of California Berkeley CS 268 *Computer Networks*.
Spring '15 COMPM038/GZ06 *Mobile and Cloud Computing*.

Princeton University

Fall '15 COS 518 *Advanced Computer Systems*.
Fall '16 COS 418 *Distributed Systems*. Co-developed new undergraduate class on Distributed Computer Systems, including developing new lecture material and supervising the development of new programming coursework material. One-half teaching responsibilities as course co-instructor.
Spring '17 COS 598A *Wireless Networking and Sensing Systems*. Developed new graduate seminar on wireless data communication networks, wireless network architecture, and wireless sensing systems.
Fall '17 COS 418 *Distributed Systems*. Continued co-developing new undergraduate class on Distributed Computer Systems, revising and extending lecture material. One-half teaching responsibilities as course co-instructor.
Spring '18 COS 463 *Wireless Networks*. Developed new undergraduate class on wireless network design, architecture, and implementation, treating the design of wireless

	networks from a holistic systems and networking perspective all the way down to the physical layer and the wireless channel.
Fall '18	COS IW 07 <i>Independent Work Seminar on Mobile Computing Design for Assistive Technology</i> . Developed new undergraduate Independent Work seminar on the use of mobile and augmented reality devices and other new technologies to assist persons with disabilities.
	COS IW 08 <i>Independent Work Seminar on Network Measurement, Sensing, and Visualization Across the Princeton Campus</i> . Developed new undergraduate Independent Work seminar on visualization of the operation of computer networks.
Spring '19	COS 463 <i>Wireless Networks</i> . Developed new undergraduate class on wireless network design, architecture, and implementation, treating the design of wireless networks from a holistic systems and networking perspective all the way down to the physical layer and the wireless channel.
Fall '19	COS IW 06 <i>Independent Work Seminar on Network Measurement, Sensing, and Visualization Across the Princeton Campus</i> .
Fall '20	COS 461 <i>Computer Networks</i> .
Spring '21	COS 563 <i>Wireless Networks</i> .
Fall '21	COS 461 <i>Computer Networks</i> .
Spring '22	COS Independent Work Coordinator; COS IW 07 <i>Mobile and Wearable Design for Sports and Assistive Technology</i> .
Fall '22	COS Independent Work Coordinator; COS IW 07 <i>Mobile and Wearable Design for Sports and Assistive Technology</i> .
Spring '23	COS 461 <i>Computer Networks</i> .

Service

University Service	<p>Maker Space Computer Science Department Representative (2015–2016)</p> <p>B.S.E. Class of 2020 Freshman Academic Advisor (2016–2017)</p> <p>Andlinger Center Faculty Hiring Committee (2017–2018)</p> <p>B.S.E. Class of 2020 Academic Advisor</p> <p>School of Engineering and Applied Sciences Innovation Research Awards Proposal Evaluation Committee (2018–2019)</p> <p>Reader for University Dale Fellowship (2019–2020)</p> <p>Dean for Research COVID-19 Research Lab Advisory Group (2020)</p> <p>Institutional Review Board (2020–2023)</p> <p>Director of Graduate Studies, Computer Science Department (2022–2023)</p> <p>Fellowships Committee of the Graduate School (2022)</p> <p>Princeton Quantum Center Faculty Recruiting Committee (2023)</p>
Departmental Service	<p>Chair, Ad Hoc Committee on the Graduate Program (2021–2022)</p> <p>Siebel Scholar Selection Committee (2019–2020)</p> <p>Service Committee (2018–2019)</p> <p>CS Department Interim Space Czar (2019–2020)</p> <p>Faculty Hiring Committee (2015–2016, 2017–2018, 2020–2021)</p>

Assisting Faculty Hiring Committee for the Computer Networking and Cyber-Physical Systems research areas (2018–2019)
Graduate Admissions Area Lead for Systems and Networks (2015–2019)
UCL Departmental Service Academic staff representative, Operations Committee (2010)
Program Director, MSc Networked Computer Systems programme (2014)

Publications

Refereed Journal Publications

- [1] Kasi, Srikar, John Kaewell, and Kyle Jamieson. 2023. “A Quantum Annealer-Enabled Decoder and Hardware Topology for NextG Wireless Polar Codes”. *IEEE Transactions on Wireless Communications* (forthcoming).
- [2] Chen, Tao, Longfei Shangguan, Zhenjiang Li, and Kyle Jamieson. 2023. “The Design and Implementation of a Steganographic Communication System over In-Band Acoustical Channels”. *ACM Trans. Sen. Netw.*. New York, NY, USA: Association for Computing Machinery. doi:10.1145/3587162
- [3] Yaxiong Xie, Kyle Jamieson. “NG-Scope: Fine-Grained Telemetry for NextG Cellular Networks”. *Proceedings of the ACM on Measurement and Analysis of Computing Systems* 6:1-26 (2022). doi:10.1145/3508032
- [4] Abhishek Kumar Singh, Kyle Jamieson, Peter McMahon, Davide Venturelli. “Ising Machines’ Dynamics and Regularization for Near-Optimal MIMO Detection.” *IEEE Transactions on Wireless Communications*, 11080-11094 (2022). doi:10.1109/twc.2022.3189604
- [5] Waseem Ozan, Izzat Darwazeh, Kyle Jamieson. Partial OFDM Symbol Recovery to Improve Interfering Wireless Networks Operation in Collision Environments. *IEEE/ACM/Transactions/on/Networking*, 1-15 (2022). doi:10.1109/tnet.2022.3202857
- [6] Fan Yi, Yaxiong Xie, Kyle Jamieson. “Cellular-Assisted, Deep Learning Based COVID-19 Contact Tracing”. *Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies* 6: 1-27 (2022). doi:10.1145/3550332
- [7] Minsung Kim, Srikar Kasi, Aaron P. Lott, Davide Venturelli, John Kaewell, Kyle Jamieson. Heuristic Quantum Optimization for 6G Wireless Communications. *IEEE Network* 35:4, 8–15 (2021) doi:10.1109/MNET.012.2000770
- [8] Aakanksha Chowdhery, Kyle Jamieson. Aerial Channel Prediction and User Scheduling in Mobile Drone Hotspots. *IEEE/ACM Trans. on Networking*, 14 pp. (2018). doi:10.1109/TNET.2018.2878287
- [9] Ju Wang, Jie Xiong, Hongbo Jiang, Kyle Jamieson, Xiaojiang Chen, Dingyi Fang, Chen Wang. Low Human-Effort, Device-Free Localization with Fine-Grained Subcarrier Information. *IEEE Trans. on Mobile Computing* (2018), 14 pp. doi:10.1109/TMC.2018.2812746
- [10] Georgios Georgis, Konstantinos Nikitopoulos, Kyle Jamieson. Geosphere: An Exact Depth-First Sphere Decoder Architecture Scalable to Very Dense Constellations. *IEEE Access*, 5:1, 17 pp. (2017).

- [11] Omprakash Gnawali, Rodrigo Fonseca, Kyle Jamieson, Maria Kazandjieva, David Moss, Phil Levis. CTP: An Efficient, Robust, and Reliable Collection Tree Protocol for Wireless Sensor Networks. *ACM Transactions on Sensor Networks* 10:1, 1–49 (2013).
- [12] Y. C. Tay, Kyle Jamieson, Hari Balakrishnan. Collision-Minimizing CSMA and its Applications to Wireless Sensor Networks. *IEEE Journal on Selected Areas in Communications* 22:6 (2004), 1048–1057. Cited by 273.
- [13] Benjie Chen, Kyle Jamieson, Hari Balakrishnan, Robert Morris. Span: An Energy-Efficient Coordination Algorithm for Topology Maintenance in Ad Hoc Wireless Networks. *ACM Wireless Networks* 8:5 (2002), 481–494. Cited by 2,951.

Refereed Conference Publications

- [14] Cho, Kun, Srikar Kasi, and Kyle Jamieson. 2023. “A Low-Power OAM Metasurface for Rank-Deficient Wireless Environments”. *IEEE Global Communications Conference (IEEE GLOBECOM)*. Kuala Lumpur, Malaysia.
- [15] Cho, Kun Woo, Marco Cominelli, Francesco Gringoli, Joerg Widmer, and Kyle Jamieson. 2023. “Cross-Link Channel Prediction for Massive IoT Networks”. In *International Symposium on Theory, Algorithmic Foundations, and Protocol Design for Mobile Networks and Mobile Computing (ACM MobiHoc)*.
- [16] Kim, Minsung, and Kyle Jamieson. 2023. “Finer-Grained Decomposition for Parallel Quantum MIMO Processing”. In *International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, 1-5. IEEE. doi:10.1109/ICASSP49357.2023.10096503
- [17] Cho, Kun Woo, Mohammad Mazaheri, Jeremy Gummesson, Omid Abari, and Kyle Jamieson. “A Steerable, Transflective Metamaterial Surface for NextG MmWave Networks.” In *USENIX Symposium on Networked Systems Design and Implementation (NSDI) 2023*.
- [18] Zhuqi Li, Yaxiong Xie, Ravi Netravali, and Kyle Jamieson. “Taming Swipe Uncertainty for Robust Short Video Streaming.” In *USENIX Symposium on Networked Systems Design and Implementation (NSDI) 2023*.
- [19] Abhishek Kumar Singh, Kyle Jamieson, Peter McMahon, and Davide Venturelli. Regularized Ising Formulation for Near-Optimal MIMO Detection Using Quantum Inspired Solvers. In *IEEE Globecom Conference (2022)*.
- [20] Abhishek Kumar Singh, Davide Venturelli, and Kyle Jamieson. Perturbation-Based Formulation of Maximum Likelihood MIMO Detection for Coherent Ising Machines. In *IEEE Globecom Conference (2022)*.
- [21] Minsung Kim, Davide Venturelli, John Kaewell, and Kyle Jamieson. Warm-Started Quantum Sphere Decoding via Reverse Annealing for Massive IoT Connectivity. *Proceedings of the ACM MobiCom Conference (2022)*, 14 pages.
- [22] Srikar Kasi, John Kaewell, Kyle Jamieson. The Design and Implementation of a Hybrid Classical-Quantum Annealing Polar Decoder. In *IEEE Globecom Conference (2022)*.
- [23] Chenning Li, Xiuzhen Guo, Longfei Shangguan, Zhichao Cao, Kyle Jamieson. CurvingLoRa to Boost LoRa Network Capacity via Concurrent Transmission. *Proceedings of the USENIX NSDI Symposium (2022)*, 14 pages.
- [24] Zhuqi Li, Yuanchao Shu, Ganesh Ananthanarayanan, Longfei Shangguan, Kyle Jamieson, Paramvir Bahl. Spider: A Multi-Hop Millimeter-Wave Network for

- Live Video Analytics. In Proceedings of the ACM Symposium on Edge Computing (2021), 14 pages.
- [25] R. Ivan Zelaya, William Sussman, Jeremy Gummesson, Kyle Jamieson, Wenjun Hu. LAVA: Fine-Grained 3D Indoor Coverage for Small IoT Devices. In Proceedings of the ACM SIGCOMM Conference (2021), 14 pages. Paper acceptance rate: 23%.
- [26] Minsung Kim, Salvatore Mandrá, Davide Venturelli, Kyle Jamieson. Physics-Inspired Heuristics for Soft MIMO Detection in 5G New Radio and Beyond. In Proceedings of the ACM MobiCom Conference (2021), 14 pages. Paper acceptance rate: 17%.
- [27] Lili Chen, Wenjun Hu, Kyle Jamieson, Xiaojiang Chen, Dingyi Fang, Jeremy Gummesson. Pushing the Physical Limits of IoT Devices with Programmable Metasurfaces. In Proceedings of the USENIX NSDI Symposium (Boston, MA, 2021), 14 pages. Paper acceptance rate: 17%.
- [28] Srikar Kasi, Abhishek Singh, Davide Venturelli, Kyle Jamieson. Quantum Annealing for Large MIMO Downlink Vector Perturbation Precoding. In Proceedings of the IEEE ICC Conference (2021), 6 pages.
- [29] Fan Yi, Yaxiong Xie, Kyle Jamieson. Invited Paper: The Case for Small-Scale, Mobile-Enhanced COVID-19 Epidemiology. In Proceedings of the 19th International Symposium in Mobile, Ad hoc, and Wireless Networks (WiOpt), (Philadelphia, PA, 2021), 6 pages.
- [30] Srikar Kasi, Kyle Jamieson. Towards Quantum Belief Propagation for LDPC Decoding in Wireless Networks. In Proceedings of the ACM MobiCom Conference (London, U.K., 2020), 14 pages. Paper acceptance rate: 18%.
- [31] Yaxiong Xie, Fan Yi, Kyle Jamieson. PBE-CC: Congestion Control via Endpoint-Centric, Physical-Layer Bandwidth Measurements. In Proceedings of the ACM SIGCOMM Conference (New York, NY, 2020), 14 pages. Paper acceptance rate: 21%.
- [32] Tao Chen, Longfei Shangguan, Zhenjiang Li, Kyle Jamieson. Metamorph: Injecting Audible Commands into Over-the-air Voice Controlled Systems. In Proceedings of the Network and Distributed Security Symposium (San Diego, CA, 2020), 12 pages.
- [33] Amy Tai, Andrew Kryczka, Shobit Kanaujia, Kyle Jamieson, Michael J. Freedman, Asaf Cidon. Who's Afraid of Uncorrectable Bit Errors? Online Recovery of Flash Errors with Distributed Redundancy. In Proceedings of the USENIX Annual Technical Conference (Renton, WA, 2019), 15 pages. Paper acceptance rate: 20%.
- [34] Minsung Kim, Davide Venturelli, Kyle Jamieson. Leveraging Quantum Annealing for Large MIMO Processing in Centralized Radio Access Networks. In Proceedings of the ACM SIGCOMM Conference (Beijing, China, 2019), 14 pages. Paper acceptance rate: 14.5%.
- [35] Branden Ghena, Joshua Adkins, Longfei Shangguan, Kyle Jamieson, Philip Levis, Prabal Dutta. Challenge: Unlicensed LPWANs are Not Yet the Path to Ubiquitous Connectivity. In Proceedings of the ACM MobiCom Conference (Los Cabos, Mexico, 2019), 12 pages. Paper acceptance rate: 16.7%.
- [36] Zhuqi Li, Yaxiong Xie, Longfei Shangguan, R. Ivan Zelaya, Jeremy Gummesson, Wenjun Hu, Kyle Jamieson. Towards Programming the Radio Environment with Large Arrays of Inexpensive Antennas. In Proceedings of the USENIX NSDI

- Symposium (Boston, MA, 2019), 14 pages. Paper acceptance rate: 12.5% (fall deadline).
- [37] Yaxiong Xie, Jie Xiong, Mo Li, Kyle Jamieson. mD-Track: Leveraging Multidimensionality for Passive Indoor Wi-Fi Tracking. In Proceedings of the ACM MobiCom Conference (2019), 14 pages. Paper acceptance rate: 24%.
 - [38] Yao Peng, Longfei Shangguan, Yue Hu, Yujie Qian, Xiangshang Lin, Dingyi Fang, Kyle Jamieson. PLoRa: A Passive Long-Range Data Network from Ambient LoRa Transmissions. In Proceedings of the ACM SIGCOMM Conference (Budapest, Hungary, 2018), 14 pages. Paper acceptance rate: 18%.
 - [39] Zhenyu Song, Longfei Shangguan, Kyle Jamieson. Wi-Fi Goes to Town: Rapid Picocell Switching for Transit Wireless Networks. In Proceedings of the ACM SIGCOMM Conference (Los Angeles, CA, 2017), 14 pages. Paper acceptance rate: 14.4%.
 - [40] Christopher Husmann, Georgios Georgis, Konstantinos Nikitopoulos, Kyle Jamieson. FlexCore: Massively Parallel and Flexible Processing for Large MIMO Access Points. In Proceedings of the USENIX NSDI Symposium (Boston, MA, 2017), 14 pages. Paper acceptance rate: 18.2%.
 - [41] Longfei Shangguan, Zimu Zhou, Kyle Jamieson. Enabling Gesture-Based Interactions with Objects. In Proceedings of the ACM MobiSys Conf. (Niagara Falls, NY, 2017), 13 pages. Paper acceptance rate: 18%.
 - [42] Giulio Grassi, Paramvir Bahl, Kyle Jamieson, Giovanni Pau. ParkMaster: An In-Vehicle, Edge-Based Video Analytics Service for Detecting Open Parking Spaces in Urban Environments. In Proceedings of the ACM/IEEE Symposium on Edge Computing (San Jose, CA, 2017), 14 pages.
 - [43] Kun Qian, Chenshu Wu, Zheng Yang, Yunhao Liu, Kyle Jamieson. Widar: Decimeter-Level Passive Tracking via Velocity Monitoring with Commodity Wi-Fi. In Proceedings of the ACM MobiHoc Conf. (Chennai, India, 2017), 10 pages. Paper acceptance rate: 17%.
 - [44] Longfei Shangguan and Kyle Jamieson. Leveraging Electromagnetic Polarization in a Two-Antenna Whiteboard in the Air. In Proceedings of the ACM CoNEXT Conf. (Irvine, CA, 2016), 14 pages. Paper acceptance rate: 18.4%.
 - [45] Ju Wang, Hongbo Jiang, Jie Xiong, Kyle Jamieson, Xiaojiang Chen, Dingyi Fang, Binbin Xie. LiFS: Low Human Effort, Device-Free Localization with Fine-Grained Subcarrier Information. In Proceedings of the ACM MobiCom Conf. (New York, NY, 2016), 12 pages. Paper acceptance rate: 14.2%.
 - [46] Longfei Shangguan and Kyle Jamieson. The Design and Implementation of a Mobile RFID Tag Sorting Robot. In Proceedings of the ACM MobiSys Conf. (Singapore, 2016), 12 pages. Paper acceptance rate: 15.7%.
 - [47] Yaxiong Xie, Zhenjiang Li, Mo Li, Kyle Jamieson. Augmenting Wide-band 802.11 Transmissions via Unequal Packet Bit Protection. In Proceedings of the IEEE Infocom Conf. (San Francisco, CA, 2016), nine pages. Paper acceptance rate: 18%.
 - [48] Georgios Nikolaidis, Mark Handley, Kyle Jamieson, Brad Karp. COPA: Cooperative Power Allocation for Interfering Wireless Networks. In Proceedings of the ACM CoNEXT Conf. (Heidelberg, Germany, 2015), 12 pages. Paper acceptance rate: 20.9%.

- [49] Jie Xiong, Karthikeyan Sundaresan, Kyle Jamieson. ToneTrack: Leveraging Frequency-Agile Radios for Time-Based Indoor Wireless Localization. In Proceedings of ACM MobiCom Conf. (Paris, France, 2015), 13 pages. Paper acceptance rate: 17.8%.
- [50] Zhenjiang Li, Yaxiong Xie, Mo Li, Kyle Jamieson. Recitation: Rehearsing Wireless Packet Reception in Software. In Proceedings of ACM MobiCom Conf. (Paris, France, 2015), 13 pages. Paper acceptance rate: 17.8%.
- [51] Tan Zhang, Aakanksha Chowdhery, Paramvir Bahl, Kyle Jamieson, Suman Banerjee. The Design and Implementation of a Wireless Video Surveillance System. In Proceedings of the ACM MobiCom Conf. (Paris, France, 2015), 13 pages. Paper acceptance rate: 17.8%.
- [52] Jon Gjengset, Jie Xiong, Graeme McPhillips, Kyle Jamieson. Phaser: Enabling Phased Array Signal Processing on Commodity Wi-Fi Access Points. In Proceedings of ACM MobiCom Conf. (Maui, HI, 2014), 11 pages. Best presentation award to Jon Gjengset. Paper acceptance rate: 16.4%.
- [53] Konstantinos Nikitopoulos, Juan Zhou, Ben Congdon, Kyle Jamieson. Geosphere: Consistently Turning MIMO Capacity into Throughput. In Proceedings of ACM SIGCOMM Conf. (Chicago, IL, 2014), 12 pages. Paper acceptance rate: 19%.
- [54] Lynne Salameh, Astrit Zhushi, Mark Handley, Kyle Jamieson, Brad Karp. HACK: Hierarchical ACKs for Efficient Wireless Medium Utilization. In Proceedings of the USENIX Annual Technical Conf. (Philadelphia, PA, 2014), 12 pages. Best paper award. Paper acceptance rate: 17.6%.
- [55] Jie Xiong, Karthikeyan Sundaresan, Kyle Jamieson, Amir Khojastepour, Sampath Rangarajan. MIDAS: Empowering 802.11ac Networks with Multiple-Input Distributed Antenna Systems. In Proceedings of the ACM CoNEXT 2014 Conf. (Sydney, Australia, 2014), 12 pages. Best paper award. Paper acceptance rate: 19.7%.
- [56] Jie Xiong, Kyle Jamieson. ArrayTrack: A Fine-Grained Indoor Location System. In Proceedings of the USENIX NSDI Symp. (Lombard, IL, 2013), 14 pages. Cited by 167. Paper acceptance rate: 22%.
- [57] Jie Xiong, Kyle Jamieson. SecureArray: Improving Wireless Security with Fine-Grained Physical-Layer Information. In Proceedings of the ACM MobiCom Conf. (Miami, FL, 2013), 12 pages. Paper acceptance rate: 13.5%.
- [58] Omprakash Gnawali, Rodrigo Fonseca, Kyle Jamieson, David Moss, Philip Levis. Collection Tree Protocol. In Proceedings of the ACM SenSys Conf. (Berkeley, CA, 2009), 14 pages. Cited by 1,173. Paper acceptance rate: 17.6%.
- [59] Mythili Vutukuru, Hari Balakrishnan, Kyle Jamieson. Cross-Layer Wireless Bit Rate Adaptation. In Proceedings of the ACM SIGCOMM Conf. (Barcelona, Spain, 2009), 12 pages. Cited by 311. Paper acceptance rate: 10%.
- [60] Mythili Vutukuru, Kyle Jamieson, Hari Balakrishnan. Harnessing Exposed Terminals in Wireless Networks. In Proceedings of the USENIX NSDI Symp. (San Francisco, CA, 2008), 12 pages. Cited by 146. Paper acceptance rate: 17.7%.
- [61] Kyle Jamieson, Hari Balakrishnan. PPR: Partial Packet Recovery for Wireless Networks. In Proceedings of the ACM SIGCOMM Conf. (Kyoto, Japan, 2007), pp. 409–420. Cited by 272. Paper acceptance rate: 13.6%.

- [62] C. Emre Koksal, Kyle Jamieson, Emre Telatar, Patrick Thiran. Impacts of Channel Variability on Link-Level Throughput in Wireless Networks. In Proceedings of the ACM SIGMETRICS Conf. (Saint-Malo, France, 2006), pp. 51–62. Paper acceptance rate: 13.8%.
- [63] Bret Hull, Kyle Jamieson, Hari Balakrishnan. Mitigating Congestion in Wireless Sensor Networks. In Proceedings of the ACM SenSys Conf. (Baltimore, MD, 2004), pp. 134–147. Cited by 740. Paper acceptance rate: 14.5%.
- [64] Benjie Chen, Kyle Jamieson, Hari Balakrishnan, Robert Morris. Span: An Energy-Efficient Coordination Algorithm for Topology Maintenance in Ad Hoc Wireless Networks. In Proceedings of the ACM MobiCom Conf. (Rome, Italy, 2001), pp. 85–96. Cited by 2,951. Paper acceptance rate: 10.7%.

Refereed Workshop Publications

- [65] Kun Woo Cho, Yasaman Ghasempour, and Kyle Jamieson. “Towards Dual-Band Reconfigurable Metasurfaces for Satellite Networking”. In ACM HotNets Workshop (2022). Austin, TX, USA. doi:10.1145/3563766.3564086
- [66] Kun Woo Cho, Muhammad Hossein Mazaheri, Jeremy Gummesson, Omid Abari, Kyle Jamieson. mmWall: A Reconfigurable Metamaterial Surface for mmWave Networks. In Proceedings of the ACM International Workshop on Mobile Computing Systems and Applications (2021), six pages. Paper acceptance rate: 36%.
- [67] Zhuqi Li, Can Wu, Sigurd Wagner, James Sturm, Naveen Verma, Kyle Jamieson. REITS: Reflective Surface for Intelligent Transportation Systems. In Proceedings of the ACM International Workshop on Mobile Computing Systems and Applications (2021), six pages. Paper acceptance rate: 36%.
- [68] Fan Yi, Yaxiong Xie, Kyle Jamieson. Cellular-Assisted COVID-19 Contact Tracing. In Proceedings of the ACM MobiSys HealthDL Workshop (2021), six pages.
- [69] Minsung Kim, Davide Venturelli, Kyle Jamieson. Towards Hybrid Classical-Quantum Computation Structures in Wirelessly-Networked Systems. In Proceedings of the ACM Workshop on Hot Topics in Networks (2020), six pages. Paper acceptance rate: 25%.
- [70] Amy Tai, Andrew Kryczka, Shobhit Kanaujia, Kyle Jamieson, Michael J. Freedman, Asaf Cidon. Who’s Afraid of Uncorrectable Bit Errors? 11th Non-Volatile Memories Workshop (San Diego, CA, 2020).
- [71] Allen Welkie, Longfei Shangguan, Jeremy Gummesson, Wenjun Hu, Kyle Jamieson. Programmable Radio Environments for Smart Spaces. In Proceedings of the ACM Workshop on Hot Topics in Networks (Palo Alto, CA, 2017), six pages. Paper acceptance rate: 22.5%.
- [72] Bo Tan, Kevin Chetty, Kyle Jamieson. ThruMapper: Through-Wall Building Tomography with a Single Mapping Robot. In Proceedings of the ACM HotMobile workshop (Sonoma, CA, 2017), 6 pages. Paper acceptance rate: 36%.
- [73] Yaxiong Xie, Jie Xiong, Mo Li, Kyle Jamieson. xD-Track: Leveraging Information from Multiple Dimensions for Passive Wi-Fi Tracking. In Proceedings of the ACM HotWireless Workshop (New York, NY, 2016), six pages.
- [74] Waseem Ozan, Kyle Jamieson, Izzat Darwazeh. Truncating and Oversampling OFDM Signals in White Gaussian Noise Channels. In Proceedings of the IEEE

- Symposium on Communication Systems, Networks, and Digital Signal Processing (Prague, Czech Republic, 2016), six pages.
- [75] Jie Xiong, Kyle Jamieson, Karthikeyan Sundaresan. Synchronicity: Pushing the Envelope of Fine-Grained Localization with Distributed MIMO. In Proceedings of the ACM HotWireless Workshop (Maui, HI, 2014), six pages.
 - [76] Calum Harrison, Kyle Jamieson. Power-Aware Rateless Codes in Mobile Wireless Communications. In Proceedings of the ACM HotNets Workshop (Seattle, WA, 2012), six pages.
 - [77] Jie Xiong, Kyle Jamieson. Towards Fine-Grained Radio-Based Indoor Location. In Proceedings of the ACM HotMobile Workshop (San Diego, CA, 2012), six pages.
 - [78] Jie Xiong, Kyle Jamieson. SecureAngle: Improving Wireless Security Using Angle-of-Arrival Signatures. In Proceedings of the ACM HotNets Workshop, (Monterey, CA, 2010), six pages.
 - [79] Rodrigo Fonseca, Omprakash Gnawali, Kyle Jamieson, Phil Levis. Four-Bit Wireless Link Estimation. In Proceedings of the ACM-NSF HotNets Workshop (Atlanta, GA, 2007), six pages.
 - [80] Kyle Jamieson, Hari Balakrishnan, Y. C. Tay. Sift: a MAC Protocol for Event-Driven Wireless Sensor Networks. In Proceedings of the Third European Workshop on Wireless Sensor Networks (EWSN) (Zurich, Switzerland, 2006), 15 pages. Cited by 344.
 - [81] Prem Gopalan, Kyle Jamieson, Panayiotis Mavrommatis, Massimiliano Poletto. Signature Metrics for Accurate and Automated Worm Detection. In Proceedings of the ACM Workshop on Recurring Malcode (WORM) (Fairfax, VA, 2006), 7 pages.
 - [82] Kyle Jamieson, Bret Hull, Allen Miu, Hari Balakrishnan. Understanding the Real-World Performance of Carrier Sense. In Proceedings of the ACM SIGCOMM Workshop on Experimental Approaches to Wireless Network Design and Analysis (E-WIND) (Philadelphia, PA, 2005), six pages. Cited by 159.

Patents and Patents Pending

- [83] U.S. Patent No. 7,016,827 (1999): Method and System for Ensuring Robustness in Natural Language Understanding. Ganesh Ramaswamy, Kyle Jamieson, Jan Kleindienst; IBM Corporation (assignee).
- [84] Application Serial No. 11-387,087 (2006): Email-based Worm Propagation Properties. Prem Gopalan, Kyle Jamieson, Panayiotis Mavrommatis; Mazu Corp (assignee).
- [85] U.S. Patent No. 8,006,306 (2013): Exploit-based Worm Propagation Mitigation. Prem Gopalan, Kyle Jamieson, Panayiotis Mavrommatis; Riverbed Technology, Inc. (assignee).
- [86] U.S. Patent No. 8,386,892 (2013): Partial Packet Recovery for Wireless Networks. Kyle Jamieson, Hari Balakrishnan. Massachusetts Institute of Technology (assignee).
- [87] U.S. Patent No. 8,578,479 (2013): Worm Propagation Mitigation. Prem Gopalan, Kyle Jamieson, Panayiotis Mavrommatis. Riverbed Technology, Inc. (assignee).
- [88] PCT Application GB2013/052732 (2013): "Apparatus and method for determining the location of a mobile device using multiple wireless access points." UCL Business PLC (assignee).

- [89] UK Patent Application No. 1401579.6 (30 January 2014): “Elevation Compensation for Antenna-Constrained Time-Difference of Arrival Indoor Localization.” UCL Business PLC (assignee).
- [90] UK Patent Application No. 1401580.4 (31 January 2014): “Auto Phase-Offset Calibration for Time-Difference of Arrival Indoor Localization.” UCL Business PLC (assignee).
- [91] Provisional US Patent Application 62/466,479 filed March 3, 2017. Rapid Picocell Switching for Wireless Transit Networks. Kyle Jamieson, Longfei Shangguan, Zhenyu Song. Assignee: Princeton University.
- [92] Provisional US Patent Application 62/482,469 filed April 6, 2017. Pantomime: Enabling Gesture-Based Interactions with Objects. Longfei Shangguan, Kyle Jamieson. Assignee: Princeton University.
- [93] US Patent No. 9,804,256 (2017): Apparatus and Method for Determining the Location of a Mobile Device Using Multiple Wireless Access Points. Kyle Jamieson, Jie Xiong; UCL Business PLC (assignee).
- [94] Provisional US Patent Application 62/845,377 filed May 9, 2019. PCT application PCT/US2020/032380. Quantum Belief Propagation. Srikar Kasi and Kyle Jamieson. Assignee: Princeton University.
- [95] Provisional US Patent Application 62/845,642 filed May 9, 2019. PCT application PCT/US2020/032398. Leveraging Quantum Annealing for Large MIMO Processing in Cloud-Based Radio Access Networks. Minsung Kim, Davide Venturelli, Kyle Jamieson. Assignee: Princeton University.
- [96] US Patent No. 10,433,274 (2019): Apparatus and Method for Calibrating a Wireless Access Point Comprising an Array of Multiple Antennas. Kyle Jamieson, Jon Gjengset; UCL Business PLC (assignee).
- [97] Provisional US Patent Application 63/168,703 filed March 31, 2021. Kun Woo Cho, Mohammad Mazaheri, Jeremy Gummesson, Omid Abari, Kyle Jamieson.
- [98] Provisional US Patent Application 63/178,087 filed April 22, 2021. Video Bitrate Adaptation System for Short Video Streaming. Kyle Jamieson, Zhuqi Li, Yaxiong Xie.
- [99] Provisional US Patent Application 63/235,248 filed August 20, 2021. LTScope: The Design and Implementation of a Highly-Granular Monitor for Cross-Layer Cellular Protocol Design. Kyle Jamieson, Yaxiong Xie.
- [100] U.S. Patent No. 11,140,595 B2 (2021): Rapid Picocell Switching for Wireless Transit Networks. Inventor: Kyle Jamieson, Assignee: Princeton University.
- [101] Provisional US Patent Application 63/337,671 filed May 3, 2022. System and Method for Short Video Streaming. Kyle Jamieson, Zhuqi Li, Yaxiong Xie.
- [102] Provisional US Patent Application 63/356,797 filed June 29, 2022. Dual-band Reconfigurable Metamaterial Surfaces for Satellite Networking. Kyle Jamieson, Kun Woo Cho, Yasaman Ghasempour.

Other Research Outputs

- [103] Srikar Kasi, P. A. Warburton, John Kaewell, Kyle Jamieson. Challenge: A Cost and Power Feasibility Analysis of Quantum Annealing for NextG Cellular Wireless Networks. arXiv:2109.01465 [cs.NI], November 2021.

- [104] Abhishek Kumar Singh, Kyle Jamieson, Davide Venturelli, Peter McMahon. Ising Machines' Dynamics and Regularization for Near-Optimal Large and Massive MIMO Detection. arXiv:2105.10535 [cs.NI], November 2021.
- [105] Zhuqi Li, Can Wu, Sigurd Wagner, James Sturm, Naveen Verma, Kyle Jamieson. REITS: Reflective Surface for Intelligent Transportation Systems. arXiv:2010.13986, November 2020.
- [106] Ashwini Raina, Asaf Cidon, Kyle Jamieson, Michael Freedman. PrismDB: Read-aware Log-structured Merge Trees for Heterogeneous Storage. arXiv:2008.02352, August 2020.
- [107] Zhuqi Li, Yuanchao Shu, Ganesh Ananthanarayanan, Longfei Shangguan, Kyle Jamieson, Victor Bahl. Spider: Next Generation Live Video Analytics over Millimeter-Wave Networks. MSR Technical Report MSR-TR-2020-17, May 2020.
- [108] Zhuqi Li, Yaxiong Xie, Longfei Shangguan, R. Ivan Zelaya, Jeremy Gummesson, Wenjun Hu, Kyle Jamieson. Programmable Radio Environments with Large Arrays of Inexpensive Antennas. ACM GetMobile Magazine 23(3), September 2019.
- [109] Christina Fragouli, Magnüs Halldórson, Kyle Jamieson, Bhaskar Krishnamachari. Foundations of Wireless Networking (Dagstuhl Seminar 17271). Dagstuhl Reports 7:7, June 2018, pp. 1–21, doi:10.4230/DagRep.7.7.1.
- [110] Minsung Kim, Kyle Jamieson. Transforming MIMO BPSK Maximum Likelihood Detection into QUBO Form. Department of Computer Science Technical Report TR-010-17.
- [111] Marco Gruteser, Kyle Jamieson. Final Report from the NSF Visioning Workshop on Extreme Wireless Networking. ACM SIGMOBILE, October 2017, pp. 1–22.
- [112] Giulio Grassi, Matteo Sammarco, Paramvir Bahl, Kyle Jamieson, Giovanni Pau. Poster: ParkMaster—Leveraging Edge Computing in Visual Analytics. ACM MobiCom 2015 Poster (Paris, France).
- [113] Kyle Jamieson. Wi-Fi Goes to Town: Seamless Internet Connectivity in Metropolitan Underground Transport. UCL CS Research Note RN/14/17 (January 8, 2015).
- [114] Konstantinos Nikitopoulos, Juan Zhou, Ben Congdon, Kyle Jamieson. Geosphere: Consistently Turning MIMO Capacity into Throughput. UCL CS Research Note RN/13/20 (October 14, 2013).
- [115] Konstantinos Nikitopoulos, Kyle Jamieson. FASTER: Fine and Accurate Synchronization for Large Distributed MIMO Wireless Networks. UCL CS Research Note RN/13/19 (October 14, 2013).
- [116] Jie Xiong, Kyle Jamieson. ArrayTrack: A Fine-Grained Indoor Location System. UCL-CS Research Note RN/11/19 (October 19, 2011).
- [117] Kyle Jamieson. The SoftPHY Abstraction: from Packets to Symbols in Wireless Network Design. MIT PhD Thesis, 2008.
- [118] Kyle Jamieson. Implementation of a Power-Saving Protocol for Ad Hoc Wireless Networks. MIT M.Eng. Thesis, 2002.

Seminars

Keynote Addresses and Colloquia

- [119] “Should I Work on Wireless Networks? Advice for Early-Career Graduate Students.” Invited keynote talk, ACM MobiCom S3 Workshop (Istanbul, Turkey), August 26, 2012.
- [120] “Scaling Distributed MIMO with Fine-Grained Frequency Synchronization.” Distinguished Speaker Technical Talk at ACM MobiCom S3 Workshop (Miami, Florida), September 30, 2013.
- [121] “Tracking Mobiles, Objects, and People in the Wireless Internet of Things.” Invited keynote talk at the 2016 ACM MobiSys Workshop on Physical Analytics (Singapore), June 26, 2016.
- [122] “Continuous Spatial Awareness in the Wireless Internet of Things.” Keynote address, ACM-China Turing Award 50th Anniversary Celebration (Shanghai, China), May 12, 2017.
- [123] “Wi-Fi Goes To Town.” ACM International Symposium on Mobile Ad Hoc Networking and Computing (MobiHoc) 2018 Invited Keynote Talk (Los Angeles, CA), June 28, 2018.
- [124] “Congestion Control via Endpoint-Driven, Physical-Layer Capacity Measurements.” Rice University ECE Department Distinguished Speaker Series (Houston, TX), June 18, 2020.
- [125] “Smart Surfaces for NextG and Satellite mmWave and Ku-band Wireless Networks.” Invited Keynote, IEEE International Conference on Parallel and Distributed Systems, January 10, 2023.

Panel Moderator

- [126] “5G, 6G, NextG: Wireless Network Designers Discuss Architecture and Innovation,” Princeton *Engage* Conference (online), December 1, 2021.

Invited Seminars

- [127] “Partial Packet Recovery for Wireless Networks.” At Tufts University ECE Department Colloquium (Medford, Massachusetts, USA). Host: Prof. Hwa Chang, November 27, 2007.
- [128] —. University of California San Diego Department of Electrical and Computer Engineering (La Jolla, California, USA). Host: Prof. Curt Schurgers, March 5, 2008.
- [129] “Wireless Networks: Overcoming the Challenges, Leveraging the Opportunities.” At Cambridge University Computer Laboratory (Cambridge, UK). Host: Prof. Jon Crowcroft, February 26, 2009.
- [130] “Wireless Networks: Overcoming the Challenges, Leveraging the Opportunities.” At Microsoft Research Cambridge (Cambridge, UK). Host: Dr. Bozidar Radunovic, March 6, 2009.
- [131] “Cross-Layer Wireless Bit Rate Adaptation.” At National Univ. Singapore (NUS). Host: Dr. Haifeng Yu, November 9, 2009.
- [132] —. At Microsoft Research Asia (Beijing). Host: Dr. Yonguang Zhang, November 12, 2009.

- [133] “SecureAngle: Improving Wireless Security with Angle-of-Arrival.” At the Scottish Networking Event, Edinburgh Napier University (Edinburgh, UK), February 25, 2010.
- [134] “SecureAngle: Improving Wireless Security with Angle-of-Arrival.” At Edinburgh University Informatics Forum (Edinburgh, UK). Host: Dr. Mahesh Marina, June 24, 2010.
- [135] “Building Scalable, Secure, and Reliable ‘Chaotic’ Wireless Networks.” At Telefónica I+D (Barcelona, Spain). Host: Dr. Dina Papagiannaki, June 14, 2011.
- [136] “Exploiting Angle-of-Arrival Information for Highly Accurate and Responsive Indoor Localization.” At School of Computer and Communication Sciences, École Polytechnique Fédérale de Lausanne (Lausanne, Switzerland). Host: Dr. Katerina Argyraki, June 20, 2012.
- [137] “Exploiting Angle-of-Arrival Information for Highly Accurate and Responsive Indoor Localization.” At National University Singapore (NUS). Host: Dr. Haifeng Yu, February 4, 2013.
- [138] —. At Nanyang Technological University (Singapore). Host: Dr. Mo Li, February 5, 2013.
- [139] —. At Microsoft Research Redmond New Directions in Wireless Systems Design Summit (Redmond, Washington, USA). Host: Dr. Victor Bahl, May 30, 2013.
- [140] “Scaling Distributed MIMO with Fine-Grained Frequency Synchronization.” Invited seminar at NEC Laboratories America (Princeton, NJ, USA). Host: Dr. Karthik Sundaresan, September 3, 2013.
- [141] Lecturer, Microsoft Research Summer School 2014 on Wireless Networking. Microsoft Research India Summer School Series (Bangalore, India), June 24, 2014.
- [142] “Elevator Pitch: ArrayTrack: Precise, real-time indoor location.” ERC-ScienceBusiness Innovation Board New Technologies from the European Research Council Event (Brussels, Belgium), July 4, 2014.
- [143] “SmartTap: Experiences Taking Wireless Research to the Market in the ERC Proof-of-Concept Programme.” Invited Talk, Young Academy of Europe Annual Meeting 2014 (Barcelona, Spain), July 15, 2014.
- [144] “Bringing Phased Array Signal Processing Indoors to Wi-Fi Networks.” At Ohio State University (Columbus, OH). Host: Prof. Kannan Srinivasan, August 26, 2014.
- [145] —. At Massachusetts Institute of Technology (Cambridge, Massachusetts). Host: Prof. Dina Katabi, October 14, 2014.
- [146] —. At Stanford University NetSeminar (Stanford, CA), November 13, 2014.
- [147] —. At Toshiba Research Europe (Bristol, UK). Host: Dr. Zhong Fan, November 24, 2014.
- [148] —. At the Microsoft Research Devices and Networking Summit 2015 (Paris, France), May 11, 2015.
- [149] “Leveraging Array Signal Processing in the Wireless Internet of Things.” At RWTH Aachen (Aachen, Germany). Host: Prof. Petri Mähönen, May 15, 2015.
- [150] —. At Trinity College Dublin (Dublin, Ireland). Host: Prof. Douglas Leith, May 18, 2015.
- [151] —. At IIT Bombay (Mumbai, India). Host: Prof. Mythili Vutukuru, August 7, 2015.

- [152] —. At IIT Madras (Chennai, India). Host: Prof. Krishna Sivalingam, August 10, 2015.
- [153] “ArrayTrack: Precise, Real-time Indoor Location.” Princeton University Keller Center Industry Engagement Event, Princeton, NJ, October 6, 2015.
- [154] “Wi-Fi Goes to Town.” NSF Wireless Cities Workshop (Washington, D.C.), February 2, 2016.
- [155] “From Wi-Fi Device Tracking to Continuous Spatial Awareness in the IoT.” SIGCOMM/SIGMOBILE Industry Day (Santa Clara, CA), March 15, 2016.
- [156] “Tracking Mobiles, Objects, and People in the Wireless Internet of Things.” At University of Science and Technology China (Hefei, China). Host: Prof. Xiangyang Li, May 16, 2016.
- [157] —. At Shanghai Jiaotong University (Shanghai, China). Host: Prof. Xinbing Wang, May 17, 2016.
- [158] —. At Tsinghua University (Beijing, China). Host: Prof. Yunhao Liu, May 18, 2016.
- [159] —. At Microsoft Research Asia (Beijing, China). Host: Dr. Kun Tan, May 19, 2016.
- [160] —. At Rutgers WINLAB (New Brunswick, NJ). Host: Prof. Dipankar Raychaudhuri, June 13, 2016.
- [161] “Continuous Spatial Awareness in the Wireless Internet of Things.” Panelist at ACM MobiCom 2016 panel discussion on Emerging Mobile Technologies (New York, NY), October 6, 2016.
- [162] —. Invited seminar at the University of Surrey 5G Innovation Centre (Surrey, UK). Host: Dr. Konstantinos Nikitopoulos, March 21, 2017.
- [163] “Wi-Fi Goes to Town.” Invited talk at the 4th ACM Workshop on Hot Topics in Wireless Networks (HotWireless ’17, Snowbird, UT), October 16, 2017.
- [164] —. Google University Research Tech Talks Series (Mountain View, CA), December 14, 2017.
- [165] “Towards Adiabatic Quantum Computation for Massive MIMO Wireless Systems.” Universities Space Research Association/NASA Ames/Google Quantum Artificial Intelligence Laboratory Invited Seminar (Mountain View, CA). Host: Dr. Davide Venturelli, December 15, 2017.
- [166] “5G is a Software Play.” Microsoft Research Faculty Summit Invited Talk. Redmond, WA, July 18, 2018.
- [167] “Wi-Fi Goes to Town.” Invited seminar at Imperial College London (London, UK). Host: Dr. Hamed Haddadi, October 5, 2018.
- [168] “Quantum Compute-Enabled Wireless Networks.” Invited seminar at University of Waterloo (Waterloo, Canada). Host: Prof. Srinivasan Keshav, May 19, 2019.
- [169] —. Invited seminar at Inria-Institut Mines-Telecom-Sorbonne Universite-Nokia Bell Labs Laboratory of Information, Networking, and Communication Sciences (Paris, France). Host: Dr. Renata Teixeira, June 26, 2019.
- [170] —. Cosener’s Multiservice Networks Workshop (Abingdon, Oxford, U.K.), July 3, 2019.
- [171] —. Invited seminar at the IEEE Sarnoff Symposium (Newark, NJ), September 23, 2019.

- [172] —. Invited seminar at the D-Wave Qubits North America Symposium (Newport, RI), September 24, 2019.
- [173] “Congestion Control via Endpoint-Driven, Physical-Layer Capacity Measurements.” Cambridge University Computer Laboratory Invited Seminar (Cambridge, U.K.), April 30, 2020.
- [174] “Quantum Compute-Enabled Wireless Networks.” Cosener’s Multiservice Networks Workshop (Abingdon, Oxford, U.K.), July 9, 2020.
- [175] “Quantum Compute-Enabled Wireless Networks” and “Smart Surfaces will Enable Better Wireless Networks.” Invited seminar, Samsung Corporation Innovation Forum, July 28, 2020.
- [176] “Smart Surfaces will Enable Better Wireless Networks.” MIT Media Lab IoT Seminar Series, Host: Prof. Fadel Adib, October 19, 2020.
- [177] —. NSF/WINLAB Workshop on Reconfigurable Radio Environments, November 13, 2020.
- [178] “Quantum Computation for MIMO Detection and LDPC Decoding in Wireless Networks.” IEEE ComSoc Technical Committee on Green Communications and Computing-Transactions on Green Communications and Networks joint seminar on Emerging Technologies for Green 6G, November 25, 2020.
- [179] “Leveraging Quantum Computation for Faster Wireless Networks.” Invited Seminar, UMass Electrical and Computer Engineering Dept., Host: Prof. Jeremy Gummesson, February 19, 2021.
- [180] —. Invited Talk, Stanford University Electrical Engineering Dept., Host: Prof. Andrea Goldsmith, March 19, 2021.
- [181] —. Invited Seminar, UW Computer Science and Engineering Dept., Hosts: Prof. Shyam Gollakota and Prof. Ratul Mahajan, May 12, 2021.
- [182] “Assessing the Feasibility of mmWave: A mmWave Programmable Surface.” Invited talk, IEEE ICC 2022 Special Workshop 1: Reconfigurable Intelligent Surfaces, May 16, 2022.
- [183] “Quantum Compute-Enabled Wireless Networks.” Invited seminar, Microsoft Corporation, Azure for Operators (AFO) Seminar Series. September 20, 2022.
- [184] “Smart Surfaces for NextG and Satellite mmWave and Ku-Band Wireless Networks.” Invited seminar, Microsoft Research Networking Lecture Series. September 26, 2022.
- [185] —. Invited speaker, Microsoft Research Asia Summit: Next Generation Networking Workshop, Beijing, China (virtual). October 25, 2022.
- [186] “Quantum Compute-Enabled Wireless Networks.” Invited talk, Japan Science and Technology Agency-NTT Basic Research Laboratories Coherent Network Computing ‘22 Conference, October 26, 2022, Stanford University (virtual).
- [187] “Quantum Compute for NextG Wireless Radio Unit Baseband Processing.” Invited talk, UCSB-NSF Workshop on Software-Hardware Co-Design for Quantum Computing. October 29, 2022 (virtual).
- [188] “Smart Surfaces for NextG and Satellite mmWave and Ku-Band Wireless Networks.” Invited seminar, Ohio State University CSE Department (NSF AI Edge Institute) Artificial Intelligence of Things Seminar of Things. November 1, 2022.

- [189] “Quantum Compute for NextG Wireless Networks.” IEEE ComSoc School Series Event: Summer School on 6G Communication and Wireless Technologies. Program Chairs: Prof. Josep M. Jornet (Committee Chair), Prof. Stefano Basagni, Dr. Vitaly Petrov, Prof. Elena Bernal Mor, Prof. Tommaso Melodia. The Institute for Wireless IoT at Northeastern University. June 9, 2023.

Funding

External Grants and Gifts

- PI, NSF award: AST-2232457 (\$190,000) Collaborative Research: SII-NRDZ:Spectrum Sharing via Consumption Models and Telemetry—Prototyping and Field Testing in an Urban FCC Innovation Zone. January 1,2023–December 31, 2025.
- PI, NSF Award CNS-2223556 (\$600,000) IMR: MT: Fine-Grained Telemetry for Next-Generation Cellular Access Networks (NG-Scope) October 1, 2022–September 30, 2024.
- Co-PI, NSF Award CNS-2148271 (\$320,000) RINGS: Resilient mmWave Networks via Distributed In-Surface Computing (mmRISC), May 1, 2022–April 30, 2025.
- SONY Research Award Program, Focused Research on Reconfigurable Reflector Type Materials, January 15, 2022–July 14, 2023 (\$150,000).
- Amateur Radio Digital Communications Gift for Fine Grained 5G Wireless Telemetry, December 2021 (\$91,687).
- Gift funding from InterDigital Corporation for research in quantum-enabled wireless networks, 2019–2023 (\$430,770).
- Qualcomm Innovation Fellowship 2021–2022 (\$100,000).
- Anonymous Gift (\$100,000) for research in smart surfaces, October 2020.
- PI, NSF Award CNS-2027647 (\$100,000) RAPID: Fine-Grained, Privacy-Respecting Contact Traceback for COVID-19 Epidemiology, May 1, 2020–April 30, 2021.
- PI, Microsoft Corporation Research Award (\$100,000) for Intelligent Edge: Towards Building a Campus-Wide 5G Wireless Security Camera Infrastructure. March 8, 2019.
- PI, NSF Award #1824357 (\$372,667) SpecEES: Collaborative Research: Advancing the Wireless Spectral Frontier with Quantum-Enabled Computational Techniques (QENeTs), October 1, 2018–July 31, 2022.
- Co-PI, NSF Award #1763546 (\$1,200,000) CSR: Medium: Rethinking Distributed SSD Storage Systems, August 15, 2018–July 31, 2022.
- PI, NSF CNS Award #1763309 (\$191,278) for Assessing Feasibility of Programming the Ambient Wireless Environment, April 15, 2018–April 14, 2019.
- PI, NSF CNS Award #1617161 (\$400,000) for Continuous Spatial Awareness (CoSA) for Smart and Connected Objects, October 1, 2016–September 30, 2019.

- PI, Google Faculty Research Award (\$63,000) for *Wi-Fi Goes to Town*, February 2015.
- PI, European Research Council (ERC) Seventh Framework Program (“Ideas” Specific Program) Proof of Concept Award (€149,238 = \$217,887ⁱ) for *SmartTap: Tapping Wi-Fi Infrastructure for Fine-Grained Indoor Location*, April 2013–August 2014. The ERC is the pan-European funding body for basic frontier academic research in the EU’s Seventh Framework program.
- PI, ERC Seventh Framework Program (“Ideas” Specific Program) Starting Investigator Award (€1.46m = \$2.0m) for *CHAOSNETS: Building Scalable, Secure, and Reliable “Chaotic” Wireless Networks*, November 2011–October 2016.
- PI, UK Engineering and Physical Sciences Research Council (EPSRC) “Bridging the Gaps” award (£8,000 = \$13,168) for *Energy Efficiency for the Compute Cloud*, March 2010–February 2011. The EPSRC is the UK funding body for research in Engineering and the Physical Sciences, including Computer Science.
- Unrestricted gift from Microsoft Research (\$15,000), July 2010.

Internal Funding

- “Large-Scale Wireless Cross-Link Learning (CLL),” Princeton University Project X Fund (\$90,000) July 2022–June 2024.
- Princeton University Dean for Research COVID-19 Research Funding Call (\$100,000) June 2020–May 2021.
- Princeton University Project X Fund (\$150,000) February 1, 2018–Jan 31, 2020.
- Princeton University Office of Technology Licensing Intellectual Property Accelerator Fund Program award (\$100,000) for *Wi-Fi Goes to Town*, January 2018.
- UCL Computer Science Departmental Strategic Research Fund (£3,190 = \$5,252ⁱⁱ), October 2011.

Donations

- Hardware donation (\$10,000 value) from the Microsoft Research Software Radio Academic Program, software donation (\$25,000 value) from the Xilinx University Program.
- Hardware donation (\$12,000 value), memory testing equipment from Intel Corporation (September 2016).
- Universities Space Research Association (USRA) Cycle 3 (2018) and Cycle 4 (2020) Quantum Computer Research Opportunity.

References

Available upon request.

ⁱ January 9, 2014 exchange rate: EUR/USD=1.3609

ⁱⁱ January 9, 2014 exchange rate: GBP/USD=1.6460