

Kannan Srinivasan (Athreya)

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RESEARCH INTERESTS

Wireless Systems and Networking, Wireless Security, Low Power Wireless Systems and Power Line Communication Systems (Smart Grid).

EDUCATION

09/05-09/10 PhD, Electrical Engineering, Stanford University, CA.
08/00-08/02 MS, Electrical & Computer Engineering, Oklahoma State University, OK.
08/96-06/00 BS, Electronics & Communications Engineering, University of Madras, India.

PROFESSIONAL EXPERIENCE

09/16-Present Associate Professor, Department of Computer Science, The Ohio State University.
09/11-09/16 Assistant Professor, Department of Computer Science, The Ohio State University.
09/10-09/11 Post-Doctoral Researcher, The University of Texas at Austin.
09/05-09/10 Research Assistant, Stanford Information Networks Group, Stanford University.
01/03-09/05 Research Officer, National Research Council of Canada, Wireless Systems Group, Sydney, Nova Scotia, Canada.
08/02-12/02 Electrical/Wireless Engineer, TechTrol Inc., Pawnee, OK.
06/02-08/02 Summer Intern, TechTrol Inc., Pawnee, OK.
08/00-08/02 Research Assistant, Oklahoma State University, Stillwater, OK.
11/99-01/00 Engineering Intern, Bharat Electronics Ltd., Chennai, India.
05/98-06/98 Intern, Electronics Corporation of Tamil Nadu (ELCOT), Chennai, India.

AWARDS

Usenix ATC 2016, Best of the Rest.
Usenix NSDI 2016, Best Student Paper Award.
Lumley Research Award 2015, College of Engineering, OSU.
MobiCom 2014 Best Paper Finalist.
Excellent Performance Award 2014, Department of Computer Science, OSU.
IPSN 2013 Best Paper Runner Up. (Paper on Low Power Counting)
NSF CAREER Award.
Best Paper Award, MobiCom 2010. (Paper on Spatial Correlation)
Best Paper Award Nominee, MobiCom 2010. (Paper on Wireless Full Duplex)
Best Demo Award, MobiCom 2010. (Work on Full Duplex)
Year 2005 Stanford University Electrical Engineering Departmental Fellowship.
Year 2000 Presidential Award, Oklahoma State University.

TEACHING EXPERIENCE

09/11-Present Assistant / Associate Professor, The Ohio State University.
CSE 3461/5461 (Introduction to Data Communications) in Fall 2012, Fall 2013, Fall 2014, Fall 2015, Fall 2016 (2 sections), Fall 2017, Fall 2018, Fall 2019.
CSE 5401 (Introduction to Wireless Networking) in Spring 2016.
CSE 678 (Internet Programming) in Winter 2012.
01/05-04/05 Lecturer, ELEC 480: Selected Topics in Networking, Cape Breton University (CBU), Sydney, Nova Scotia, Canada.
Gave recitations, prepared problem sets and exams, and graded exams.
08/01-12/01 Teaching Assistant, Wireless Communication (Graduate Level Course), Oklahoma State University.
Graded problem sets and held TA sessions.
01/01-05/01 Teaching Assistant, Telecommunications Laboratory, Oklahoma State University.
Organized lab material, set up, organized and supervised lab sessions. Guided graduate students through setting up ATM, Netbuilder II, Gigabit Extreme switches, CELL Plex 7000, CoreBuilder 7000, DMS 10, and PBX systems.

01/01-05/01 Teaching Assistant, FORTRAN Lab, Oklahoma State University.
Supervised lab sessions, guided undergraduate students to program in FORTRAN and graded exams.

08/00-12/00 Teaching Assistant, Lego Lab, Oklahoma State University.
Supervised lab sessions, guided undergraduate/graduate students to program in Interactive C and Java, and graded exams.

PENDING FUNDING

NSF CNS Core Medium, Kannan Srinivasan (PI), Srinivasan Parthasarathy (Co-PI), \$1,181,649 (split equally among the PIs), NSF Physics-based Learning for Channel Prediction in Wireless Networks, 36 months.

NSF CC*: Integration-Large, Anish Arora (PI), Rajiv Ramnath (Co-PI), Kannan Srinivasan (Co-PI), \$996,240, NSF CC*: Integration Large: POWWOW: Software-Defined Infrastructure for Wireless, Edge Cybersecurity Testbeds, 24 months.

NSF CNS Core: Small, Kannan Srinivasan (PI), \$499,999, NSF CNS Core: Small: Towards MIMO Power Line Communication for Scalability, Coverage and High Data Rate, 36 months.

NSF Collaborative Research: MLWiNS, Lei Ying (PI), Vijay Subramanian (Co-PI), Mingyan Liu (Co-PI), Ness Shroff (Co-PI), Kannan Srinivasan (Co-PI), \$600K (OSU's share, split equally between Ness and Kannan), Collaborative Research: MLWiNS: Machine Learning for Distributed Learning Centric Wireless Networks, 36 months.

CURRENT & PREVIOUS FUNDING

NSF NeTS Small, Kannan Srinivasan (PI), Ness Shroff (Co-PI), \$267,736 (split equally among the PIs), NSF NeTS: Small: Infrastructure-Free Robust Relative Localization of Vehicles on the Road, 12 months.

ONR, Kannan Srinivasan (PI), Prasun Sinha (Co-PI), \$300,000 (split equally among the PIs), Joint neighbor identification and channel estimation for enabling advanced MAC-PHY techniques in ad hoc networks, 29 months.

NSF EARS, Kannan Srinivasan (PI), Lili Qiu (Co-PI), \$200,000 (PI Srinivasan's share), Collaborative research: Full duplex for cognitive networks, 36 months.

NSF Medium, Can Emre Koksal (PI), Kannan Srinivasan (Co-PI), Atilla Eryilmaz (Co-PI), \$799,582 (split equally among the PIs), Connecting the next billion: Rethinking wireless network design principles for the internet of everything, 48 months.

NSF Medium, Prasun Sinha (PI), Kannan Srinivasan (Co-PI), Panganamala R. Kumar (Co-PI), \$1,125,000 (\$750K split equally between PIs Sinha and Srinivasan + \$380K for PI Kumar), Leveraging Physical Layer Advances for the Next Generation Distributed Wireless Channel Access Protocols, 36 months.

NSF CAREER, Kannan Srinivasan (PI), Together We Rise: A Unified MIMO - Full Duplex Network Architecture, \$546,604, 60 months.

DoD-NSA, Kannan Srinivasan (PI) and Sriram Vishwanath (Co-PI), Building a Practical Wireless Full Duplex System, \$772,011 (\$530,838 for PI Srinivasan + \$241,173 for PI Vishwanath).

MENTORING

Current PhD Kingya Zhao, Wei-Han Chen, Avishek Banerjee, Wei Sun, Yifan Mao, Ananya Mahanti and Jiaqi Xu.

Past PhD	Bo Chen (now @ Meraki / Cisco), Wenjie Zhou (now @ Google), Yue Qiao (now @ Google), Vivek Yenamandra (now @ Simmons Research), Fei Wu (now @ AT&T Research Labs), Zhenzhi Qian (now @ Facebook), Lu Chen (now @ Google), Ouyang Zhang (now @ Google), and Arjun Bakshi (now @ Amazon).
Current MS Thesis	Maaz Mombasawala.
Past MS Project	Deepika Dilip Kumar, Arka Bhattacharya, Juan I. Santa Cruz, Sam Cooler, Manveen Kaur and Varun Joshi.
Temporary Undergraduate	Rupendra Mitra, Balaji Palaniswami. Saatvik Agarwal, Jonathan Chu, Juan Batiz-Benet.

PUBLICATIONS

Conference / Workshop

- Arjun Bakshi, Yifan Mao, Kannan Srinivasan, Srinivasan Parthasarathy, Fast and Efficient Cross Band Channel Prediction Using Machine Learning, ACM MobiCom 2019.
- Lu Chen, Fang Liu, Kannan Srinivasan, Verification: Constructive and Destructive Full Duplex Relays, ACM MobiCom 2019.
- Ouyang Zhang, Zhenzhi Qian, Yifan Mao, Kannan Srinivasan and Ness Shroff, ERSCC: Enable Efficient and Reliable Screen-Camera Communication, ACM MobiHoc 2019.
- Zhenzhi Qian, Yang Yang, Kannan Srinivasan, Ness Shroff, Joint Antenna Allocation and Link Scheduling in FlexRadio Networks, IEEE Inform 2019.
- Fei Wu, Lu Chen, Jiaqi Xu, Kannan Srinivasan and Ness Shroff, High throughput low delay wireless multicast via multi-channel moving window codes, IEEE Inform 2018.
- Arjun Bakshi, Srinivasan Parthasarathy and Kannan Srinivasan, Semi-Supervised Community Detection Using Structure and Size, IEEE ICDM 2018.
- Tanmoy Das, Lu Chen, Rupam Kundu, Arjun Bakshi, Prasun Sinha, Kannan Srinivasan, Gaurav Bansal and Takayuki Shimizu, CoReCast: Collision Resilient Broadcasting in Vehicular Networks, ACM MobiSys 2018.
- Xingyu Zhou, Fei Wu, Jian Tan, Kannan Srinivasan and Ness Shroff, Degree of Queue Imbalance: Overcoming the Limitation of Heavy-traffic Delay Optimality in Load Balancing Systems, ACM Sigmetrics 2018.
- Yue Qiao, Kannan Srinivasan and Anish Arora, Channel Spoofer: Defeating Channel Variability and Unpredictability, Usenix NSDI 2017.
- Lu Chen, Fei Wu, Jiaqi Xu, Kannan Srinivasan and Ness Shroff, Bypass: Enabling end-to-end full duplex, ACM MobiCom 2017.
- Zhenzhi Qian, Fei Wu, Zizhan Zheng, Kannan Srinivasan and Ness Shroff, Concurrent Channel Probing and Data Transmission in Full-duplex MIMO Systems, ACM MobiHoc 2017.
- Vivek Yenamandra, Akshay Uttama Nambi, Venkata Padmanabhan, Vishnu Navda and Kannan Srinivasan, CamMirror: Single-Camera-based Distance Estimation for Physical Analytics Applications, ACM WPA 2017.
- Ouyang Zhang and Kannan Srinivasan, Mudra: User-Friendly Fine-Grained Gesture Recognition Wi-Fi Signals, ACM CoNEXT 2016.
- Wenjie Zhou (Co-primary), Tanmoy Das (Co-primary), Lu Chen (Co-primary), Kannan Srinivasan and Prasun Sinha, BASIC: Backbone-Assisted Successive Interference Cancellation, ACM MobiCom 2016.
- Fei Wu, Yang Yang, Ouyang Zhang, Kannan Srinivasan and Ness Shroff, Anonymous Query Based Rate Control for Wireless Multicast: Approaching Optimality With Constant Feedback, ACM MobiHoc 2016.
- Arjun Bakshi (Co-primary), Lu Chen (Co-Primary), Kannan Srinivasan, Can Emre Koksal and Atilla Eryilmaz, EMIT: An Efficient MAC Paradigm for the Internet of Things, IEEE Infocom 2016.
- Zhenzhi Qian, Bo Ji, Kannan Srinivasan and Ness Shroff, Achieving delay rate-function optimality in OFDM downlink with time-correlated channels, IEEE Infocom 2016.

- Yue Qiao, Ouyang Zhang, Kannan Srinivasan and Anish Arora, PhyCloak: Obfuscating Sensing from Communication Signals, Usenix ATC 2016. **(Best of The Rest)**
- Yue Qiao, Ouyang Zhang, Kannan Srinivasan and Anish Arora, PhyCloak: Obfuscating Sensing from Communication Signals, Usenix NSDI 2016. **(Best Student Paper Award)**
- Bo Chen, Yue Qiao, Ouyang Zhang and Kannan Srinivasan, AirExpress: Enabling in-band Wireless Cut-through Transmission, ACM MobiCom 2015.
- Bo Chen, Vivek Yenamandra and Kannan Srinivasan, Tracking Keystrokes Using Wi-Fi, ACM MobiSys 2015.
- Bo Chen, Vivek Yenamandra and Kannan Srinivasan, FlexRadio: Fully Flexible Radios and Networks, Usenix NSDI 2015.
- Bo Chen, Vivek Yenamandra and Kannan Srinivasan, Interference Alignment Using Shadow Channel, IEEE Infocom 2015.
- Yue Qiao, Kannan Srinivasan and Anish Arora, Shape Matters, Not The Size: A New Way to Extract Secret Keys from Channel, ACM Hot Topics on Wireless 2014.
- Bo Chen, Gopikrishna Tummala, Yue Qiao and Kannan Srinivasan, Wireless Cut-Through: Is It Possible?, ACM Hot Topics on Wireless 2014.
- Tarun Bansal, Wenjie Zhou, Prasun Sinha and Kannan Srinivasan, BBN: Throughput Scaling in Dense Enterprise WLANs with Blind Beamforming and Nulling, ACM MobiCom 2014. **(Best Paper Finalist)**
- Vivek Yenamandra and Kannan Srinivasan, Vidyut: Exploiting Power Line Infrastructure for Enterprise Wireless Networks, ACM SIGCOMM 2014.
- Yue Qiao, Kannan Srinivasan and Anish Arora, Configuration Hopping : A Secure Communication Protocol without Explicit Key Exchange, The 16th International Symposium on Stabilization, Safety, and Security of Distributed Systems (SSS 2014).
- Wenjie Zhou and Kannan Srinivasan, SIM+: A Simulator for Full Duplex Communication International Conference on Signal Processing and Communications (SPCOM 2014). (Invited)
- Tarun Bansal, Wenjie Zhou, Kannan Srinivasan and Prasun Sinha, RobinHood: Sharing the Happiness in a Wireless Jungle, ACM HotMobile 2014, 6 pages.
- Yang Yang, Bo Chen, Kannan Srinivasan and Ness B. Shroff, Characterizing the Achievable Throughput in Wireless Networks with Two Active RF chains, IEEE Infocom 2014, 9 pages.
- Wenjie Zhou, Dong Li, Kannan Srinivasan and Prasun Sinha, "DOMINO: Relative Scheduling in Enterprise Wireless LANs", CoNEXT 2013, 12 pages.
- Wenjie Zhou, Kannan Srinivasan and Prasun Sinha, "RCTC: Rapid Concurrent Transmission Coordination in Full Duplex Wireless Networks," ICNP 2013, 12 pages.
- Tarun Bansal, Bo Chen, Prasun Sinha, and Kannan Srinivasan, "Symphony: Cooperative Packet Recovery over the Wired Backbone in Enterprise WLANs," MobiCom 2013, 12 pages.
- Wenjie Zeng, Anish Arora, and Kannan Srinivasan, "Low Power Counting via Collaborative Wireless Communications," IPSN 2013, 12 pages. **(Best Paper Runner Up)**
- Kyle Miller, Atresh Sanne, Kannan Srinivasan, and Sriram Vishwanath, "Enabling Real-Time Interference Alignment: Promises and Challenges," MobiHoc 2012, 9 pages.
- Kannan Srinivasan, Steven Hong, Mayank Jain, Jung Il Choi, Jeff Mehlman, Sachin Katti, and Philip Levis, Beyond Full Duplex Wireless, In Proceedings of the Asilomar Conference on Signals, Systems, and Computers, 2012 (Asilomar 2012), 5 pages.
- Vidur Bhargava, Jubin Jose, Kannan Srinivasan, and Sriram Vishwanath, "Q-CMRA: Queue-Based Channel-Measurement and Rate-Allocation," IEEE Transactions on Wireless Communications 2012, 10 pages.
- Kannan Srinivasan, Mayank Jain, Jung Il Choi, Tahir Azim, Edward S Kim, Philip Levis and Bhaskar Krishnamachari, "The κ -Factor: Inferring Protocol Performance using Inter-Link Reception Correlation," Mobicom 2010, 12 pages. **(Best Paper Award)**
- Kannan Srinivasan (Co-Primary Author), Jung Il Choi (Co-Primary Author), Mayank Jain (Co-Primary Author), Philip Levis and Sachin Katti, "Achieving Single Channel, Full Duplex Wireless Communication," Mobicom 2010, 12 pages. **(Best Paper Nominee)**

- Kannan Srinivasan, Maria A. Kazandjieva, Saatvik Agarwal, and Philip Levis, “The β -factor: Measuring Wireless Link Burstiness,” SenSys 2008, 14 pages.
- Megan Wachs, Jung Il Choi, Jung Woo Lee, Kannan Srinivasan, Zhe Chen, Mayank Jain and Philip Levis, “Visibility: A New Metric for Protocol Design,” SenSys 2007, 14 pages.
- Kannan Srinivasan, Prabal Dutta, Arsalan Tavakoli, and Philip Levis, “Some Implications of Low-Power Wireless to IP Routing,” HotNets V, 2006, 6 pages.
- Kannan Srinivasan, and Philip Levis, “RSSI is Under Appreciated,” EmNets 2006, 5 pages.
- Kannan Srinivasan, Moise Ndoh and Kadambari Kaluri, “Advanced Wireless Networks for Underground Mine Communications,” IWWCUCA 2005, 4 pages.
- Kannan Srinivasan, and Stephen Michell, “State Based Key Hop (SBKH) Protocol,” Wireless 2004, 10 pages.
- Kannan Srinivasan, and Stephen Michell, “Performance of State Based Key Hop (SBKH) Protocol for Security on Wireless Systems,” VTC2004-Fall, 5 pages.
- Stephen Michell and Kannan Srinivasan, “State Based Key Hop (SBKH) Protocol: A Lightweight Security Protocol for Wireless Networks,” PE-WASUN 2004, 7 pages.
- Kannan Srinivasan, Hooi-Min Soo, and Jong-Moon Chung, “Performance Analysis of Wireless MultiProtocol Label Switching (WMPLS),” Wireless 2003, 14 pages.
- Jong-Moon Chung, Kannan Srinivasan, Hooi-Min Soo and Sang-Chul Kim, “Handover Control and Analysis of WMPLS Networks,” MWSCAS 2002, 4 pages.
- Jong-Moon Chung, Kannan Srinivasan, Sang-Chul Kim, Zhee Quan and Mauricio A. Subieta, “Handover Control and Analysis of WMPLS Networks,” MWSCAS 2002, 4 pages.

Journal

- Arjun Bakshi, Lu Chen, Kannan Srinivasan, Can Emre Koksal and Atilla Eryilmaz, EMIT: An efficient MAC paradigm for the Internet of Things, IEEE/ACM Transactions on Networking (ToN) 2019, 12 pages.
- Xingyu Zhou, Fei Wu, Jian Tan, Kannan Srinivasan and Ness Shroff, Degree of Queue Imbalance: Overcoming the Limitation of Heavy-traffic Delay Optimality in Load Balancing Systems, ACM POMACS 2018, 42 pages.
- Kannan Srinivasan, Prabal Dutta, Arsalan Tavakoli and Philip Levis, “An Empirical Study of Low Power Wireless,” ACM Transactions on Sensor Networks, Mar 2010, 49 pages.
- Jong-Moon Chung, Mauricio A. Subieta, and Kannan Srinivasan, “Wireless MultiProtocol Label Switching (WMPLS),” IEEE Transactions on Mobile Computing, 15 pages.

IETF Draft

- Jong-Moon Chung, Kannan Srinivasan and Mauricio A. Subieta, “Wireless MultiProtocol Label Switching (WMPLS),” The Network Society, 2000.

Technical Report

- Kannan Srinivasan (**Co-Primary Author**), Jung Il Choi (**Co-Primary Author**), Mayank Jain (**Co-Primary Author**), Philip Levis and Sachin Katti, “Achieving Single Channel, Full Duplex Wireless Communication,” Technical Report SING-10-00.
- Kannan Srinivasan, Mayank Jain, Jung Il Choi, Tahir Azim, Edward S Kim, Philip Levis and Bhaskar Krishnamachari, “The κ -Factor: Inferring Protocol Performance using Inter-Link Reception Correlation,” Technical Report SING-10-01.
- Kannan Srinivasan, Prabal Dutta, Arsalan Tavakoli and Philip Levis, “An Empirical Study of Low Power Wireless,” Technical Report SING-08-03.
- Maria A. Kazandjieva, Mayank Jain, Kannan Srinivasan and Philip Levis, “PRR Is Not Enough,” Technical Report SING-08-01.
- Kannan Srinivasan, Maria Kazandjieva, Saatvik Agarwal and Philip Levis, “The β -factor: Improving Bimodal Wireless Networks,” Technical Report SING-07-01.
- Kannan Srinivasan, Prabal Dutta, Arsalan Tavakoli and Philip Levis, “Understanding the Causes of Packet Delivery Success and Failure in Dense Wireless Sensor Networks,” Technical Report SING-06-00.

Magazine

- Jong-Moon Chung, Mauricio A. Subieta and Kannan Srinivasan (*Invited Article*), “Analysis of WMPLS Applications and Performance Features,” MPLS World Mag., May. 2002.

PROFESSIONAL ACTIVITIES

- TPC Co-Chair ACM MobiCom 2017.
- TPC Co-Chair, ACM Hot Wireless 2015.
- Panel Chair, ACM WinTECH.
- Invited Panelist, Panel Session: Full Duplex Communications in Wireless Networks, MobiHoc 2014.
- TPC Member of MobiCom 2013-Present, CoNEXT (2014, 2015, 2016 and 2019 (External)), MobiSys (2015, 2016, 2017 and 2020), SenSys 2020, IPSN 2020, ICCPS 2013, MobiHoc 2012 and SECON 2011.
- Tutorial organizer at the 14th International Symposium on Stabilization, Safety, and Security of Distributed Systems (SSS 2012), “On the Physical Layer of Wireless Networks”.
- External reviewer of IPSN 2007, SIGCOMM 2007, IEEE VTC, ICC 2008.
- Reviewer of Transactions on Sensor Networks, Transactions on Mobile Computing, Transactions on Vehicular Technology.
- Demonstrated the importance of securing wireless networks in ITExpo 2003, NS, Canada.
- Student Host for the 45th Midwest Symposium Conference held in Tulsa, Oklahoma.