Cong Shen

Contact

Department of Electrical and Computer Engineering
University of Virginia
Charlottesville, VA 22904
Phone: (434) 924-8940
E-mail: cong@virginia.edu
Web: http://www.ece.virginia.edu/∼cs7dt

Education

University of California Los Angeles (UCLA), Los Angeles, U.S.A. Sept. 2004 – Dec. 2009
Ph.D., Electrical and Computer Engineering
Advisor: Dr. Michael P. Fitz

Tsinghua University, Beijing, China Sept. 2002 – June 2004
M. S., Electronic Engineering

Tsinghua University, Beijing, China Sept. 1998 – June 2002
B. E., Electronic Engineering

Work Experience

Academia:

University of Virginia, Charlottesville, VA, U.S.A. Aug. 2019 – now
Assistant Professor, Electrical and Computer Engineering

University of Science and Technology of China, Hefei, China July. 2015 – Apr. 2019
Professor, School of Information Science and Technology

Industry:

Xsense.ai, San Diego, CA, U.S.A. Jan. 2019 – July 2019
Principle Engineer, Autonomous Driving
Consultant, Autonomous Driving

Silvus Technologies Inc., San Diego, CA, U.S.A. Mar. 2017 – July 2017
Consultant, Wireless Communications

SpiderCloud Wireless Inc., San Jose, CA, U.S.A. Nov. 2014 – July 2015
Senior Staff Engineer, Corporate Research

Qualcomm Technologies, San Diego, CA, U.S.A. Oct. 2009 – Nov. 2014
Staff Engineer, Corporate Research and Development
Senior Engineer, Corporate Research and Development

Research Grants

Total funding (personal share): **$1,827,112**.

- **PI**, *National Science Foundation (NSF) CAREER Program*, "CAREER: Towards a Communication Foundation for Distributed and Decentralized Machine Learning," Total Funding: $500,000, Personal Share: $500,000 (100%), Sept. 2022 to Aug. 2027
- **PI**, *National Science Foundation (NSF) SWIFT Program*, "SWIFT: SMALL: Learning-Efficient Spectrum Access for No-Sensing Devices in Shared Spectrum," Total Funding: $269,550, Personal Share: $269,550 (100%, including $50,000 as NSF SII-GRS supplementary), Sept. 2020 to Aug. 2023

- **PI**, *National Science Foundation (NSF) ECCS Core Program*, "Towards a Resource Rationing Framework for Wireless Federated Learning," Total Funding: $200,000, Personal Share: $200,000 (100%), Sept. 2020 to Aug. 2023
- **PI**, *National Science Foundation (NSF) and Intel MLWiNS Program*, "MLWiNS: Dino-RL: A Domain Knowledge Enriched Reinforcement Learning Framework for Wireless Network Optimization," Total Funding: $365,092, Personal Share: $365,092 (100%, including both NSF and Intel, $26,449 as NSF POWDER supplementary, and $61,000 as NSF SII-GRS supplementary), June 2020 to May 2023
- **Co-PI**, *Commonwealth Cyber Initiative (CCI) CVN Innovation and Commercialization Grant*, "Towards Real-Time Federated Learning over Wireless Communications," Sole PI at UVA, Total Funding: $30,000, Personal Share: $30,000 (100%), Sept. 2022 to Aug. 2023
- **PI**, *Commonwealth Cyber Initiative (CCI) Cybersecurity Research Collaboration Grants*, "Open-source, Multi-band, Multi-dimensional Spectrum Access system with Interfaces to Wireless Testbeds and Network Simulation Software," Total Funding: $89,905, Personal Share: $89,905 (100%), Jan. 2021 to Dec. 2021
- **Co-PI**, *Commonwealth Cyber Initiative (CCI) Cybersecurity Research Collaboration Grants*, "Secure and Privacy 5G Network for Connected Vehicles," Sole PI at UVA, Overall Project PI: Dr. Sachin S. Shetty (Old Dominion University), Total Funding: $35,000, Personal Share: $35,000 (100%), Jan. 2021 to Dec. 2021
- **Co-PI**, *Commonwealth Cyber Initiative (CCI) Cybersecurity Research Collaboration Grants*, "SmallSat Cybersecurity and Resiliency," UVA PI: Dr. Christopher P. Goyne, Total Funding: $15,000, Personal Share: $7,445 (49.6%), Jan. 2021 to Dec. 2021
- **Co-PI**, *Commonwealth Cyber Initiative (CCI) Cybersecurity Research Continuation*, "Smart Cities," Total Funding: $300,000, Personal Share: $37,500 (12.5%), July 2022 to June 2023
- **PI**, *Kneron Inc.*, "Low-resolution Machine Learning Model Representation in Distributed Learning," Total Funding: $68,000, Personal Share: $68,000 (100%), Sept. 2022 to Aug. 2023
- **PI**, *Bloomberg L.P.*, unrestricted gift, Total Funding: $15,000, Personal Share: $15,000 (100%), Nov. 2021
- **PI**, *Kneron Inc.*, "Efficient Deep Learning Architecture in Mobile Edge Computing," Total Funding: $59,793, Personal Share: $59,793 (100%), April 2020 to Aug. 2021
- **PI**, subcontract from *VT-ARC*, "Towards low-latency, energy-efficient and resilient 5G network for smart warehouse," Total Funding: $49,827, Personal Share: $49,827 (100%), Jan. 2021 to Dec. 2023
- **Senior Personnel**, *National Science Foundation (NSF) Spectrum Innovation Initiative (SII) Program*, "SII Planning: WHISPERS: Wireless Hardware Innovations and Signal Processing for Enhanced Radio-astronomy and Scientific Spectrum Sharing," UVA PI: Dr. Bobby Weikle, Total Funding: $299,720, Personal Share: unknown, Aug. 2020 to Mar. 2022
- **Senior Personnel**, *National Science Foundation (NSF)*, "SII-Center: SpectrumX – The National Center for Spectrum Innovation," Total Funding (UVA): $1,278,050, Personal Share: $100,000 for Year 2022, Oct. 2021 to Sept. 2026

Awards and Honors

- *CAREER Award*, National Science Foundation (NSF), 2022
- *Faculty Research Award*, UVA ECE Department, 2022

- *Best Paper Award*, IEEE International Conference on Communications (ICC), 2021
- *Air Force Research Lab (AFRL) Summer Faculty Fellowship*, 2020, 2021
- *Exemplary Editor*, IEEE Wireless Communications Letters, 2019
- *Excellent Paper Award*, The Ninth International Conference on Ubiquitous and Future Networks (ICUFN 2017)
- *Qualstar*, Qualcomm Research, 2010, 2011, 2013 and 2014

Professional Activities

SpectrumX – The National Center for Spectrum Innovation by NSF

- Part of the UVA WHISPERS team (senior personnel) that won the SII planning grant
- Member of *SpectrumX*, a multi-university effort for NSF National Center for Wireless Spectrum Research (SII-Center)

Editorial Board:

- IEEE Transactions on Communications (TCOM, Associate Editor) June 2022 – now
- IEEE Transactions on Machine Learning in Communications and Networking (TMLCN, Associate Editor) Sept. 2022 – now
- IEEE Transactions on Green Communications and Networking (TGCN, Editor) Oct. 2021 – now
- IEEE Wireless Communications Letters (WCL, Editor) May 2018 – now
- Frontiers in Communications and Networks (Associate Editor) May 2020 – now
- IEEE Transactions on Wireless Communications (TWC, Editor) Nov. 2016 – Dec. 2021
- IEEE Transactions on Green Communications and Networking (TGCN), Lead Guest Editor for Special Issue "Energy Efficient Distributed AI over Wireless Networks", 2021 – 2022
- IEEE COMSOC MMTC Communications–Review (Editor) Dec. 2016 – now
- Journal of Communications and Information Networks (JCIN, Associate Editor) Jan. 2017 – Dec. 2018

IEEE TC Activities:

- Chair: Special Interest Group on Signal Processing Techniques for Big Data and Wireless Edge Intelligence, IEEE ComSoc SPCC Technical Committee

Conference Chair:

- *Program Co-Chair:* 8th SIGKDD International Workshop on Mining and Learning from Time Series – Deep Forecasting: Models, Interpretability, and Applications 2022
- *TPC Co-Chair:* IEEE Globecom 2021: Wireless Communications Symposium
- *TPC Chair:* The 2nd Workshop on Edge Computing and Communications (EdgeComm), in conjunction with the Sixth ACM/IEEE Symposium on Edge Computing
- *Invited Session Co-Chair (Lead):* Asilomar 2022: Machine Learning for Wireless Communications and Networking
- *Invited Session Co-Chair (Lead):* Asilomar 2020: Machine Learning for Advanced Wireless Communications
- *Poster/Demo Co-Chair:* 2019 IEEE International Conference on Multimedia and Expo (ICME 2019)
- *Symposium Co-Chair (Lead):* The 11th International Conference on Wireless Commu-

nications and Signal Processing (WCSP 2019): Symposium on Intelligent Informatics and Big Data
- *Symposium Co-Chair:* IEEE Vehicular Technology Conference (VTC) Spring 2017: Track 8 - Multiple Antenna Systems and Services
- *TPC Co-Chair:* The 4th IEEE ICCC International Workshop on Wireless Communications for Internet of Things Networking (WIN2016)
- *Symposium Co-Chair:* The 6th International Conference on Wireless Communications and Signal Processing (WCSP 2014): Symposium on Emerging Areas in Wireless Communications

Senior Program Committee and Area Chair for AI and ML Conferences:

- *International Joint Conference on Artificial Intelligence (IJCAI), Senior Program Committee:* 2021, 2023
- *International Conference on Artificial Intelligence and Statistics (AISTATS), Area Chair:* 2023

Program Committee & Reviewer for AI and ML Conferences:

- *International Conference on Machine Learning (ICML):* 2022
- *International Conference on Learning Representations (ICLR):* 2022, 2023
- *Conference on Neural Information Processing Systems (NeurIPS):* 2021, 2022
- *International Joint Conference on Artificial Intelligence (IJCAI):* 2020, 2021
- *AAAI Conference on Artificial Intelligence (AAAI):* 2019, 2020, 2021

Technical Program Committee (TPC) for Communications and Networking Conferences:

- *ACM Sigmetrics:* 2023
- *ACM MobiCom:* 2013
- *IEEE MASS:* 2022
- *IEEE WiOpt:* 2021, 2022
- *IEEE ICC:* 2010, 2012, 2015, 2018, 2019, 2020, 2021, 2022, 2023
- *IEEE GLOBECOM:* 2010, 2011, 2017, 2018, 2019, 2020, 2021, 2022
- *IEEE WCNC:* 2013, 2014, 2015, 2016, 2019, 2020, 2021, 2022, 2023
- *IEEE ICME:* 2019
- *IEEE GlobalSIP:* 2015
- *IEEE ICNC:* 2017, 2018, 2019, 2020
- *IEEE VTC:* 2022-Spring
- *MILCOM:* 2022

Membership:

- *Senior Member:* IEEE, IEEE ComSoc, IT, and SP societies
- *Member:* Sigma Xi
- *Member:* IEEE Information Theory Society Student Committee, 2005–2008

Misc:

- *NSF Reviewer:* 2020, 2021, 2022, 2023
- *Natural Sciences and Engineering Research Council of Canada (NSERC) Reviewer:*

2022–2023

Tutorials

[T1] **Cong Shen**, Cem Tekin, and Mihaela van der Schaar, "Online Learning for Wireless Communications: Theory, Algorithms, and Applications," tutorial given at the 2021 IEEE International Conference on Communications (ICC), July 2021.

[T2] **Cong Shen**, "Case Studies of Deep Learning for Channel Decoding and Power Control," IEEE Signal Processing Society Webinar Series, September 14, 2021.

Publications

h-index: 26 (Google Scholar, as of Oct. 18, 2022)
Citation: 2218 (Google Scholar, as of Oct. 18, 2022)

Book Chapter

[B1] **C. Shen**, "Opportunistic Spatial Sharing for LTE and WiFi Co-existence in the Unlicensed Spectrum," Chapter 3 in *Cognitive Radio Networks: Performance, Applications and Technology*, ISBN: 9781536130683, Nova Science Publishers, 2018.

[B2] S. J. Shellhammer, **C. Shen**, A. K. Sadek, and W. Zhang, "TV White Space Regulations," Chapter 1 in *TV White Space Spectrum Technologies: Regulations, Standards and Applications*, CRC Press, 2011.

[B3] S. J. Shellhammer, A. K. Sadek, **C. Shen**, and W. Zhang, "White Space Availability in the United States," Chapter 4 in *TV White Space Spectrum Technologies: Regulations, Standards and Applications*, CRC Press, 2011.

[B4] M. P. Fitz, **C. Shen**, and M. Samuel, "Physical Layer Wireless Communications," Chapter 2 in *Wireless Networks: From the Physical Layer to Communication, Computing, Sensing and Control*, edited by Giorgio Franceschetti and Sabatino Stornelli, Elsevier Publisher, 2006.

Journal

Note: Underlined co-authors are my supervised students.

[J1] K. Yang, S. Chen, and **C. Shen**, "On the Convergence of Hybrid Server-Clients Collaborative Training," *IEEE J. Select. Areas Commun.*, accepted for publication. (Impact Factor: 9.144)

[J2] W. Chen, R. Zhou, C. Tian, and **C. Shen**, "On Top-k Selection from m-wise Partial Rankings via Borda Counting," *IEEE Trans. Signal Processing*, vol. 70, pp. 2031–2045, Apr. 2022. (Impact Factor: 4.931)

[J3] Y. Li, Y. Guo, M. Alazab, S. Chen, **C. Shen**, and K. Yu, "Joint Optimal Quantization and Aggregation of Federated Learning Scheme in VANETs," *IEEE Transactions on Intelligent Transportation Systems*, vol. 23, no. 10, pp. 19852 – 19863, Oct. 2022. (Impact Factor: 6.492)

[J4] X. Wei and **C. Shen**, "Federated Learning over Noisy Channels: Convergence Analysis and Design Examples," *IEEE Transactions on Cognitive Communications and Networking*, vol. 8, no. 2, pp. 1253–1268, June 2022. (Impact Factor: 4.341)

[J5] X. Wei, Y. Jiang, X. Wang and **C. Shen**, "Tx-Rx Reciprocity Calibration for Hybrid Massive MIMO Systems," *IEEE Wireless Commun. Letters*, vol. 11, no. 2, pp. 431–435, Feb. 2022. (Impact Factor: 4.348)

[J6] **C. Shen**, Z. Qian, A. Huyuk, and M. van der Schaar, "MARS: Assisting Human with Information Processing Tasks Using Machine Learning," *ACM Transactions on Computing for Healthcare*, vol. 3, no. 2, pp 1-19, Feb. 2022. (Impact Factor: N/A)

[J7] S. Chen*, **C. Shen***, L. Zhang, and Y. Tang, "Dynamic Aggregation for Heterogeneous Quantization in Federated Learning," *IEEE Trans. Wireless Commun.*, Volume: 20, Issue: 10, Page(s):. 6804–6819, Oct. 2021. (*: equal contribution; Impact Factor: 7.016)

[J8] C. Shi and **C. Shen**, "Multi-player Multi-armed Bandits with Collision-Dependent Reward Distributions," *IEEE Trans. Signal Processing*, Volume: 69, Page(s): 4385–4402, July 2021. (Impact Factor: 4.931)

[J9] C. Shi and **C. Shen**, "On No-Sensing Adversarial Multi-player Multi-armed Bandits with Collision Communications," *IEEE Journal on Selected Areas in Information Theory*, Special Issue on Sequential, Active, and Reinforcement Learning, Volume: 2, Issue: 2, Page(s): 515–533, June 2021. (Impact Factor: N/A)

[J10] **C. Shen**, J. Xu, S. Zheng, and X. Chen, "Resource Rationing for Wireless Federated Learning: Concept, Benefits, and Challenges," *IEEE Commun. Mag.*, vol. 59, no. 5, pp. 82-87, May 2021. (Impact Factor: 9.619)

[J11] S. Zheng, **C. Shen**, and X. Chen, "Design and Analysis of Uplink and Downlink Communications for Federated Learning,", *IEEE J. Select. Areas Commun.*, Series on Machine Learning for Communications and Networks, Volume: 39, Issue: 7, Page(s): 2150–2167, July 2021. (Impact Factor: 9.144)

[J12] L. Chen, **C. Shen**, P. Zhou, and J. Xu, "Collaborative Service Placement for Edge Computing in Dense Small Cell Networks," *IEEE Trans. Mobile Comput.*, Volume: 20, Issue: 2, Page(s): 377-390, Feb. 2021. (Impact Factor: 5.577)

[J13] S. Chen, L. Zhang, Y. Tang, **C. Shen**, R. Kumar, K. Yu, U. Tariq, and A. K. Bashir, "Indoor temperature monitoring using wireless sensor networks: A SMAC application in smart cities," *Elsevier Sustainable Cities and Society*, Volume: 61, Page(s): 102333, Oct. 2020. (Impact Factor: 7.587)

[J14] W. R. Zame, I. Bica, **C. Shen**, A. Curth, H.-S. Lee, S. Bailey, J. Weatherall, D. Wright, F. Bretz, and M. van der Schaar, "Machine learning for clinical trials in the era of COVID-19," *Statistics in Biopharmaceutical Research*, Special Issue on Covid-19, Aug. 2020. (Impact Factor: 1.452)

[J15] S. Liu, S. Chen, **C. Shen**, M. Ismail, and R. Kumar, "Improved Low-Resolution Quantized SIMO Estimation via Deep Learning,", *IEEE Wireless Commun. Letters*, Volume: 9, Issue: 8, Page(s): 1331-1335, Aug. 2020. (Impact Factor: 4.348)

[J16] C. Gan, R. Zhou, J. Yang, and **C. Shen**, "Cost-aware Cascading Bandits," *IEEE Trans. Signal Process.*, Volume: 68, Page(s): 3692-3706, June 2020. (Impact Factor: 4.931)

[J17] X. Xu, M. Tao, and **C. Shen**, "Collaborative Multi-Agent Multi-Armed Bandit Learning for Small-Cell Caching," *IEEE Trans. Wireless Commun.*, Volume: 19, Issue: 4, Page(s): 2570-2585, April 2020. (Impact Factor: 7.016)

[J18] F. Liang, **C. Shen**, W. Yu, and F. Wu, "Towards Optimal Power Control via Ensembling Deep Neural Networks," *IEEE Trans. Commun.*, Volume: 68, Issue: 3, Page(s): 1760-1776, Mar. 2020. (Impact Factor: 5.083)

[J19] S. Chen, L. Zhang, **C. Shen**, K. Yu, S. H. Myint and Z. Wen, "On Scheduling Policies with Heavy-Tailed Dynamics in Wireless Queueing Systems," *IEEE Access*, Volume: 8, Issue: 1, Page(s): 32137-32149, Feb. 2020. (Impact Factor: 3.367)

[J20] W. Zhang, Y. Wang, **C. Shen**, and N. Liang, "A Regression Approach to Certain Information Transmission Problems," *IEEE J. Select. Areas Commun.*, Volume: 37, Issue: 11, pp. 2517-2531, Nov. 2019. (Impact Factor: 9.144)

[J21] **C. Shen**, "Universal Best Arm Identification," *IEEE Trans. Signal Processing*, Volume: 67, Issue: 17, Page(s): 4464-4478, Sept. 2019. (Impact Factor: 4.931)

[J22] C. Gan, R. Zhou, J. Yang, and **C. Shen**, "Cost-Aware Learning and Optimization for Opportunistic Spectrum Access," *IEEE Trans. Cogn. Commun. Netw.*, Volume: 5, Issue: 1, Page(s): 15-27, Mar. 2019. (Impact Factor: 4.341)

[J23] Y. Zhou, **C. Shen**, and M. van der Schaar, "A Non-Stationary Online Learning Approach to Mobility Management," *IEEE Trans. Wireless Commun.*, Volume: 18, Issue: 2, Page(s): 1434-1446, Feb. 2019. (Impact Factor: 7.016)

[J24] Z. Wang, R. Zhou, and **C. Shen**, "Regional Multi-Armed Bandits with Partial Informativeness," *IEEE Trans. Signal Processing*, Volume: 66, Issue: 21, Page(s): 5705-5717, Nov. 2018. (Impact Factor: 4.931)

[J25] S. Shao, T. Liu, C. Tian, and **C. Shen**, "New Results on Multilevel Diversity Coding with Secure Regeneration," *SCIENCE CHINA Information Sciences (SCIS)*, Special Issue on Distributed Storage Coding, 2018, 61(10): 100307. (Impact Factor: 4.380)

[J26] S. Shao, T. Liu, C. Tian, and **C. Shen**, "Multilevel Diversity Coding with Secure Regeneration: Separate Coding Achieves the MBR Point," *Entropy*, Special Issue on Multiuser Information Theory II, 2018, 20(10): 751. (Impact Factor: 2.524)

[J27] J. Xu, L. Chen, K. Liu, and **C. Shen**, "Designing Security-Aware Incentives for Computation Offloading via Device-to-Device Communication," *IEEE Trans. Wireless Commun.*, Volume: 17, Issue: 9, Page(s): 6053-6066, Sept. 2018. (Impact Factor: 7.016)

[J28] F. Liang, **C. Shen**, and F. Wu, "An Iterative BP-CNN Architecture for Channel Decoding," *IEEE J. Sel. Topics Signal Process.*, Volume: 12, Issue:1, Page(s): 144-159, Feb. 2018. (Impact Factor: 6.856)

[J29] **C. Shen**, R. Zhou, C. Tekin, and M. van der Schaar, "Generalized Global Bandits and Its Application in Cellular Coverage Optimization," *IEEE J. Sel. Topics Signal Process.*, Volume: 12, Issue:1, Page(s): 218-232, Feb. 2018. (Impact Factor: 6.856)

[J30] **C. Shen**, "Downlink Multi-User MIMO Precoding Design via Signal-over-Leakage Capacity," *IEEE Access*, Volume: 6, Issue:1, Page(s): 2812-2824, Jan. 2018. (Impact Factor: 3.367)

[J31] S. Shao, T. Liu, C. Tian, and **C. Shen**, "On the Tradeoff Region of Secure Exact-Repair Regenerating Codes," *IEEE Trans. Inf. Theory*, Volume: 63, Issue:11, Page(s): 7253-7266, Nov. 2017. (Impact Factor: 2.501)

[J32] X. Luo, P. Cai, X. Zhang, D. Hu, and **C. Shen**, "A Scalable Framework for CSI Feedback in FDD Massive MIMO via DL Path Aligning," *IEEE Trans. Signal Process.*, Volume: 65, Issue:18, Page(s): 4702-4716, Sept. 2017. (Impact Factor: 4.931)

[J33] Z. Wang and **C. Shen**, "Small Cell Transmit Power Assignment Based on Correlated Bandit Learning," *IEEE J. Select. Areas Commun.*, Volume: 35, Issue: 5, Page(s): 1030-1045, May 2017. (Impact Factor: 9.144)

[J34] **C. Shen**, C. Tekin, and M. van der Schaar, "A Non-stochastic Learning Approach to Energy Efficient Mobility Management," *IEEE J. Select. Areas Commun.*, Volume: 34, Issue: 12, Page(s): 3854-3868, December 2016. (Impact Factor: 9.144)

[J35] **C. Shen**, J. Xu, and M. van der Schaar, "Silence is Gold: Strategic Interference Mitigation Using Tokens in Heterogeneous Small Cell Networks," *IEEE J. Select. Areas Commun.*, Volume: 33, Issue: 6, Page(s): 1097-1111, June 2015. (Impact Factor: 9.144)

[J36] **C. Shen** and M. P. Fitz, "Hybrid ARQ in Multiple-Antenna Slow Fading Channels: Performance Limits and Optimal Linear Dispersion Code Design," *IEEE Trans. Inf. Theory*, Volume: 57, Issue: 9, Page(s): 5863-5883, Sept. 2011. (Impact Factor: 2.501)

[J37] **C. Shen** and M. P. Fitz, "Opportunistic Spatial Orthogonalization and Its Application in Fading Cognitive Radio Networks," *IEEE J. Sel. Topics Signal Process.*, Volume: 5, Issue: 1, Page(s): 182-189, Feb. 2011. (Impact Factor: 6.856)

[J38] **C. Shen**, T. Liu, and M. P. Fitz, "On the Average Rate Performance of Hybrid-ARQ in Quasi-Static Fading Channels," *IEEE Trans. Commun.*, Volume: 57, Issue: 11, Page(s): 3339-3352, Nov. 2009. (Impact Factor: 5.083)

[J39] **C. Shen** and M. van der Schaar, "Optimal Resource Allocation for Multimedia Applications over Multiaccess Fading Channels," *IEEE Trans. Wireless Commun.*, Volume: 7, Issue: 9, Page(s): 3546-3557, Sept. 2008. (Impact Factor: 7.016)

[J40] **C. Shen** and M. P. Fitz, "MIMO-OFDM Beamforming for Improved Channel Estimation," *IEEE J. Select. Areas Commun.*, Volume: 26, Issue: 6, Page(s): 948-959, Aug. 2008. (Impact Factor: 9.144)

[J41] **C. Shen**, H. Zhuang, D. Dai, and S. Zhou, "Detection algorithm improving V-BLAST performance over error propagation," *IET Electronics Letters*, Volume: 39, Issue: 13, Page(s): 1007-1008, June 2003. (Impact Factor: 1.316)

Conference

Note: The reported Acceptance Rate is based on Google Search results, accessed on August 21, 2021.

[C1] K. Yang, D. Li, **C. Shen**, J. Yang, S. Yeh, and J. Sydir, "Multi-Agent Reinforcement Learning for Wireless User Scheduling: Performance, Scalablility, and Generalization," *the 56th Asilomar Conference on Signals, Systems and Computers*, Oct. 2022. ***(Invited Paper)***

[C2] D. Cheng, R. Huang, **C. Shen**, and J. Yang, "Cascading Bandits With Two-Level Feedback," *IEEE International Symposium on Information Theory (ISIT)*, June 2022.

[C3] Y. Mu, **C. Shen**, and Y. C. Eldar, "Optimizing Federated Averaging Over Fading Channels," *IEEE International Symposium on Information Theory (ISIT)*, June 2022.

[C4] **C. Shen**, J. Yang, and J. Xu, "On Federated Learning with Energy Harvesting Clients," *IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, May 2022. ***(Invited Paper)***

[C5] X. Wei, **C. Shen**, J. Yang, and H. V. Poor, "Random Orthogonalization for Federated Learning in Massive MIMO Systems," *IEEE International Conference on Communications (ICC)*, May 2022.

[C6] K. Yang an **C. Shen**, "On the Convergence of Hybrid Federated Learning with Server-Clients Collaborative Training," *56th Annual Conference on Information Sciences and Systems (CISS)*, March 2022. ***(Invited Paper)***

[C7] Z. Shao, J. Yang, **C. Shen** and S. Ren, "Learning for Robust Combinatorial Optimization: Algorithm and Application," IEEE Conference on Computer Communications (INFOCOM), May 2022. (acceptance rate: 19.9%)

[C8] C. Shi, H. Xu, W. Xiong, and **C. Shen**, "(Almost) Free Incentivized Exploration from Decentralized Learning Agents," *Thirty-fifth Conference on Neural Information*

Processing Systems (NeurIPS), Dec. 2021. (Acceptance Rate: 26%)

[C9] C. Shi, W. Xiong, **C. Shen**, and J. Yang, "Heterogeneous Multi-player Multi-armed Bandits: Closing the Gap and Generalization," *Thirty-fifth Conference on Neural Information Processing Systems (NeurIPS)*, Dec. 2021. (Acceptance Rate: 26%)

[C10] R. Huang, W. Wu, J. Yang, and **C. Shen**, "Federated Linear Contextual Bandits," *Thirty-fifth Conference on Neural Information Processing Systems (NeurIPS)*, Dec. 2021. (Acceptance Rate: 26%)

[C11] Y. Mu, Y. Tan, M. Veeraraghavan, and **C. Shen**, "A Machine Learning Approach for Rate Prediction in Multicast File-stream Distribution Networks," *IEEE Global Communications Conference (Globecom)*, Dec. 2021.

[C12] C. Shi and **C. Shen**, "An Attackability Perspective on No-Sensing Adversarial Multi-player Multi-armed Bandits," *IEEE International Symposium on Information Theory*, July 2021.

[C13] X. Wei and **C. Shen**, "Federated Learning over Noisy Channels," *IEEE International Conference on Communications (ICC)*, June 2021.

[C14] **C. Shen**, P. Zhao, and X. Luo, "On Energy Efficient Uplink Multi-User MIMO with Shared LNA Control," *IEEE International Conference on Communications (ICC)*, June 2021.

[C15] S. Zheng, **C. Shen**, and X. Chen, "Design and Analysis of Uplink and Downlink Communications for Federated Learning," *IEEE International Conference on Communications (ICC)*, June 2021. ***(Best Paper Award)***

[C16] H. Lee, **C. Shen**, W. Zame, J. Lee, and M. van der Schaar, "SDF-Bayes: Cautious Optimism in Safe Dose-Finding Clinical Trials with Drug Combinations and Heterogeneous Patient Groups," *the 24rd International Conference on Artificial Intelligence and Statistics (AISTATS)*, Apr. 2021. (Acceptance Rate: 29.8%)

[C17] C. Shi, **C. Shen**, and J. Yang, "Federated Multi-Armed Bandits with Personalization," *the 24rd International Conference on Artificial Intelligence and Statistics (AISTATS)*, Apr. 2021. (Acceptance Rate: 29.8%, Oral Presentation Acceptance Rate: 3%)

[C18] C. Shi and **C. Shen**, "Federated Multi-Armed Bandits," *the 35th AAAI Conference on Artificial Intelligence (AAAI)*, Feb. 2021. (Acceptance Rate: 21.4%)

[C19] H.-S. Lee, Y. Zhang, W. Zame, **C. Shen**, J.-W. Lee, and M. van der Schaar, "Robust Recursive Partitioning for Heterogeneous Treatment Effects with Uncertainty Quantification," *the Thirty-fourth Conference on Neural Information Processing Systems (NeurIPS)*, Dec. 2020. (Acceptance Rate: 20.1%)

[C20] **C. Shen** and S. Chen, "Federated Learning with Heterogeneous Quantization," *ACM/IEEE Symposium on Edge Computing – Workshop on Edge Computing and Communications (EdgeComm)*, Nov. 2020.

[C21] **C. Shen**, D. Li, and J. Yang, "MIMO Receive Antenna Selection via Deep Learning and Greedy Adaptation," *the 54th Asilomar Conference on Signals, Systems and Computers*, pp. 403-407, Nov. 2020. ***(Invited Paper)***

[C22] C. Gan, J. Yang, and **C. Shen**, "Thresholded Wirtinger Flow for Fast Millimeter Wave Beam Alignment," *the 54th Asilomar Conference on Signals, Systems and Computers*, pp. 32-36, Nov. 2020. ***(Invited Paper)***

[C23] **C. Shen**, Z. Wang, S. Villa, and M. van der Schaar, "Learning for Dose Allocation in Adaptive Clinical Trials with Safety Constraints," *International Conference on Machine Learning (ICML)*, July 2020. (Acceptance Rate: 21.8%)

[C24] W. Chen, R. Zhou, C. Tian, and **C. Shen**, "On Top-k Selection from m-wise Partial Rankings via Borda Counting," *IEEE International Symposium on Information Theory*, June 2020.

[C25] K. Yang, **C. Shen**, and T. Liu, "Deep Reinforcement Learning based Wireless Network Optimization: A Comparative Study," *IEEE INFOCOM 2020 Workshop on Data Driven Intelligence for Networks*, July 2020.

[C26] H. Lee, **C. Shen**, J. Jordon, and M. van der Schaar, "Contextual Constrained Learning for Dose-Finding Clinical Trials," *The 23rd International Conference on Artificial Intelligence and Statistics (AISTATS)*, Palermo, Sicily, Italy, June 2020. (Acceptance Rate: unknown)

[C27] C. Shi, W. Xiong, **C. Shen**, and J. Yang,"Decentralized Multi-player Multi-armed Bandits with No Collision Information," *The 23rd International Conference on Artificial Intelligence and Statistics (AISTATS)*, Palermo, Sicily, Italy, June 2020. (Acceptance Rate: unknown)

[C28] W. Wu, J. Yang, and **C. Shen**, "Stochastic Linear Contextual Bandits with Diverse Contexts," *The 23rd International Conference on Artificial Intelligence and Statistics (AISTATS)*, Palermo, Sicily, Italy, June 2020. (Acceptance Rate: unknown)

[C29] C. Shi, L. Chen, **C. Shen**, and J. Xu, "Privacy-Aware Edge Computing Based on Adaptive DNN Partitioning," *IEEE Globecom 2019*, Hawaii, USA, Dec. 2019.

[C30] C. Wang, R. Zhou, J. Yang, and **C. Shen**, "A Cascading Bandit Approach to Efficient Mobility Management in Ultra-Dense Networks," IEEE International Workshop on Machine Learning for Signal Processing (MLSP), Pittsburgh, PA, USA, Oct. 2019. ***(Invited Paper)***

[C31] F. Liang, **C. Shen**, W. Yu, and F. Wu, "Power Control for Interference Management via Ensembling Deep Neural Networks," *IEEE/CIC ICCC 2019*, Changchun, China, Aug. 2019. ***(Invited Paper)***

[C32] C. Gan, J. Yang, R. Zhou, and **C. Shen**, "Online Learning with Diverse User Preferences," *IEEE International Symposium on Information Theory*, Paris, France, July 2019.

[C33] H. Zhang and **C. Shen**, "Best Arm Identification for Both Stochastic and Adversarial Multi-armed Bandits," *IEEE Information Theory Workshop (ITW)*, Guangzhou, China, Nov. 2018. ***(Invited Paper)***

[C34] R. Zhou, C. Gan, J. Yang, and **C. Shen**, "Cost-aware Cascading Bandits," *The 27th International Joint Conference on Artificial Intelligence (IJCAI 2018)*, Stockholm, Sweden, Jul. 2018. (Acceptance Rate: 20.5%)

[C35] Z. Wang, Z. Ying, and **C. Shen**, "Opportunistic Spectrum Access via Good Arm Identification," *IEEE GlobalSIP*, Anaheim, California, USA, Nov. 2018.

[C36] Z. Wang, R. Zhou, and **C. Shen**, "Regional Multi-Armed Bandits," *The 21st International Conference on Artificial Intelligence and Statistics (AISTATS 2018)*, Lanzarote, Spain, Apr. 2018. (Acceptance Rate: 33.2%)

[C37] S. Shao, T. Liu, C. Tian, and **C. Shen**, "New Results On Multilevel Diversity Coding with Secure Regeneration," *IEEE International Symposium on Information Theory (ISIT)*, Colorado, U.S.A., June 2018.

[C38] J. Yang, X. Wang, and **C. Shen**, "A Machine Learning Approach to User Association in Enterprise Small Cell Networks," *IEEE/CIC ICCC 2018*, Signal Processing for Communications Symposium, Aug. 2018. ***(Invited Paper)***

[C39] Z. Wang and **C. Shen**, "Small Cell Power Assignment with Unimodal Continuum-armed Bandit Learning," *IEEE ICC 2018 Workshop on 5G-UDN*, Kansas City, U.S.A., May 2018.

[C40] K. Liu, **C. Shen**, S. Chattopadhyay, and H. Dai, "Designing Interdependent Networks Against Cascading Failures with Node Protections," *IEEE ICC 2018*, Kansas City, U.S.A., May 2018.

[C41] Y. Zhou, **C. Shen**, X. Luo, and M. van der Schaar, "A Non-Stationary Online Learning Approach to Mobility Management," *IEEE ICC 2018*, Kansas City, U.S.A., May 2018.

[C42] F. Liang, **C. Shen**, and F. Wu, "Exploiting Noise Correlation for Channel Decoding with Convolutional Neural Networks," *IEEE ICC 2018*, Kansas City, U.S.A., May 2018.

[C43] H. Wu, L. Chen, **C. Shen**, and J. Xu, "Online Geographical Load Balancing for Energy-Harvesting Mobile Edge Computing," *IEEE ICC 2018*, Kansas City, U.S.A., May 2018.

[C44] F. Yang, H. Zhu, **C. Shen**, L. Dai, and X. Luo, "How to Interconnect for Massive MIMO Self-Calibration?" *IEEE ICASSP 2018*, Calgary, Canada, Apr. 2018.

[C45] J. Dai and **C. Shen**, "Adaptive Resource Allocation for LTE/WiFi Coexistence in the Unlicensed Spectrum," *IEEE ICNC 2018*, Maui, U.S.A., Mar. 2018.

[C46] J. Dai and **C. Shen**, "A Modified LBT Mechanism and Performance Enhancement for LTE-U/WiFi Co-Existence," *IEEE/CIC ICCC*, Oct. 2017.

[C47] S. Shao, T. Liu, C. Tian, and **C. Shen**, "On the Tradeoff Region of Secure Exact-Repair Regenerating Codes," *IEEE International Symposium on Information Theory (ISIT)*, Germany, June 2017.

[C48] X. Luo, P. Cai, X. Zhang, **C. Shen**, and H. Qian, "Aligning DL Paths for Scalable CSI Feedback in FDD Massive MIMO," *International Wireless Communications and Mobile Computing Conference (IWCMC)*, Valencia, Spain, June 26-30, 2017.

[C49] X. Luo, X. Zhang, P. Cai, **C. Shen**, D. Hu, and H. Qian, "DL CSI Acquisition and Feedback in FDD Massive MIMO via Path Aligning," *The 9th International Conference on Ubiquitous and Future Networks*, July 2017. ***(Excellent Paper Award)***

[C50] H. Wu, **C. Shen** and S. Chen, "On Scheduling Policies in the Presence of Heavy-Tailed Interference," *Information Theory and Applications (ITA) Workshop*, La Jolla, CA, USA, Feb. 2017. ***(Invited Paper)***

[C51] Z. Wang, **C. Shen**, X. Luo, and M. van der Schaar, "Learn to Adapt: Self-Optimizing Small Cell Transmit Power with Correlated Bandit Learning," *IEEE ICC 2017*, Paris, France, May 2017.

[C52] **C. Shen**, Z. Yu, C. W. Chen, and F. Wu, "On the Effective Capacities of Distributed and Co-located Large-Scale Antenna Systems," *IEEE ICC 2017*, Communication Theory Symposium, Paris, France, May 2017.

[C53] **C. Shen** and M. van der Schaar, "A Learning Approach to Frequent Handover Mitigations in 3GPP Mobility Protocols," *IEEE WCNC 2017*, San Francisco, CA, USA, March 2017.

[C54] **C. Shen** and S. Chen, "A Cyber-Physical Design for Indoor Temperature Monitoring Using Wireless Sensor Networks," *IEEE WCNC 2017*, San Francisco, CA, USA, March 2017.

[C55] X. Wang and **C. Shen**, "Dynamic User Association in Enterprise Small Cell Networks with Hybrid Access," *IEEE WCNC 2017*, San Francisco, CA, USA, March 2017.

[C56] J. Xu, Q. Cai, and **C. Shen**, "DARC: Timely Classification with Randomly Delayed Features," *IEEE GLOBECOM 2016*, Washington D.C., USA, Dec. 2016.

[C57] Y. Zhu and **C. Shen**, "An Outer Bound of Layered Erasure Interference Channels without CSI at Transmitters," *IEEE ISIT 2016*, Barcelona, Spain, July 2016.

[C58] **C. Shen**, S. Lou, C. Gong, and Z. Xu, "User Association with Lighting Constraints in Visible Light Communication Systems," *IEEE CISS 2016*, Princeton, USA, Mar. 2016.

[C59] Y. Jiang, **C. Shen**, and J. Dai, "A Unified Approach to the Design of IIR and FIR Notch Filters," in *IEEE ICASSP 2016*, Shanghai, China, March 2016.

[C60] N. Liang, W. Zhang, and **C. Shen**, "An Uplink Interference Analysis for Massive MIMO Systems with MRC and ZF Receivers," in *IEEE WCNC 2015*, Page(s): 310 – 315, March 2015.

[C61] **C. Shen**, J. Xu, and M. van der Schaar, "Silence is Gold: Strategic Small Cell Interference Management Using Tokens," in *IEEE Globecom 2014*, Wireless Networking Symposium, Austin, TX, Dec. 2014.

[C62] P. Zhao and **C. Shen**, "A Low-Delay Low-Complexity EKF Design for Joint Channel and CFO Estimation in Multi-User Cognitive Communications," in *IEEE GLOBECOM 2011*, Houston, TX, Dec. 2011.

[C63] R. Balamurthi, H. Joshi, C. Nguyen, A. K. Sadek, S. Shellhammer, and **C. Shen**, "A TV White Space Spectrum Sensing Prototype," in *IEEE International Dynamic Spectrum Access Networks (DySPAN) Symposium*, May 2011.

[C64] W. Zhang, A. K. Sadek, **C. Shen**, and S. J. Shellhammer, "Adaptive Spectrum Sensing," in *2010 Information Theory and Applications Workshop*, Page(s): 1–7, San Diego, CA, Jan.-Feb., 2010.

[C65] **C. Shen** and M. P. Fitz, "Opportunistic Spatial Orthogonalization and Its Application in Fading Cognitive Radio Networks," in *IEEE MILCOM 2009*, Page(s): 1–6, Boston, MA, Oct. 2009.

[C66] J. Jiang, J. Z. Yu, and **C. Shen**, "Throughput Scaling Laws for Dual-radio Random Wireless Networks," in *the 43rd Conference on Information Sciences and Systems (CISS)*, Page(s): 235–240, Baltimore, MD, Mar. 2009.

[C67] **C. Shen** and M. P. Fitz, "Dynamic Spatial Spectrum Access with Opportunistic Orthogonalization," in *the 43rd Conference on Information Sciences and Systems (CISS)*, Page(s): 600–605, Baltimore, MD, Mar. 2009.

[C68] **C. Shen** and M. P. Fitz, "Hybrid ARQ Schemes in Multiple-Antenna Slow Fading Channels: A Capacity Perspective," in *the 42nd Annual Asilomar Conference on Signals, Systems, and Computers*, Page(s): 1340–1344, Pacific Grove, CA, Oct. 2008.

[C69] **C. Shen** and M. P. Fitz, "A Utility Maximization Approach to the Design of Unequal Error Protection with Multilevel Codes," in *IEEE ISIT 2008*, Page(s): 2031–2035, Toronto, Canada, Jul. 2008.

[C70] **C. Shen**, T. Liu, and M. P. Fitz, "Aggressive Transmission with ARQ in Quasi-Static Fading Channels," in *IEEE ICC 2008*, Page(s): 1092–1097, Beijing, China, May 2008.

[C71] **C. Shen** and M. P. Fitz, "On the Design of Modern Multilevel Coded Modulation for Unequal Error Protection," in *IEEE ICC 2008*, Page(s): 1355–1359, Beijing, China, May 2008.

[C72] **C. Shen** and M. van der Schaar, "Optimal Resource Allocation in Wireless Multiaccess Video Transmissions," in *IEEE ICC 2007*, Page(s): 4581–4586, Glasgow, Scotland, June 24-28, 2007.

[C73] **C. Shen**, M. P. Fitz, and M. Siti, "Generalized Soft-Output Layered Orthogonal Lattice Detector for Golden Code," in *IEEE WCNC 2007*, Page(s): 525–529, Hong Kong, China, Mar. 2007.

[C74] **C. Shen** and M. P. Fitz, "MIMO-OFDM Beamforming for Improved Channel Estimation," in *IEEE GLOBECOM 2006*, San Francisco, CA, Nov. 2006.

[C75] H. Zheng, Y. Zhu, **C. Shen**, and X. Wang, "On the Effectiveness of Cooperative Diversity in Ad Hoc Networks: a MAC Layer Study," in *2005 IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP 2005)*, Vol. 3, Page(s): 509–512, Philadelphia, PA, March 2005.

[C76] **C. Shen**, Y. Zhu, S. Zhou, and J. Jiang, "On the Performance of V-BLAST with Zero-Forcing Successive Interference Cancellation Receiver," in *IEEE GLOBECOM 2004*, Vol. 5, Page(s): 2818–2822, Dallas, TX, Nov. 29-Dec. 3, 2004.

Patents

[P1] **Cong Shen**, Fei Liang, and Feng Wu, "Method and device for decoding a signal, and memory device," United States Patent, No: 10,924,304, Granted on Feb. 24, 2021 (University of Science and Technology of China)

[P2] Yashodhan Dandekar, Brian P. Dunn, **Cong Shen**, and Peter J. Worters, "Topology discovery and management and SON orchestration," United States Patent, No: 10,771,338, Granted on September 8, 2020. (SpiderCloud Wireless, Inc.)

[P3] Hithesh Nama, **Cong Shen**, Peter J. Worters, and Lili Zhang, "Closed-loop downlink transmit power assignments in a small cell radio access network," United States Patent, No: 10,645,657, Granted on May 5, 2020. (SpiderCloud Wireless, Inc.)

[P4] Hithesh Nama, **Cong Shen**, Peter J. Worters, and Lili Zhang, "Closed-loop downlink transmit power assignments in a small cell radio access network," United States Patent, No: 10,292,108, Granted on May 14, 2019. (SpiderCloud Wireless, Inc.)

[P5] Wenyi Zhang, **Cong Shen**, and Ning Liang, "Method for signal transmission to multiple user equipments utilizing reciprocity of wireless channel," United States Patent, No: 10,236,958, Granted on March 19, 2019. (University of Science and Technology of China)

[P6] Brian P. Dunn, Peter J. Worters, Yashodhan Dandekar, and **Cong Shen**, "Topology discovery and management and SON orchestration," United States Patent, No: 10,148,510, Granted on December 4, 2018. (SpiderCloud Wireless, Inc.)

[P7] **Cong Shen** and Christophe Chevallier,"Determining transmit power based on categorization of access terminals," United States Patent, No: 9,883,465, Granted on January 30, 2018. (Qualcomm Inc.)

[P8] Stephen J. Shellhammer, **Cong Shen**, Rahul Tandra, Santosh P. Abraham, Sameer Vermani, and Hemanth Sampath,"Methods and apparatuses for communicating in television white space (TVWS) based on TVWS enablement signal," United States Patent, No: 9,609,520, Granted on March 28, 2017. (Qualcomm Inc.)

[P9] Hithesh Nama, Lili Zhang, **Cong Shen**, and Peter J. Worters, "Closed-loop downlink transmit power assignments in a small cell radio access network," United States Patent, No: 9,516,600, Granted on December 6, 2016. (SpiderCloud Wireless, Inc.)

[P10] Sumeeth Nagaraja, Farhad Meshkati, Mehmet Yavuz, Suhas Mitra, Varun Khaitan, Vansh P. S. Makh, Chirag S. Patel, Yeliz Tokgoz, and **Cong Shen**, "Power control

for a network of access points," United States Patent, No: 9,497,714, Granted on November 15, 2016. (Qualcomm Inc.)

[P11] **Cong Shen**, Andrei D. Radulescu, Rajat Prakash, and Farhad Meshkati, "Methods and apparatus for network entity collision detection," United States Patent, No: 9,497,654, Granted on November 15, 2016. (Qualcomm Inc.)

[P12] **Cong Shen**, Farhad Meshkati, and Rajat Prakash, "Methods for radio technology selection and power calibration in multi-rat small cells," United States Patent, No: 9,462,559, Granted on October 4, 2016. (Qualcomm Inc.)

[P13] **Cong Shen**, Andrei D. Radulescu, Rajat Prakash, and Farhad Meshkati, "Methods and apparatus for network entity collision detection," United States Patent, No: 9,462,499, Granted on October 4, 2016. (Qualcomm Inc.)

[P14] Yichao Huang, Chirag S. Patel, Tamer A. Kadous, Mehmet Yavuz, Lili Zhang, Rajat Prakash, Vinay Chande, Christophe Chevallier, Sumeeth Nagaraja, Farhad Meshkati, Suhas Mitra, Vansh P. S. Makh, Yeliz Tokgoz, **Cong Shen**, and Varun Khaitan, "Methods and apparatus for power management in a wireless communication system," United States Patent, No: 9,451,480, Granted on September 20, 2016. (Qualcomm Inc.)

[P15] Nachiappan Valliappan, Christophe Chevallier, Andrei D. Radulescu, and **Cong Shen**, "Base station employing shared resources among antenna units," United States Patent, No: 9,451,466, Granted on September 20, 2016. (Qualcomm Inc.)

[P16] **Cong Shen**, Tao Chen, and Farhad Meshkati, "Selecting a communication channel based on a neighboring cell constraint," United States Patent, No: 9,369,900, Granted on June 14, 2016. (Qualcomm Inc.)

[P17] **Cong Shen**, Farhad Meshkati, and Ahmed K. Sadek, "Methods and apparatus for parameter selection and conflict resolution for multiple radio access technologies," United States Patent, No: 9,319,901, Granted on April 19, 2016. (Qualcomm Inc.)

[P18] Sumeeth Nagaraja, Farhad Meshkati, Mehmet Yavuz, Suhas Mitra, Varun Khaitan, Vansh P. S. Makh, Chirag S. Patel, Yeliz Tokgoz, and **Cong Shen**, "Access point transmit power control," United States Patent, No: 9,301,265, Granted on March 29, 2016. (Qualcomm Inc.)

[P19] Stephen J. Shellhammer, **Cong Shen**, Rahul Tandra, Santosh P. Abraham, Sameer Vermani, and Hemanth Sampath,"Methods and apparatuses for low-rate television white space (TVWS) enablement," United States Patent, No: 9,107,078, Granted on August 11, 2015. (Qualcomm Inc.)

Invited Presentations

On federated learning over wireless fading channels

- *EE Department Colloquium*, The Pennsylvania State University, U.S.A. Mar. 2022

Federated multi-armed bandits

- Intel Labs, U.S.A. Aug. 2021

Flying under the radar: federated learning over noisy channels

- Texas A&M University, U.S.A. Sept. 2021
- University of Texas Austin, U.S.A. Nov. 2020
- Tsinghua University, China May 2021

Cost-aware cascading bandits

- Oxford University, U.K. Nov. 2017
- ShanghaiTech University, China Nov. 2017
- University of California, Davis, U.S.A. Feb. 2018
- City University of Hong Kong, Hong Kong Jun. 2018
- The Alan-Turing Institute, London, U.K. Oct. 2018
- National Institute of Informatics, Tokyo, Japan Nov. 2018

Universal best arm identification

- Qualcomm Inc., San Diego, U.S.A. Feb. 2018
- The Pennsylvania State University, U.S.A. Sept. 2018

Regional multi-armed bandits

- Qualcomm Inc., San Diego, U.S.A. Feb. 2018
- Texas A&M University, U.S.A. Mar. 2018

An iterative BP-CNN architecture for channel decoding

- University of Texas, Austin, U.S.A. Mar. 2018
- University at Buffalo, U.S.A. May 2018
- City University of Hong Kong, Hong Kong Jun. 2018

Supervised Students

Graduate Students at UVA:

- Chengshuai Shi (August 2019 – now): PhD student
  - Passed EE qualifying exam in Fall 2020
- Kun Yang (August 2020 – now): PhD student
  - Passed EE qualifying exam in Spring 2021
- Yujia Mu (August 2020 – now): PhD student
  - Took over as her PhD advisor when Prof. Malathi Veeraraghavan passed away
  - Passed CpE qualifying exam in Summer 2020
- Xizixiang Wei (August 2020 – now): PhD student
  - Did not attend UVA until Fall 2021 due to COVID-related travel constraint
  - Passed EE qualifying exam in Fall 2021
- Li Fan (August 2020 – now): PhD student
  - Did not attend UVA until Fall 2021 due to COVID-related travel constraint
  - Passed EE qualifying exam in Fall 2021
- Wei Shen (August 2022 – now): PhD student

Visiting Students at UVA:

- Wei Xiong (Aug. 2019 – Oct. 2019): undergraduate student, visiting from Department of Statistics at USTC

Graduate Students at USTC:

- Fei Liang (Ph.D., co-advised with Prof. F. Wu, graduated in June 2018)
- Chao Wang (Ph.D., transferred to Prof. J. Yang at USTC when I joined UVA in 2019)
- Yiming Zhou (Ph.D., transferred to Prof. C. Gong at USTC when I joined UVA in

2019)
- Jianxin Dai (M.S., graduated in June 2018)
- Hang Wu (M.S., graduated June 2019)
- Zhiyang Wang (M.S., graduated June 2019)
- Kun Liu (M.S., graduated June 2019)

Undergraduate Students at USTC:

- Ruida Zhou (undergraduate thesis advisor, 2018)
- An Yan (undergraduate thesis advisor, 2018)
- Yin Cao (undergraduate thesis advisor, 2018)
- Yuntian Deng (undergraduate thesis advisor, 2017)
- Zehao Yu (undergraduate thesis advisor, 2017)
- Minhui Huang (undergraduate thesis advisor, 2017)
- Xiaoxiao Wang (undergraduate thesis advisor, 2017)

Students Honors

- Chengshuai Shi received the Bloomberg Data Science Ph.D. Fellowship for 2021-2022
- Xizixiang Wei received the Charles L. Brown Department of Electrical and Computer Engineerings Ann Lee Brown Rookie of the Year (graduate) for 2022
- Chengshuai Shi received the McVey Fellowship from the Charles L. Brown Department of Electrical and Computer Engineering for 2022
- Yujia Mu received the Malathi Veeraraghavan Legacy Fellowship from the Charles L. Brown Department of Electrical and Computer Engineering for 2022
- Chengshuai Shi received the 2022-2023 Endowed Graduate Fellowship from the Engineering School at UVa

Teaching

- APMA 3100, "Probability,", UVA Applied Mathematics, Fall 2021, Fall 2022
- ECE 4501/6501, "Matrix Analysis in Engineering and Science," UVA ECE, Fall 2020
- ECE 4784/6784, "Wireless Communications," UVA ECE, Spring 2020, Spring 2021, Spring 2022
- INY531701, "MIMO Wireless Communications," graduate-level course, USTC EEIS, Fall 2016, Fall 2017, Fall 2018
- 00612502, "Information Theory," undergraduate-level course, USTC EEIS, Fall 2017, Fall 2018

UVA Internal Services

- Member of the ECE Seminar Committee, 2020 to 2021, 2021 to 2022.
- Member of the EE Qualifying Exam Committee, 2019 to 2020, 2020 to 2021, 2021 to 2022 (chair)
- Member of the EE Undergraduate Curriculum Committee, 2019 to 2020, 2020 to 2021, 2021 to 2022
- Member of the ECE Faculty Search Committee, 2022 to 2023

Diversity, Equity and Inclusion

- UVA ECE Ally Program, Faculty Mentor, 2020 to 2021, 2021 to 2022
- UVA Mentor Institute, Faculty Mentor, 2020 to 2021