

Curriculum Vitae

Huaiyu DAI

Dept. of Electrical and Computer Engineering, NC State University Raleigh, NC 27695-7911
Phone: (919) 513-0299(O) **Email Address:** Huaiyu_Dai@ncsu.edu
Fax: (919) 515-5523 **Web:** <https://people.engr.ncsu.edu/hdai/>

EDUCATION

Ph.D. (November 2002), **M.A.** (May 2000) in **Electrical Engineering, Princeton University**, Princeton, NJ
Major: Information Sciences and Systems Minors: Mathematics; Computer Engineering
Ph.D. Dissertation: *Wireless Cellular Communications with Antenna Arrays*
Advisor: Prof. H. Vincent Poor
M.S. (May 1998) and **B.E.** (July 1996) in **Electrical Engineering, Tsinghua University**, Beijing, China

PROFESSIONAL EXPERIENCE

08 / 22 – current *Rotating Program Director*, Division of Electrical, Communications and Cyber Systems, **National Science Foundation**, Alexandria, VA
08 / 15 – current *Professor*, Department of Electrical and Computer Engineering, **NC State University**, Raleigh, NC
08 / 09 – 07 / 15 *Associate Professor*, Department of Electrical and Computer Engineering, **NC State University**, Raleigh, NC
01 / 03 – 07 / 09 *Assistant Professor*, Department of Electrical and Computer Engineering, **NC State University**, Raleigh, NC
06 / 99 – 12 / 02 *Research Associate/Assistant*, Department of Electrical Engineering, **Princeton University**, Princeton, NJ
07 / 01 - 09 / 01 *Intern*, **AT&T Labs-Research**, Middletown, NJ
07 / 00 – 09 / 00 *Intern*, **Bell Labs, Lucent Technologies**, Holmdel, NJ

PUBLICATIONS

Journal Papers:

- J1. J. Zhang, X. He, and H. Dai, “Speeding Up Distributed Learning via Sparse and Flexible Coded Computing,” *IEEE Trans. Information Theory*, to appear.
- J2. Y. He, T. Li, X. He, R. Jin, and H. Dai, “Partial Replication for Delay-Optimal Distributed Edge Computing,” *IEEE Trans. Communications*, to appear.
- J3. R. Jin, Y. Liu, Y. Huang, X. He, T. Wu, and H. Dai, “Sign-Based Gradient Descent with Heterogeneous Data: Convergence and Byzantine Resilience,” *IEEE Transactions on Neural Networks and Learning Systems*, to appear.
- J4. J. Liu, J. Jia, H. Zhang, Y. Yun, L. Wang, Y. Zhou, H. Dai, and D. Dou, “Efficient Federated Learning Using Dynamic Update and Adaptive Pruning with Momentum on Shared Server Data,” *ACM Transactions on Intelligent Systems and Technology*, vol. 15, no. 6, pp. 1 – 28, Nov. 2024.

- J5. R. Jin, X. He, C. Zhong, Z. Zhang, T. Quek, and H. Dai, "Magnitude Matters: Fixing SIGNSGD Through Magnitude-Aware Sparsification and Error Feedback in the Presence of Data Heterogeneity," *IEEE Trans. Signal Processing*, vol. 72, no. 11, pp. 5140-5155, Nov. 2024.
- J6. M. F. Pervej, R. Jin, and H. Dai, "Hierarchical Federated Learning in Wireless Networks: Pruning Tackles Bandwidth Scarcity and System Heterogeneity," *IEEE Trans. Wireless Communications*, vol. 23, no. 9, pp. 11417-11432, Sept. 2024.
- J7. Z. Liu, L. Huang, Z. Gao, M. Luo, S. Hosseinalipour, and H. Dai, "GA-DRL: Graph Neural Network-Augmented Deep Reinforcement Learning for DAG Task Scheduling over Dynamic Vehicular Clouds," *IEEE Transactions on Network and Service Management*, vol. 21, no. 4, pp. 4226-4242, Aug. 2024.
- J8. T. Li, X. He, R. Jin, and H. Dai, "Task-Decoding Assisted Cooperative Transmission for Coded Edge Computing," *IEEE Trans. Wireless Communications*, vol. 23, no. 8, pp. 9044-9058, Aug. 2024.
- J9. J. Liu, F. Yang, X. Wang, L. Qu, M. Jin, and H. Dai, "Joint Optimization of Charging Station Placement and UAV Trajectory for Fresh Data Collection," *IEEE Internet of Things Journal*, vol. 11, no. 14, pp. 25057-25073, Jul. 2024.
- J10. K. Yue, R. Jin, C. Wong, and H. Dai, "Federated Learning via Plurality Vote," *IEEE Transactions on Neural Networks and Learning Systems*, vol. 35, no. 6, pp. 8215-8228, Jun. 2024.
- J11. D. Geng, T. Li, X. He, R. Jin, and H. Dai, "Dynamic Power Control for Delay-Optimal Coded Edge Computing," *IEEE Trans. Wireless Communications*, vol. 23, no. 4, pp. 3283-3297, Apr. 2024.
- J12. Z. Liu, Y. Zhao, S. Hosseinalipour, Z. Gao, L. Huang, and H. Dai, "TDRA: A Truthful Dynamic Reverse Auction for DAG Task Scheduling Over Vehicular Clouds," *IEEE Trans. Vehicular Technology*, vol. 73, no. 3, pp. 4337-4351, Mar. 2024.
- J13. M. F. Pervej, R. Jin, S.-C. Lin, and H. Dai, "Efficient Content Delivery in User-Centric and Cache-Enabled Vehicular Edge Networks with Deadline-Constrained Heterogeneous Demands," *IEEE Trans. Vehicular Technology*, vol. 73, no. 1, pp. 1129-1145, Jan. 2024.
- J14. M. Lee, G. Yu, and H. Dai, "Privacy-Preserving Decentralized Inference with Graph Neural Networks in Wireless Networks," *IEEE Trans. Wireless Communications*, vol. 23, no. 1, pp. 543-558, Jan. 2024.
- J15. Y. He, X. He, R. Jin, and H. Dai, "Location Privacy-Aware and Energy-Efficient Offloading for Distributed Edge Computing," *IEEE Trans. Wireless Communications*, vol. 22, no. 11, pp. 7975-7988, Nov. 2023.
- J16. R. Jin, Y. Huang, Z. Zhang, and H. Dai, "On the Privacy Guarantees of Gossip Protocols in General Networks," *IEEE Trans. Network Science and Engineering*, vol. 10, no. 6, pp. 3114-3130, Nov.-Dec. 2023.
- J17. M. LiWang, Z. Gao, S. Hosseinalipour, Y. Su, X. Wang, and H. Dai, "Graph-Represented Computation-Intensive Task Scheduling over Air-Ground Integrated Vehicular Networks," *IEEE Trans. Service Computing*, vol. 16, no. 5, pp. 3397-3411, Sept.-Oct. 2023.
- J18. Z. Liu, M. LiWang, S. Hosseinalipour, H. Dai, Z. Gao, and L. Huang, "RFID: Towards Low Latency and Reliable DAG Task Scheduling Over Dynamic Vehicular Clouds," *IEEE Trans. Vehicular Technology*, vol. 72, no. 9, pp. 12139-12153, Sept. 2023.
- J19. S. J. Maeng, M. Chowdhury, I. Guvenc, A. Bhuyan, and H. Dai, "Base Station Antenna Upright Optimization for Cellular-Connected Drone Corridors," *IEEE Transactions on Aerospace and Electronic Systems*, vol. 59, no. 4, pp. 4729-4737, Aug. 2023.
- J20. J. Zhang, X. He, and H. Dai, "Blind Post-Decision State Based Reinforcement Learning for Intelligent IoT," *IEEE Internet of Things Journal*, vol. 10, no. 12, pp. 10605-10620, Jun. 2023.
- J21. M. F. Pervej, R. Jin, and H. Dai, "Resource Constrained Vehicular Edge Federated Learning with Highly Mobile Connected Vehicles," *IEEE Journal on Selected Areas in Communications*, vol. 41, no. 6, pp. 1825-1844, Jun. 2023.
- J22. Z. Tian, Z. Zhang, Z. Yang, R. Jin, and H. Dai, "Distributed Learning over Networks with Graph-Attention-Based Personalization," *IEEE Trans. Signal Processing*, vol. 71, no. 6, pp. 2071-2086, Jun. 2023.

- J23. Z. Song, J. An, H. Ding, and H. Dai, "Optimal Relay Probing for UAV Millimeter Wave Communications with Beam Training Overhead," *IEEE Trans. Vehicular Technology*, vol. 72, no. 6, pp. 7351-7363, Jun. 2023.
- J24. M. Lee, G. Yu, and H. Dai, "Decentralized Inference with Graph Neural Networks in Wireless Communication Systems," *IEEE Trans. Mobile Computing*, vol. 22, no. 5, pp. 2582-2598, May 2023.
- J25. J. Liu, J. Jia, B. Ma, C. Zhou, J. Zhou, Y. Zhou, H. Dai, and D. Dou, "Multi-Job Intelligent Scheduling with Cross-Device Federated Learning," *IEEE Trans. Parallel and Distributed Systems*, vol. 34, no. 2, pp. 535-551, Feb. 2023.
- J26. J. Liu, Z. Li, P. Tong, X. Wang, L. Xie, and H. Dai, "Learning-based Data Gathering for Information Freshness in UAV-assisted IoT Networks," *IEEE Internet of Things Journal*, vol. 10, no. 3, pp. 2557-2573, Feb. 2023.
- J27. X. He, T. Li, R. Jin, and H. Dai, "Delay-optimal Coded Offloading for Distributed Edge Computing in Fading Environments," *IEEE Trans. Wireless Communications*, vol. 21, no. 12, pp. 10796-10808, Dec. 2022.
- J28. M. Lee, G. Yu, H. Dai, and G. Y. Li, "Graph Neural Networks Meet Wireless Communications: Motivation, Applications, and Future Directions," *IEEE Wireless Communications*, vol. 29, no. 5, pp. 12-19, Oct. 2022.
- J29. M. Lee, S. Hosseinalipour, C. Brinton, G. Yu, and H. Dai, "Fast Graph Neural Network-Based Method for Winner Determination in Multi-Unit Combinatorial Auctions," *IEEE Trans. Cloud Computing*, vol. 10, no. 4, pp. 2264-2280, Oct.-Dec. 2022.
- J30. Z. Gao, M. LiWang, S. Hosseinalipour, H. Dai, and X. Wang, "A Truthful Auction for Graph Job Allocation in Vehicular Cloud-assisted Networks," *IEEE Trans. Mobile Computing*, vol. 21, no. 10, pp. 3455-3469, Oct. 2022.
- J31. S. Hosseinalipour, S. S. Azam, C. G. Brinton, N. Michelusi, V. Aggarwal, D. J. Love, and H. Dai, "Multi-Stage Hybrid Federated Learning over Large-Scale Wireless Fog Networks," *IEEE Trans. Networking*, vol. 30, no. 4, pp. 1569-1584, Aug. 2022. **2024 IEEE Communications Society William R. Bennett Prize (Best Paper Award, IEEE/ACM Transactions on Networking).**
- J32. N. Nguyen, K. Lee, and H. Dai, "Hybrid Beamforming and Adaptive RF Chain Activation for Cell-Free Millimeter-Wave Massive MIMO Systems," *IEEE Trans. Vehicular Technology*, vol. 71, no. 8, pp. 8739-8755, Aug. 2022.
- J33. R. Jin, X. He, and H. Dai, "Communication Efficient Federated Learning with Energy Awareness over Wireless Networks," *IEEE Trans. Wireless Communications*, vol. 21, no. 7, pp. 5204-5219, Jul. 2022.
- J34. K. Yue, R. Jin, C. Wong, and H. Dai, "Communication-Efficient Federated Learning via Predictive Coding," *IEEE J. Selected Topics in Signal Processing*, vol. 16, no. 3, pp. 369-380, Apr. 2022.
- J35. A. Rahmati, S. Hosseinalipour, Y. Yapici, X. He, I. Guvenc, H. Dai, and A. Bhuyan, "Dynamic Interference Management for UAV-Assisted Wireless Networks," *IEEE Trans. Wireless Communications*, vol. 21, no. 4, pp. 2637-2653, Apr. 2022.
- J36. S. J. Maeng, Y. Yapici, I. Guvenc, A. Bhuyan, and H. Dai, "Precoder Design for Physical-Layer Security and Authentication in Massive MIMO UAV Communications," *IEEE Trans. Vehicular Technology*, vol. 71, no. 3, pp. 2949-2964, Mar. 2022.
- J37. X. He, R. Jin, and H. Dai, "Multi-Hop Task Offloading with On-The-Fly Computation for Multi-UAV Remote Edge Computing," *IEEE Trans. Communications*, vol. 70, no. 2, pp. 1332-1344, Feb. 2022.
- J38. H. Ding, H. Dai, I. Guvenc, and A. Bhuyan, "Outage Analysis for Cooperative mmWave UAV Communications with Beam Training Overhead," *IEEE Wireless Communications Letters*, vol. 10, no. 10, pp. 2249-2253, Oct. 2021.
- J39. S. Chattopadhyay, H. Dai, and D. Y. Eun, "Controlling Metastable Infection Patterns in Multilayer Networks via Interlink Design," *IEEE Trans. Network Science and Engineering*, vol. 8, no. 4, pp. 3242-3256, Oct.-Dec., 2021.

- J40. Y. Ding, S. Liu, L. Xiao, Y. Tang, and H. Dai, "UAV Anti-Jamming Video Transmissions with QoE Guarantee against Jamming: A Reinforcement Learning-Based Approach," *IEEE Trans. Communications*, vol. 69, no. 9, pp. 5933-5947, Sept. 2021.
- J41. N. Nguyen, K. Lee, and H. Dai, "Application of Deep Learning to Sphere Decoding for Large MIMO Systems," *IEEE Trans. Wireless Communications*, vol. 20, no. 10, pp. 6787-6803, Oct. 2021.
- J42. L. Xiao, X. Lu, T. Xu, W. Zhuang, and H. Dai, "Reinforcement Learning Based Physical-layer Authentication for Controller Area Networks," *IEEE Trans. Information Forensics and Security*, vol. 16, pp. 2535-2547, 2021.
- J43. S. Hosseinalipour and H. Dai, "A Two-Stage Auction Mechanism for Cloud Resource Allocation," *IEEE Trans. Cloud Computing*, vol. 9, no. 3, pp. 881-895, July-September, 2021.
- J44. S. Hosseinalipour, A. Rahmati, D. Y. Eun, and H. Dai, "Energy-Aware Stochastic UAV-Assisted Surveillance," *IEEE Trans. Wireless Communications*, vol. 20, no. 5, pp. 2820-2837, May 2021.
- J45. Y. Yapici, N. Rupasinghe, I. Guvenc, H. Dai, and A. Bhuyan, "Physical Layer Security for NOMA Transmission in mmWave Drone Networks," *IEEE Trans. Vehicular Technology*, vol. 70, no. 4, pp. 3568-3582, Apr. 2021.
- J46. J. Liu, T. Peng, X. Wang, B. Bai, and H. Dai, "UAV-Aided Data Collection for Information Freshness in Wireless Sensor Networks," *IEEE Trans. Wireless Communications*, vol. 20, no. 4, pp. 2368-2382, Apr. 2021.
- J47. R. Jin, X. He, and H. Dai, "Minimizing the Age of Information in the Presence of Location Privacy-aware Mobile Agents," *IEEE Trans. Communications*, vol. 69, no. 2, pp. 1053-1067, Feb. 2021.
- J48. M. Lee, N. Ma, G. Yu, and H. Dai, "Accelerating Generalized Benders Decomposition for Wireless Resource Allocation," *IEEE Trans. Wireless Communications*, vol. 20, no. 2, pp. 1233-1247, Feb. 2021.
- J49. S. J. Maeng, M. Deshmukh, I. Guvenc, A. Bhuyan, and H. Dai, "Interference Analysis and Mitigation for Aerial IoT Considering 3D Antenna Patterns," *IEEE Trans. Vehicular Technology*, vol. 70, no. 1, pp. 490-503, Jan. 2021.
- J50. Z. Tian, Z. Zhang, J. Wang, X. Chen, W. Wang, and H. Dai, "Distributed ADMM with Synergetic Communication and Computation," *IEEE Trans. Communications*, vol. 69, no. 1, pp. 501-517, Jan. 2021.
- J51. S. Hosseinalipour, C. G. Brinton, V. Aggarwal, H. Dai, and M. Chiang, "From Federated Learning to Fog Learning: Towards Large-Scale Distributed Machine Learning in Heterogeneous Wireless Networks," *IEEE Communications Magazine*, vol. 58, no. 12, pp. 41-47, Dec. 2020.
- J52. S. J. Maeng, Y. Yapici, I. Guvenc, H. Dai, and A. Bhuyan, "Hybrid Precoding for mmWave Massive MIMO with One-Bit DAC," *IEEE Communications Letters*, vol. 24, no. 12, pp. 2941-2945, Dec. 2020.
- J53. S. Hosseinalipour, A. Rahmati, and H. Dai, "Interference Avoidance Position Planning in Dual-hop and Multi-hop UAV Relay Networks," *IEEE Trans. Wireless Communications*, vol. 19, no. 11, pp. 7033-7048, Nov. 2020.
- J54. Y. Yapici, I. Guvenc, and H. Dai, "Low-Resolution Limited-Feedback NOMA for mmWave Communications," *IEEE Trans. Wireless Communications*, vol. 19, no. 8, pp. 5433-5446, Aug. 2020.
- J55. X. Lu, L. Xiao, C. Dai, and H. Dai, "UAV-Aided Cellular Communications with Deep Reinforcement Learning Against Jamming," *IEEE Wireless Communications*, vol. 27, no. 4, pp. 48-53, Aug. 2020.
- J56. S. Hosseinalipour, J. Wang, Y. Tian, H. Dai, "Infection Analysis on Irregular Networks through Graph Signal Processing," *IEEE Trans. Network Science and Engineering*, vol. 7, no. 3, pp. 1939-1952, July-September, 2020.
- J57. S. Hosseinalipour, J. Mao, D. Y. Eun, H. Dai, "Prevention and Mitigation of Catastrophic Failures in Demand-Supply Interdependent Networks," *IEEE Trans. Network Science and Engineering*, vol. 7, no. 3, pp. 1710-1723, July-September, 2020.

- J58. S. Chattopadhyay, H. Dai, and D. Y. Eun, "Maximization of Robustness of Interdependent Networks under Budget Constraints," *IEEE Trans. Network Science and Engineering*, vol. 7, no. 3, pp. 1441-1452, July-September, 2020.
- J59. X. He, R. Jin, and H. Dai, "Physical-Layer Assisted Secure Offloading in Mobile-Edge Computing," *IEEE Trans. Wireless Communications*, vol. 19, no. 6, pp. 4054-4066, Jun. 2020.
- J60. S. Hosseinalipour, A. Nayak, H. Dai, "Power-Aware Allocation of Graph Jobs in Geo-Distributed Cloud Networks," *IEEE Transactions on Parallel and Distributed Systems*, vol. 31, no. 4, pp. 749-765, Apr. 2020.
- J61. X. He, R. Jin, and H. Dai, "PEACE: Privacy-Preserving and Cost-Efficient Task Offloading for Mobile-Edge Computing," *IEEE Trans. Wireless Communications*, vol. 19, no. 3, pp. 1814-1824, Mar. 2020.
- J62. M. LiWang, S. Hosseinalipour, Z. Gao, Y. Tang, L. Huang, and H. Dai, "Allocation of Computation-Intensive Graph Jobs over Vehicular Clouds in IoV," *IEEE Internet of Things Journal*, vol. 7, no. 1, pp. 311-324, Jan. 2020.
- J63. R. Jin, X. He, and H. Dai, "On the Security-Privacy Tradeoff in Collaborative Security: A Quantitative Information Flow Game Perspective," *IEEE Transactions on Information Forensics and Security*, vol. 14, no. 12, pp. 3273 - 3286, Dec. 2019.
- J64. L. Xiao, G. Sheng, S. Liu, H. Dai, M. Peng, and J. Song, "Deep Reinforcement Learning Enabled Secure Visible Light Communication against Eavesdropping," *IEEE Trans. Communications*, vol. 67, no. 10, pp. 6994-7005, Oct. 2019.
- J65. Y. Huang and H. Dai, "Multiplex Conductance and Gossip Based Information Spreading in Multiplex Networks," *IEEE Trans. Network Science and Engineering*, vol. 6, no. 3, pp. 391-401, July-Sept., 2019.
- J66. M. LiWang, S. Dai, Z. Gao, X. Du, M. Guizani, and H. Dai, "A Computation Offloading Incentive Mechanism with Delay and Cost Constraints under 5G Satellite-ground IoV Architecture," *IEEE Wireless Communications*, vol. 26, no. 4, pp. 124 - 132, Aug. 2019.
- J67. Y. Huang, H. Dai, and R. Ke. "Principles of effective and robust innate immune response to viral infections: a multiplex network analysis." *Frontiers in Immunology*, vol. 10 article 1736, July 2019.
- J68. X. He, R. Jin, and H. Dai, "Deep PDS-Learning for Privacy-Aware Offloading in MEC-Enabled IoT," *IEEE Internet of Things Journal*, vol. 6, no. 3, pp. 4547 - 4555, June 2019.
- J69. M. LiWang, S. Dai, Z. Gao, Y. Tang, and H. Dai, "A Truthful Reverse-Auction Mechanism for Computation Offloading in Cloud-enabled Vehicular Network," *IEEE Internet of Things Journal*, vol. 6, no. 3, pp. 4214 - 4227, June 2019.
- J70. M. Min, X. Wang, L. Xiao, Y. Chen, M. Xia, D. Wu, and H. Dai, "Learning-Based Privacy-Aware Offloading for Healthcare IoT with Energy Harvesting," *IEEE Internet of Things Journal*, vol. 6, no. 3, pp. 4307 - 4316, June 2019.
- J71. N. Nguyen, K. Lee, and H. Dai, "QR-decomposition-aided Tabu Search Detection for Large MIMO Systems," *IEEE Trans. Vehicular Technology*, vol. 68, no. 5, pp. 4857-4870, May 2019.
- J72. X. He, R. Jin, and H. Dai, "Camouflaging Mobile Primary Users in Database-Driven Cognitive Radio Networks," *IEEE Wireless Communication Letters*, vol. 8, no. 1, pp. 21-24, Feb. 2019.
- J73. R. Jin, X. He, and H. Dai, "Collaborative IDS Configuration: A Two-Layer Game-Theoretic Approach," *IEEE Trans. Cognitive Communications and Networking*, vol. 4, no. 4, pp. 803-815, Dec 2018.
- J74. I. Parvez, A. Rahmati, I. Guvenc, A. Sarvat, and H. Dai, "A Survey on Low Latency Towards 5G: RAN, Core Network and Caching Solutions," *IEEE Communications Surveys & Tutorials*, vol. 20, no. 4, pp. 3098-3130, 4th Quarter, 2018.
- J75. X. He, R. Jin, H. Dai, "Leveraging Spatial Diversity for Privacy-Aware Location-Based Services in Mobile Networks," *IEEE Transactions on Information Forensics and Security*, vol. 13, no. 6, pp. 1524-1534, June 2018.

- J76. Z. Zhang, X. Cai, C. Li, C. Zhong, and H. Dai, "One-bit Quantized Massive MIMO Detection Based on Variational Approximate Message Passing," *IEEE Trans. Signal Processing*, vol. 66, no. 9, pp. 2358 – 2373, May 2018.
- J77. L. Xiao, Y. Li, C. Dai, H. Dai, and H. V. Poor, "Reinforcement Learning-based NOMA Power Allocation in the Presence of Smart Jamming," *IEEE Trans. Vehicular Technology*, vol. 67, no. 4, pp. 3377-3389, Apr. 2018.
- J78. L. Xiao, J. Liu, Q. Li, H. Dai and H. V. Poor, "Mobile Crowdsensing Games in Vehicular Networks," *IEEE Trans. Vehicular Technology*, vol. 67, no. 2, pp. 1535-1545, Feb. 2018.
- J79. L. Xiao, Y. Li, G. Han, H. Dai, and H. V. Poor, "A Secure Mobile Crowdsensing Game with Deep Reinforcement Learning," *IEEE Trans. Information Forensics and Security*, vol. 13, no. 1, pp. 35-47, Jan. 2018.
- J80. H. Zhang, H. Li, J. H. Lee, and H. Dai, "QoS-Based Interference Alignment with Similarity Clustering for Efficient Subchannel Allocation in Dense Small Cell Networks," *IEEE Trans. Communications*, vol. 65, no. 11, pp. 5054-5066, Nov. 2017.
- J81. Z. Zhang, H. Zhang, H. Dai, X. Chen, and D. Wu, "Fountain-Coded File Spreading over Mobile Networks," *IEEE Trans. Wireless Communications*, vol. 16, no. 10, pp. 6766 – 6778, Oct. 2017.
- J82. S. Chattopadhyay, H. Dai, D. Y. Eun, and S. Hosseinalipour, "Designing Optimal Interlink Patterns to Maximize Robustness of Interdependent Networks Against Cascading Failures," *IEEE Trans. Communications*, vol. 65, no. 9, pp. 3847 – 3862, Sept. 2017.
- J83. X. He, H. Dai, P. Ning, and R. Dutta, "A Leader-follower Controlled Markov Stopping Game for Delay Tolerant and Opportunistic Resource Sharing Networks," *IEEE Journal on Selected Areas in Communications*, vol. 35, no. 3, pp. 615-627, Mar. 2017.
- J84. H. Zhang, D. Jiang, F. Li, K. Liu, H. Song, and H. Dai, "Cluster-Based Resource Allocation for Spectrum-Sharing Femtocell Networks," *IEEE Access*, vol. 4, pp. 8643 – 8656, Dec. 2016.
- J85. Z. Ding, H. Dai, and H. V. Poor, "Relay Selection for Cooperative NOMA," *IEEE Wireless Communications Letters*, vol. 5, no. 4, pp. 416-419, Aug. 2016.
- J86. X. He, H. Dai and P. Ning, "Faster Learning and Adaptation in Security Games by Exploiting Information Asymmetry," *IEEE Trans. Signal Processing*, vol. 64, no. 13, pp. 3429-3443, Jul. 2016.
- J87. L. Xiao, C. Xie, T. Chen, H. Dai, and H. V. Poor, "A Mobile Offloading Game against Smart Attacks," *IEEE Access*, vol. 4, pp. 2281-2291, May 2016.
- J88. H. Zhang, H. Dai, Z. Zhang, and Y. Huang, "Mobile Conductance in Sparse Networks and Mobility-Connectivity Tradeoff," *IEEE Trans. Wireless Communications*, vol. 15, no. 4, pp. 2954-2965, Apr. 2016.
- J89. J. Liu, H. Dai, and W. Chen, "On Throughput Maximization of Time Division Multiple Access with Energy Harvesting Users." *IEEE Trans. Vehicular Technology*, vol. 65, no. 4, pp. 2457-2470, Apr. 2016.
- J90. X. He, H. Dai, W. Shen, P. Ning, and R. Dutta, "Towards Proper Guard Zones for Link Signature," *IEEE Trans. Wireless Communications*, vol. 15, no. 3, pp. 2104-2117, Mar. 2016.
- J91. J. Lee, W. Choi, and H. Dai, "Joint User Selection and Feedback Bit Allocation Based on Sparsity Constraint in MIMO Virtual Cellular Networks," *IEEE Trans. Wireless Communications*, vol. 15, no. 3, pp. 2069-2079. Mar. 2016.
- J92. X. He, H. Dai, P. Ning, and R. Dutta, "Zero-determinant Strategies for Multi-player Multi-action Iterated Games," *IEEE Signal Processing Letters*, vol. 23, no. 3, pp. 311-315, Mar. 2016.
- J93. Z. Zhang, H. Wu, H. Zhang, H. Dai, and N. Kato, "Virtual MIMO Boosted Information Propagation on Highways," *IEEE Trans. Wireless Communications*, vol. 15, no. 2, pp. 1420-1431, Feb. 2016.
- J94. C. Li and H. Dai, "Single-Hop Transport Throughput of Secondary Networks in Spectrum Sharing Systems," *IEEE Trans. Mobile Computing*, vol. 14, no. 8, pp. 1726-1736, Aug. 2015.

- J95. M. Pandian, M. Sichitiu, and H. Dai, "Optimal Resource Allocation in Random Access Cooperative Cognitive Radio Networks," *IEEE Trans. Mobile Computing*, vol. 14, no. 6, pp. 1245-1258, June 2015.
- J96. L. Xiao, T. Chen, J. Liu, and H. Dai, "Anti-jamming Transmission Stackelberg Game with Observation Errors," *IEEE Comm. Letters*, Vol. 19, No. 6, pp. 949-952, Jun. 2015.
- J97. N. Liu, H. Li, H. Dai and D. Guo, D. Chen, "Robust Blind Image Watermarking Based on Chaotic Mixtures," *Nonlinear Dynamics*, Springer, vol. 80, no. 3, pp. 1329-1355, May 2015.
- J98. J. Liu, H. Dai, and W. Chen, "Delay optimal scheduling for energy harvesting based communications," *IEEE Journal on Selected Areas in Communications*, vol. 33, no. 3, pp. 452-466, Mar. 2015.
- J99. C. Li and H. Dai, "Throughput Scaling of Primary and Secondary Ad Hoc Networks with Same-Order Dimensions," *IEEE Trans. Vehicular Technology*, vol. 63, no. 8, pp. 3957-3966, Oct. 2014.
- J100. X. He, H. Dai and P. Ning, "Dynamic Adaptive Anti-Jamming via Controlled Mobility," *IEEE Trans. Wireless Communications*, vol. 13, no. 8, pp. 4374-4388, Aug. 2014.
- J101. H. Zhang, Z. Zhang and H. Dai, "Gossip-based Information Spreading in Mobile Networks," *IEEE Trans. Wireless Communications*, vol. 12, no. 11, pp. 5918-5928, Nov. 2013.
- J102. X. He, H. Dai, and P. Ning, "HMM-Based Malicious User Detection for Robust Collaborative Spectrum Sensing," *IEEE Journal on Selected Areas in Communications*, vol. 31, no. 11, pp. 2196-2208, Nov. 2013.
- J103. H. Zhang, Z. Zhang and H. Dai, "On the Capacity Region of Cognitive Multiple Access over White Space Channels," *IEEE Journal on Selected Areas in Communications*, vol. 31, no. 11, pp. 2517-2527, Nov. 2013.
- J104. C. Li and H. Dai, "Efficient In-network Computing with Noisy Wireless Channels," *IEEE Trans. Mobile Computing*, vol. 12, no. 11, pp. 2167 – 2177, Nov. 2013.
- J105. H. Dai, Y. Zhang and J. Liu, "Structured Variational Methods for Distributed Inference in Wireless Networks: Design and Analysis," *IEEE Trans. Signal Processing*, vol. 61, no. 15, pp. 3827 – 3839, Aug. 2013.
- J106. X. He, H. Dai and P. Ning, "A Byzantine Attack Defender in Cognitive Radio Networks: the Conditional Frequency Check," *IEEE Trans. Wireless Communications*, vol. 12, no. 5, pp. 2512-2523, May 2013.
- J107. H. Zhang, X. Wang, F. Li, H. Dai, "Channel-aware Adaptive Resource Allocation for Multicast and Unicast Services in OFDM Systems," *IET Communications*, vol. 6, issue 17, pp. 3006–3014, Nov. 2012.
- J108. C. Li, H. Dai, L. Xiao, and P. Ning, "Communication Efficiency of Anti-jamming Broadcast in Large-scale Multi-Channel Wireless Networks," *IEEE Trans. Signal Processing*, vol. 60, no. 10, pp. 5281-5292, Oct. 2012.
- J109. Y. Lu, N. Yang, H. Dai and X. Wang, "Opportunistic Decode-and-Forward Relaying with Beamforming in Two-Wave with Diffuse Power Fading," *IEEE Trans. Vehicular Technology*, vol. 61, no. 7, pp. 3050-3060, Sept. 2012.
- J110. L. Xiao, H. Dai, and P. Ning, "MAC Design of Uncoordinated FH-based Collaborative Broadcast," *IEEE Wireless Communications Letters*, vol. 1, no. 3, pp. 261-264, June 2012.
- J111. L. Xiao, H. Dai, and P. Ning, "Jamming-Resistant Collaborative Broadcast Using Uncoordinated Frequency Hopping," *IEEE Trans. Information Forensics and Security*, vol. 7, no. 1, pp. 297-309, Feb. 2012.
- J112. W. Li, H. Dai and Y. Zhang, "Location Aided Fast Distributed Consensus in Wireless Networks," *IEEE Trans. Information Theory*, vol. 56, no. 12, pp. 6208-6227, Dec. 2010.
- J113. H. Li, H. Dai, and C. Li, "Collaborative Quickest Spectrum Sensing via Random Broadcast in Cognitive Radio Systems," *IEEE Trans. Wireless Communications*, vol. 9, no. 7, pp. 2338-2348, July 2010.
- J114. Y. Zhang and H. Dai, "A Real Orthogonal Space-Time Coded UWB Scheme for Wireless Secure Communications," *EURASIP Journal on Wireless Communications and Networking*, special issue on Wireless Physical Layer Security, 2009.

- J115. W. Li and H. Dai, "Cluster-based Distributed Consensus," *IEEE Trans. Wireless Communications*, vol. 8, no. 1, pp. 28-31, Jan. 2009.
- J116. H. Zhang, H. Dai and B. L. Hughes, "Analysis on the Diversity-Multiplexing Tradeoff for Ordered MIMO SIC Receivers," *IEEE Trans. Communications*, vol. 57, no. 1, pp. 125-133, Jan. 2009.
- J117. W. Li and H. Dai, "Energy-Efficient Distributed Detection via Multihop Transmission in Sensor Networks," *IEEE Signal Processing Letters*, vol. 15, pp. 265-268, 2008.
- J118. H. Zhang, N. B. Mehta, A. F. Molisch, J. Zhang, and H. Dai, "Joint Transmission by Cooperative Base Stations in Multiuser MIMO Cellular Downlinks with Asynchronous Interference," *IEEE Trans. Wireless Communications*, vol. 7, no.1, pp. 155-165, Jan. 2008.
- J119. Y. Zhang and H. Dai, "Energy Efficiency and Optimal Transmission Strategy Selection in Wireless Sensor Networks," *Journal of Communications and Networks*, vol.9, no.4, pp. 473-481, Dec. 2007.
- J120. Q. Zhou and H. Dai, "Asymptotic Analysis on the Interaction between Spatial Diversity and Multiuser Diversity in Wireless Networks," *IEEE Trans. Signal Processing*, vol. 55, no. 8, pp. 4271-4283, Aug. 2007.
- J121. H. Dai, H. Zhang, and Q. Zhou, "Some Analysis in Distributed MIMO Systems," *Journal of Communications, Academy Publisher*, vol. 2, no. 3, pp. 43-50, 2007.
- J122. W. Li and H. Dai, "Distributed Detection in Wireless Sensor Networks Using a Multiple Access Channel," *IEEE Trans. Signal Processing*, vol. 55, no. 3, pp. 822-833, Mar. 2007.
- J123. H. Zhang, H. Dai, Q. Zhou and B. L. Hughes, "On the Diversity Order of Spatial Multiplexing Systems with Transmit Antenna Selection: A Geometrical Approach," *IEEE Trans. Information Theory*, vol. 52, no. 12, pp. 5297-5311, Dec. 2006.
- J124. Q. Zhou and H. Dai, "Asymptotic Analysis in MIMO MRT/MRC Systems," *EURASIP Journal on Wireless Communications and Networking*, vol. 2006, Article ID 45831, 8 pages, 2006.
- J125. H. Zhang and H. Dai, "Fast MIMO Antenna Selection Algorithms: A Geometric Approach," *IEEE Comm. Letters*, vol. 10, no. 11, pp. 754-756, Nov. 2006.
- J126. Q. Zhou and H. Dai, "Joint Antenna Selection and Link Adaptation for MIMO Systems," *IEEE Trans. Vehicular Technology*, vol. 55, no. 1, pp. 243-255, Jan. 2006.
- J127. W. Li and H. Dai, "Optimal Throughput and Energy Efficiency for Wireless Sensor Networks: Multiple Access and Multi-packet Reception," *EURASIP Journal on Wireless Communications and Networking*, special issue on Wireless Sensor Networks, vol. 2005, no. 4, pp. 541-553, 2005.
- J128. H. Zhang and H. Dai, "Co-channel Interference Mitigation and Cooperative Processing in Downlink Multicell Multiuser MIMO Networks," *EURASIP Journal on Wireless Communications and Networking*, special issue on Multiuser MIMO Networks, vol. 2004, no. 2, pp. 222-235, 2004.
- J129. H. Dai, L. Mailaender, and H. V. Poor, "CDMA Downlink Transmission with Transmit Antenna Arrays and Power Control in Multipath Fading Channels," *EURASIP Journal on Wireless Communications and Networking*, special issue on Innovative Signal Transmission and Detection Techniques for Next Generation Cellular CDMA Systems, vol. 2004, no. 1, pp. 32-45, 2004.
- J130. H. Dai, A. F. Molisch, and H. V. Poor: "Downlink Capacity of Interference-Limited MIMO Systems with Joint Detection," *IEEE Trans. Wireless Communications*, vol. 3, no. 2, pp. 442-453, Mar. 2004.
- J131. H. Dai and H. V. Poor: "Asymptotic Spectral Efficiency of Multicell MIMO Systems with Frequency-Flat Fading," *IEEE Trans. Signal Processing*, vol. 51, no. 11, pp. 2976-2989, Nov. 2003.
- J132. H. Dai and H. V. Poor, "Advanced Signal Processing for Powerline Communications," *IEEE Communications Magazine*, [invited paper](#), vol. 41, no. 5, pp. 100-107, May 2003.
- J133. H. Dai and H. V. Poor: "Iterative Space-Time Processing for Multiuser Detection in Multipath CDMA Channels", *IEEE Trans. Signal Processing*, vol. 50, no. 9, pp. 2116-2127, Sept. 2002.
- J134. H. Dai and H. V. Poor: "Turbo Multiuser Detection for Coded DMT VDSL Systems," *IEEE J. Select. Areas Communications*, vol. 20, no. 2, pp. 351-362, Feb. 2002.

- J135. H. Dai and H. V. Poor: "Crosstalk Mitigation in DMT VDSL with Impulse Noise," *IEEE Trans. Circuits and Systems I: Fundamental Theory and Applications*, vol. 48, no. 10, pp. 1205-1213, Oct. 2001.
- J136. H. Dai and Z. Cao, "Study of IMBE Vocoder with Speech Enhancement," *Journal of China Institute of Communications*, vol. 19, no. 4, pp. 43-49, Apr. 1998.

Monographs and Book Chapters

- B1. X. He and H. Dai, *Dynamic Games for Network Security*, Springer, 2018.
- B2. X. He and H. Dai, *Adversary Detection in Cognitive Radio Networks*, Springer, 2018.
- B3. J. Liu, X. Wang, B. Bai, and H. Dai, "UAV-assisted Status Updates", Chapter 18 in *Age of Information: Foundations and Applications*, Nikolaos Pappas; M. A. Abd-Elmagid, B. Zhou, W. Saad, H. S. Dhillon (eds), Cambridge, UK: Cambridge University Press, 2022.
- B4. N. Rupasinghe, Y. Yapici, I. Guvenc, H. Dai and A. Bhuyan, "Physical Layer Security for UAV Communications", Chapter 1 in *UAV Communications for 5G and Beyond*, Y. Zeng, R. Zhang, D. Matolak, and G. Geraci (eds), Wiley & Sons, 2020.
- B5. H. Zhang and H. Dai, "Design Fundamentals and Interference Mitigation for Cellular Networks," Chapter 12 in *Advances in Wireless Networks: Performance Modelling, Analysis and Enhancement*, G. Min, Y. Pan, P. Fan (eds.), Nova Science Publishers, 2008.
- B6. H. Dai, S. Jayaweera, H. V. Poor, D. Reynolds, and X. Wang, "Multiuser Receiver Design," Chapter 6 in *MIMO Wireless Communications*, E. Bilgieri, A. R. Calderbank, A. G. Constantinides, A. Goldsmith, A. Paulraj and H. V. Poor (eds), Cambridge, UK: Cambridge University Press, 2006.
- B7. H. Dai, M. Gastpar, N. Jindal, and L.L. Xie (eds), Theory and Applications in Multi-user/Multi-terminal Communications, *EURASIP Journal on Wireless Communications and Networking*, Aug. 2008.
- B8. E. Serpedin, H. Li, A. Dogandžić, H. Dai, and P. Cotae (eds), Distributed Signal Processing Techniques for Wireless Sensor Networks, *EURASIP Journal on Advances in Signal Processing*, Jan. 2008.

Conference Papers:

- C1. B. Guo, M. LiWang, F. Yang, S. Hosseinalipour, X. Wang, and H. Dai, "Real-time and Low-Overhead Graph Task Scheduling over Vehicular Computing-assisted Edge Networks," *2024 IEEE International Conference on Communications (ICC)*, Denver, CO, June 2024.
- C2. J. Liu, T. Che, Y. Zhou, R. Jin, H. Dai, D. Dou, and P. Valduriez, "AEDFL: Efficient Asynchronous Decentralized Federated Learning with Heterogeneous Devices," *Proc. 2024 SIAM International Conference on Data Mining (SDM)*, Houston, TX, USA, Apr. 18-20, 2024.
- C3. J. Liu, J. Jia, T. Che, C. Huo, J. Ren, J. Zhou, Y. Zhou, H. Dai, and D. Dou, "FedASMU: Efficient Asynchronous Federated Learning with Dynamic Staleness-aware Model Update," *2024 AAAI Conference on Artificial Intelligence (AAAI)*, Vancouver, CA, Feb. 20-28, 2024.
- C4. T. Che, J. Liu, Y. Zhou, J. Ren, J. Zhou, V. Sheng, H. Dai, and D. Dou, "Federated Learning of Large Language Models with Parameter-Efficient Prompt Tuning and Adaptive Optimization," *Proc. 2023 Conference on Empirical Methods in Natural Language Processing (EMNLP)*, Singapore, Dec. 6-10, 2023.
- C5. R. Jin, Z. Su, C. Zhong, Z. Zhang, T. Quek, and H. Dai, "Breaking the Communication-Privacy-Accuracy Tradeoff with f -Differential Privacy," *Proc. the 37th International Conference on Neural Information Processing Systems (NeurIPS)*, New Orleans, LA, Dec. 10-16, 2023.
- C6. M. F. Reza, A. Rahmati, T. Wu, and H. Dai, "CGBA: Curvature-aware Geometric Black-box Attack," *Proc. 2023 International Conference on Computer Vision (ICCV)*, Paris, France, Oct. 2-6, 2023.

- C7. K. Yue, R. Jin, C. Wong, D. Baron, and H. Dai, "Gradient Obfuscation Gives a False Sense of Security in Federated Learning," *2023 USENIX Security Symposium*, Anaheim, CA, Aug. 9-11, 2023.
- C8. R. Jin, X. He, and H. Dai, "Decentralized Differentially Private Without-Replacement Stochastic Gradient Descent," *Proc. 2023 Conference on Information Sciences and Systems (CISS)*, Baltimore, MD, March 2023.
- C9. D. Geng, T. Li, X. He, and H. Dai, "Dynamic Power Control for Delay-Optimal Replicated Edge Computing," *IEEE Global Communications Conference (GLOBECOM) – WCDI Workshop*, Rio de Janeiro, Brazil. Dec. 2022.
- C10. T. Li, X. He, and H. Dai, "Task-Decoding Assisted Cooperative Transmission for Coded Edge Computing," *IEEE Global Communications Conference (GLOBECOM) – WCDI Workshop*, Rio de Janeiro, Brazil. Dec. 2022.
- C11. K. Yue, R. Jin, R. Pilgrim, C. Wong, D. Baron, and H. Dai, "Neural Tangent Kernel Empowered Federated Learning," *2022 International Conference on Machine Learning (ICML)*, Baltimore, MD, July 17-23, 2022.
- C12. H. Zhang, J. Liu, J. Jia, Y. Zhou, H. Dai, and D. Dou, "FedDUAP: Federated Learning with Dynamic Update and Adaptive Pruning Using Shared Data on the Server," *2022t International Joint Conference on Artificial Intelligence (IJCAI)*, Vienna, Austria, July 23-29, 2022.
- C13. C. Zhou, J. Liu, J. Jia, J. Zhou, Y. Zhou, H. Dai, and D. Dou, "Efficient Device Scheduling with Multi-Job Federated Learning," *2022 AAAI Conference on Artificial Intelligence (AAAI)*, virtual.
- C14. R. Zou, W. Wang, and H. Dai, "Temporal and Spectral Analysis of Spectrum Hole Distributions in an LTE Cell," *2021 IEEE Global Communications Conference (GLOBECOM)*, Madrid, Spain, Dec. 2021.
- C15. U. Bhattacharjee, E. Ozturk, O. Ozdemir, I. Guvenc, M. Sichitiu, and H. Dai, "Experimental Study of Outdoor UAV Localization and Tracking using Passive RF Sensing," *15th ACM Workshop on Wireless Network Testbeds, Experimental Evaluation & Characterization (WiNTECH'21)*, New Orleans, LA, Oct. 2021.
- C16. Y. Su, M. LiWang, S. Hosseinalipour, L. Huang, and H. Dai, "Optimal Position Planning of UAV Relays in UAV-assisted Vehicular Networks," *2021 IEEE International Conference on Communications (ICC)*, Montreal, Canada, June 2021.
- C17. S. J. Maeng, Y. Yapici, I. Guvenc, H. Dai, and A. Bhuyan, "Power Allocation for Fingerprint-Based PHY-Layer Authentication with mmWave UAV Networks," *2021 IEEE International Conference on Communications (ICC)*, Montreal, Canada, June 2021.
- C18. H. Zhang, X. He, Q. Wu, and H. Dai, "Spectral Graph Theory Based Resource Allocation for IRS-Assisted Multi-Hop Edge Computing," *2021 IEEE INFOCOM Workshop on Intelligent Cloud Computing and Networking (ICCN)*, Vancouver, Canada, May 2021.
- C19. X. He, R. Jin, and H. Dai, "Joint Service Placement and Resource Allocation for Multi-UAV Collaborative Edge Computing," *2021 IEEE Wireless Communications and Networking Conferences (WCNC)*, Nanjing, China, Mar. 2021.
- C20. A. Bhuyan, I. Guvenc, H. Dai, M. L. Sichitiu, S. Singh, A. Rahmati, and S. J. Maeng, "Secure 5G Network for a Nationwide Drone Corridor," *2021 IEEE Aerospace Conference*, Mar. 2021.
- C21. Y. Huang, R. Jin, and H. Dai, "Differential Privacy and Prediction Uncertainty of Gossip Protocols in General Networks," *2020 IEEE Global Communications Conference (GLOBECOM)*, Taipei, Taiwan, Dec. 2020.
- C22. X. He, R. Jin, and H. Dai, "Joint Power and Deployment Optimization for Multi-UAV Remote Edge Computing," *2020 IEEE Global Communications Conference (GLOBECOM)*, Taipei, Taiwan, Dec. 2020.
- C23. A. Rahmati, S. Hosseinalipour, Y. Yapici, I. Guvenc, H. Dai, and A. Bhuyan, "Energy-Efficient Beamforming and Power Control for Uplink NOMA in mmWave UAV Networks," *2020 IEEE Global Communications Conference (GLOBECOM)*, Taipei, Taiwan, Dec. 2020.
- C24. A. Rahmati, S.-M. Moosavi-Dezfooli, P. Frossard, and H. Dai, "GeoDA: a geometric framework for black-box adversarial attacks," *2020 IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, Seattle, WA, June 2020.

- C25. X. He, R. Jin, and H. Dai, "Glide and Zap Q-Learning," *2020 IEEE INFOCOM Workshop on Network Intelligence*, Toronto, Canada, July 2020.
- C26. H. Zhang, X. He, and H. Dai, "Secure UAV Communication Networks via Friendly Jamming and Bandwidth Allocation," *2020 IEEE INFOCOM Workshop on Drone-Assisted Smart Backhaul Solutions for 5G and Beyond*, Toronto, Canada, July 2020.
- C27. M. LiWang, Z. Gao, S. Hosseinalipour, H. Dai, and X. Wang, "Energy-aware Allocation of Graph Jobs in Vehicular Cloud Computing-enabled Software-defined IoV," *2020 IEEE INFOCOM Workshop on Pervasive Systems in the IoT Era*, Toronto, Canada, July 2020.
- C28. P. Tong, J. Liu, X. Wang, B. Bai, and H. Dai, "Deep Reinforcement Learning for Efficient Data Collection in UAV-Aided Internet of Things," *2020 IEEE ICC Workshop on Integrating UAVs into 5G and Beyond*, Dublin, Ireland, June 2020.
- C29. S. Hosseinalipour, A. Rahmati and H. Dai, "Optimal Jammer Placement in UAV-assisted Relay Networks," *2020 IEEE International Conference on Communications (ICC)*, Dublin, Ireland, June 2020.
- C30. M. LiWang, Z. Gao, S. Hosseinalipour, and H. Dai, "Multi-Task Offloading over Vehicular Clouds under Graph-based Representation," *2020 IEEE International Conference on Communications (ICC)*, Dublin, Ireland, June 2020.
- C31. S. Singh, H. Narasimhan, I. Guvenc, A. Bhuyan, H. Dai, and M. Sichitiu, "Coverage Analysis for Ground and Aerial Users in mmWave Cellular Networks in Urban Settings," *IEEE SoutheastCon 2020*, Raleigh, NC, Mar. 2020.
- C32. S. Singh, S. L. Sunkara, I. Guvenc, H. Dai, A. Bhuyan, M. Sichitiu, "Spectrum Reuse among Aerial and Ground Users in mmWave Cellular Networks in Urban Settings," *2020 IEEE 17th Annual Consumer Communications & Networking Conference (CCNC)*, Las Vegas, NV, Jan. 2020.
- C33. A. Rahmati, S. Hosseinalipour, Y. Yapici, X. He, I. Guvenc, H. Dai, and A. Bhuyan, "Interference Avoidance in UAV-Assisted Networks: Joint 3D Trajectory Design and Power Allocation," *2019 IEEE Global Communications Conference (GLOBECOM)*, Waikoloa, HI, Dec. 2019.
- C34. Y. Ding, D. Jiang, J. Huang, L. Xiao, S. Liu, Y. Tang, and H. Dai, "QoE-Aware Power Control for UAV-aided Media Transmission with Reinforcement Learning," *2019 IEEE Global Communications Conference (GLOBECOM)*, Waikoloa, HI, Dec. 2019.
- C35. Y. Yapici, I. Guvenc, and H. Dai, "Low-Resolution Limited Feedback for mmWave NOMA Communications," *2019 IEEE GLOBECOM Workshop on High Capacity Point-to-Point Wireless Communications*, Waikoloa, HI, Dec. 2019.
- C36. A. Rahmati, Y. Yapici, N. Rupasinghe, I. Guvenc, H. Dai, and A. Bhuyan, "Energy Efficiency of RSMA and NOMA in Cellular-Connected mmWave UAV Networks," *2019 IEEE ICC Workshop on Non-Orthogonal Multiple Access Techniques for 5G (NOMA5G)*, Shanghai, China, May 2019.
- C37. Y. Yapici, S. J. Maeng, I. Guvenc, H. Dai, and A. Bhuyan, "SLNR Based Precoding for One-Bit Quantized Massive MIMO in mmWave Communications," *2019 IEEE ICC Workshop on Millimeter-Wave Communications for 5G and B5G (MWC5G)*, Shanghai, China, May 2019.
- C38. P. Tong, J. Liu, X. Wang, B. Bai, and H. Dai, "UAV-Enabled Age-Optimal Data Collection in Wireless Sensor Networks," *2019 IEEE ICC Workshop on Fundamental and Practice of Short-Packet Ultra-Reliable Low-Latency Communications for 5G & Beyond (B5G-URLLC)*, Shanghai, China, May 2019.
- C39. S. Hosseinalipour, A. Rahmati and H. Dai, "Interference Avoidance Position Planning in UAV-assisted Wireless Communication," *2019 IEEE International Conference on Communications (ICC)*, Shanghai, China, May 2019.
- C40. A. Rahmati, S. Hosseinalipour, and H. Dai, "Optimal Time Allocation in VANETs Advertising: A Price-based Approach using Stacklberg Game," *2019 IEEE International Conference on Communications (ICC)*, Shanghai, China, May 2019.

- C41. A. Rahmati and H. Dai, "Reinforcement Learning for Interference Avoidance Game in RF-Powered Backscatter Communications," *2019 IEEE International Conference on Communications (ICC)*, Shanghai, China, May 2019.
- C42. R. Jin, X. He and H. Dai, "Distributed Byzantine Tolerant Stochastic Gradient Descent in the Era of Big Data," *2019 IEEE International Conference on Communications (ICC)*, Shanghai, China, May 2019.
- C43. X. He, R. Jin and H. Dai, "Physical-Layer Assisted Privacy-Preserving Offloading in Mobile-Edge Computing," *2019 IEEE International Conference on Communications (ICC)*, Shanghai, China, May 2019.
- C44. T. Xu, X. Lu, L. Xiao, Y. Tang and H. Dai, "Voltage Based Authentication for Controller Area Networks with Reinforcement Learning," *2019 IEEE International Conference on Communications (ICC)*, Shanghai, China, May 2019.
- C45. W. Wang, M. Min, L. Xiao, Y. Chen and H. Dai, "Protecting Semantic Trajectory Privacy for VANET with Reinforcement Learning," *2019 IEEE International Conference on Communications (ICC)*, Shanghai, China, May 2019.
- C46. A. Nayak, S. Hosseinalipour, and H. Dai, "Smart Information Spreading for Opinion Maximization in Social Networks," *2019 IEEE Conference on Computer Communications (INFOCOM)*, Paris, France, April 2019.
- C47. A. Rahmati, X. He, I. Guvenc, and H. Dai, "Dynamic Mobility-Aware Interference Avoidance for Aerial Base Stations in Cognitive Radio Networks," *2019 IEEE Conference on Computer Communications (INFOCOM)*, Paris, France, April 2019.
- C48. N. Rupasinghe, Y. Yapici, I. Guvenc, H. Dai, A. Bhuyan, "Enhancing Physical Layer Security for NOMA Transmission in mmWave Drone Networks," *2018 Asilomar Conference on Signals, Systems, and Computers*, Pacific Grove, CA, Oct. 2018.
- C49. K. Liu, C. Shen, S. Chattopadhyay and H. Dai, "Designing Interdependent Networks Against Cascading Failures with Node Protections," *2018 IEEE International Conference on Communications (ICC)*, Kansas City, MO, May 2018.
- C50. J. Liu, X. Wang, B. Bai, and H. Dai, "Age-Optimal Trajectory Planning for UAV-Assisted Data Collection," *2018 IEEE INFOCOM Workshop on Age of Information*, Honolulu, HI, Apr. 2018.
- C51. X. He, J. Liu, R. Jin and H. Dai, "Privacy-Aware Offloading in Mobile-Edge Computing," *2017 IEEE Global Communications Conference (GLOBECOM)*, Singapore, Dec. 2017.
- C52. S. Hosseinalipour, A. Nayak, and H. Dai, "Real-Time Strategy Selection for Mobile Advertising in VANETs," *2017 IEEE Global Communications Conference (GLOBECOM)*, Singapore, Dec. 2017.
- C53. A. Nayak, S. Hosseinalipour, and H. Dai, "Dynamic Advertising in VANETs using Repeated Auctions," *2017 IEEE Global Communications Conference (GLOBECOM)*, Singapore, Dec. 2017.
- C54. S. Hosseinalipour, J. Wang, H. Dai, and W. Wang, "Detection of Infections using Graph Signal Processing in Heterogeneous Networks," *2017 IEEE Global Communications Conference (GLOBECOM)*, Singapore, Dec. 2017.
- C55. R. Jin, X. He, H. Dai, R. Dutta and P. Ning, "Towards Privacy-Aware Collaborative Security: A Game-Theoretic Approach," *2017 IEEE Symposium on Privacy-Aware Computing (PAC)*, Washington, D.C., Aug. 2017.
- C56. Y. Huang and H. Dai, "Multiplex Conductance and Gossip Based Information Spreading in Multiplex Networks," *2017 IEEE International Symposium on Information Theory (ISIT)*, Aachen, Germany, June 2017.
- C57. X. He, M. Islam, R. Jin, and H. Dai, "Foresighted Deception in Dynamic Security Games," *2017 IEEE International Conference on Communications (ICC)*, Paris, France, May 2017.
- C58. S. Hosseinalipour and H. Dai, "Options-based Sequential Auctions for Dynamic Cloud Resource Allocation," *2017 IEEE International Conference on Communications (ICC)*, Paris, France, May 2017.

- C59. Y. Li, L. Xiao, H. Dai, and H. V. Poor, "Game Theoretic Study of Protecting MIMO Transmissions Against Smart Attacks," *2017 IEEE International Conference on Communications (ICC)*, Paris, France, May 2017, **best paper award**.
- C60. S. Chattopadhyay and H. Dai, "Designing Optimal Interlink Structures for Interdependent Networks under Budget Constraints," *2017 IEEE International Conference on Communications (ICC)*, Paris, France, May 2017.
- C61. Y. Huang and H. Dai, "On Information Spreading in Multiplex Networks with Gossip Mechanism," *2017 IEEE International Conference on Communications (ICC)*, Paris, France, May 2017.
- C62. R. Jin, X. He, and H. Dai, "Collaborative IDS Configuration: A Two-layer Game-Theoretical Approach," *2016 IEEE Global Communications Conference (GLOBECOM)*, Washington, DC, Dec. 2016.
- C63. S. Chattopadhyay and H. Dai, "Estimation of Robustness of Interdependent Networks against Failure of Nodes," *2016 IEEE Global Communications Conference (GLOBECOM)*, Washington, DC, Dec. 2016.
- C64. X. He, H. Dai, P. Ning, and R. Dutta, "A Multi-player Markov Stopping Game for Delay-tolerant and Opportunistic Resource Sharing Networks," *2016 IEEE Conference on Computer Communications (INFOCOM)*, San Diego, CA, Apr. 2016.
- C65. L. Xiao, C. Xie, T. Chen, H. Dai and H. V. Poor, "Mobile Offloading Game against Smart Attacks," *IEEE INFOCOM Workshop on Security and Privacy in Big Data (BIGSECURITY)*, San Diego, CA, Apr. 2016, **best paper award**.
- C66. Y. Liu, C. Li, C. Yin, and H. Dai, "Connectivity for Overlaid Wireless Networks with Outage Constraints," *2016 IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, Shanghai, China, Mar. 2016.
- C67. S. Chattopadhyay and H. Dai, "Towards Optimal Link Patterns for Robustness of Interdependent Networks against Cascading Failures," *2015 IEEE Global Communications Conference (GLOBECOM)*, San Diego, CA, Dec. 2015.
- C68. X. He, H. Dai, P. Ning, and R. Dutta, "Dynamic IDS Configuration in the Presence of Intruder Type Uncertainty," *2015 IEEE Global Communications Conference (GLOBECOM)*, San Diego, CA, Dec. 2015.
- C69. J. Lee and H. Dai, "Nash Bargaining in Beamforming Games with Quantized CSI in Two-user Interference Channels," *2015 IEEE Global Communications Conference (GLOBECOM)*, San Diego, CA, Dec. 2015.
- C70. L. Xiao, Q. Li, T. Chen, E. Cheng, and H. Dai, "Jamming Games in Underwater Sensor Networks with Reinforcement Learning," *2015 IEEE Global Communications Conference (GLOBECOM)*, San Diego, CA, Dec. 2015.
- C71. W. Shen, Y. Liu, X. He, H. Dai and P. Ning, "No Time to Demodulate - Fast Physical Layer Verification of Friendly Jamming," *2015 IEEE International Conference on Military Communications (MILCOM)*, Tampa, FL, Oct. 2015.
- C72. X. He, H. Dai, P. Ning, and R. Dutta, "A Stochastic Multi-channel Spectrum Access Game with Incomplete Information," *2015 IEEE International Conference on Communications (ICC)*, London, UK, June 2015.
- C73. Y. Liu, C. Li, C. Yin, and H. Dai, "A Unified Framework for Wireless Connectivity Study subject to General Interference Attack," *2015 IEEE International Conference on Communications (ICC)*, London, UK, June 2015.
- C74. X. He, H. Dai and P. Ning, "Improving Learning and Adaptation in Security Games by Exploiting Information Asymmetry," *2015 IEEE Conference on Computer Communications (INFOCOM)*, Hong Kong, China, Apr. 2015.
- C75. J. Liu, H. Dai, and W. Chen, "On Optimum Time Division Multiple Access for Energy Harvesting Channels," *2014 IEEE Global Communications Conference (GLOBECOM)*, Austin, TX, Dec. 2014.
- C76. X. He, H. Dai, Y. Huang, D. Wang, W. Shen and P. Ning, "The Security of Link Signature: A View from Channel Models," *2014 IEEE Conference on Communications and Network Security (CNS): Workshop on Physical-layer Methods for Wireless Security (PhySec'14)*, San Francisco, CA, Oct. 2014.

- C77. W. Shen, P. Ning, X. He, H. Dai, and Y. Liu, "MCR Decoding: A MIMO Approach for Defending against Wireless Jamming Attacks," *2014 IEEE Conference on Communications and Network Security (CNS): Workshop on Physical-layer Methods for Wireless Security (PhySec'14)*, San Francisco, CA, Oct. 2014.
- C78. J. Liu and H. Dai, "A Belief Propagation Based Hierarchical Approach for Capacitated Network Decomposition," [invited paper](#), *2014 IEEE/CIC International Conference on Communications in China (ICCC)*, 6 pages, Shanghai, China, Oct. 2014.
- C79. H. Zhang, Y. Huang, Z. Zhang and H. Dai, "Mobile Conductance in Sparse Networks and Mobility-Connectivity Tradeoff," *2014 IEEE International Symposium on Information Theory (ISIT)*, Honolulu, HI, June 2014.
- C80. C. Li and H. Dai, "Connectivity of Multi-channel Wireless Networks under Jamming Attacks," *2013 IEEE Global Communications Conference (GLOBECOM)*, Atlanta, GA, Dec. 2013.
- C81. H. Zhang, Z. Zhang and H. Dai, "Rateless-Coding-Assisted Multi-Packet Spreading over Mobile Networks," *2013 IEEE Global Communications Conference (GLOBECOM)*, Atlanta, GA, Dec. 2013.
- C82. J. Liu, H. Dai, W. Chen and Z. Cao, "Delay Optimal Scheduling for Energy Harvesting Based Communications," *2013 IEEE Global Communications Conference (GLOBECOM)*, Atlanta, GA, Dec. 2013.
- C83. X. He, H. Dai and P. Ning, "Dynamic Adaptive Anti-jamming via Controlled Mobility," *2013 IEEE Conferences on Communications and Network Security (CNS)*, Washington, D.C., Oct. 2013.
- C84. H. Zhang, Z. Zhang and H. Dai, "Mobile Conductance and Gossip-based Information Spreading in Mobile Networks," *2013 IEEE International Symposium on Information Theory (ISIT)*, Istanbul, Turkey, July 2013.
- C85. W. Shen, P. Ning, X. He, and H. Dai, "Ally Friendly Jamming: How to Jam Your Enemy and Maintain Your Own Wireless Connectivity at the Same Time," *Proceedings of 2013 IEEE Symposium on Security and Privacy (Oakland '13)*, Oakland, CA, May 2013.
- C86. X. He, H. Dai, W. Shen and P. Ning, "Is Link Signature Dependable for Wireless Security?" *2013 IEEE Conference on Computer Communications (INFOCOM) - mini conference*, Turin, Italy, Apr. 2013.
- C87. J. Liu, W. Chen, Z. Cao, Y. Zhang, and H. Dai, "Achieving Low Outage Probability with Network Coding in Wireless Multicarrier Multicast Systems," *2012 IEEE Global Communications Conference (GLOBECOM)*, Anaheim, CA, Dec. 2012.
- C88. X. He, H. Dai and P. Ning, "A Byzantine Attack Defender: the Conditional Frequency Check," *2012 IEEE International Symposium on Information Theory (ISIT)*, Cambridge, MA, July 2012.
- C89. L. Xiao, H. Dai and P. Ning, "Jamming-Resistant Collaborative Broadcast in Wireless Networks, Part I: Single-hop Networks," *2011 IEEE Global Communications Conference (GLOBECOM)*, Houston, TX, Dec. 2011.
- C90. L. Xiao, H. Dai and P. Ning, "Jamming-Resistant Collaborative Broadcast in Wireless Networks, Part II: Multi-hop Networks," *2011 IEEE Global Communications Conference (GLOBECOM)*, Houston, TX, Dec. 2011.
- C91. H. Zhang, Z. Zhang, H. Dai, R. Yin and X. Chen, "Distributed Spectrum-Aware Clustering in Cognitive Radio Sensor Networks," *2011 IEEE Global Communications Conference (GLOBECOM)*, Houston, TX, Dec. 2011.
- C92. C. Li and H. Dai, "Transmission Throughput of Decentralized Overlaid Networks with Outage Constraints," *2011 IEEE International Conference on Communications (ICC)*, Kyoto, Japan, June 2011.
- C93. C. Li and H. Dai, "Transport throughput of Decentralized Cognitive Radio Networks," *2011 IEEE Conference on Computer Communications (INFOCOM)*, Shanghai, China, Apr. 2011.
- C94. C. Li and H. Dai, "On the Throughput Scaling of Cognitive Radio Ad Hoc Networks," *2011 IEEE Conference on Computer Communications (INFOCOM)*, Shanghai, China, Apr. 2011.

- C95. A. Liu, P. Ning, H. Dai, Y. Liu and C. Wang, "Defending DSSS-based Broadcast Communication against Insider Jammers via Delayed Seed-Disclosure," *Annual Computer Security Applications Conference (ACSAC'10)*, Austin, TX, Dec. 2010.
- C96. C. Li, H. Dai, L. Xiao and P. Ning, "Analysis and Optimization on Jamming-resistant Collaborative Broadcast in Large-Scale Networks," **invited paper**, *2010 Asilomar Conference on Signals, Systems, and Computers*, Pacific Grove, CA, Nov. 2010.
- C97. A. Liu, P. Ning, H. Dai, Y. Liu and C. Wang, "USD-FH: Jamming-resistant Wireless Communication using Frequency Hopping with Uncoordinated Seed Disclosure," *IEEE International Conference on Mobile Ad-hoc and Sensor Systems (MASS 2010)*, San Francisco, CA, Nov. 2010, **best paper award**.
- C98. C. Li and H. Dai, "Transport Capacity and Connectivity of Cognitive Radio Networks with Outage Constraint," *2010 IEEE International Symposium on Information Theory (ISIT)*, Austin, Texas, June 2010.
- C99. Y. Liu, P. Ning, H. Dai, "Authenticating Primary Users' Signals in Cognitive Radio Networks via Integrated Cryptographic and Wireless Link Signatures," *Proceedings of 2010 IEEE Symposium on Security and Privacy (Oakland '10)*, Oakland, CA, May 2010.
- C100. Y. Zhang and H. Dai, "Distributed Network Decomposition: A Probabilistic Greedy Approach," *2010 IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, Dallas, TX, Mar. 2010.
- C101. C. Li and H. Dai, "Towards Efficient Designs for In-network Computing with Noisy Wireless Channels," *2010 IEEE Conference on Computer Communications (INFOCOM)*, San Diego, CA, Mar. 2010.
- C102. Y. Liu, P. Ning, H. Dai and A. Liu, "Randomized Differential DSSS: Jamming-Resistant Wireless Broadcast Communication," *2010 IEEE Conference on Computer Communications (INFOCOM)*, San Diego, CA, Mar. 2010.
- C103. H. Li, H. Dai, and C. Li, "Collaborative Quickest Spectrum Sensing via Random Broadcast in Cognitive Radio Systems," *2009 IEEE Global Communications Conference (GLOBECOM)*, Honolulu, Hawaii, Nov. 2009.
- C104. Y. Zhang and H. Dai, "Structured Variational Methods for Distributed Inference: Convergence Analysis and Performance-Complexity Tradeoff," *2009 IEEE International Symposium on Information Theory (ISIT)*, Seoul, South Korea, June 2009.
- C105. C. Li, H. Dai and H. Li, "Adaptive Quickest Change Detection with Unknown Parameter," *2009 IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, Taipei, April 2009.
- C106. Y. Zhang and H. Dai, "Structured Variational Methods for Distributed Inference in Wireless Ad Hoc and Sensor Networks," *2009 IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, Taipei, April 2009.
- C107. C. Li, H. Dai and H. Li, "Finding the K Largest Metrics in a Noisy Broadcast Network," *2008 Allerton Conference on Communication, Control and Computing*, Monticello, IL, Sept. 2008.
- C108. H. Li and H. Dai, "Continuous-Model Communication Complexity with Applications in Distributed Resource Allocation in Wireless Ad Hoc Networks," *2008 Allerton Conference on Communication, Control and Computing*, Monticello, IL, Sept. 2008.
- C109. H. Li, C. Li and H. Dai, "Collaborative Quickest Detection in Ad Hoc Networks with Delay Constraint – Part I: Two-node Network", *2008 Conference on Information Sciences and Systems (CISS)*, Princeton, NJ, Mar. 2008.
- C110. C. Li, H. Li and H. Dai, "Collaborative Quickest Detection in Ad Hoc Networks with Delay Constraint – Part II: Multi-node Network", *2008 Conference on Information Sciences and Systems (CISS)*, Princeton, NJ, Mar. 2008.
- C111. H. Li, C. Li and H. Dai, "Quickest Spectrum Sensing in Cognitive Radio", *2008 Conference on Information Sciences and Systems (CISS)*, Princeton, NJ, Mar. 2008.
- C112. Y. Zhang and H. Dai, "Distributed Estimation in Wireless Sensor Networks via Variational Message Passing," *2008 Conference on Information Sciences and Systems (CISS)*, Princeton, NJ, Mar. 2008.

- C113. H. Dai and H. Li, "Identifying Sufficient Statistics in Information Networks," *2008 Conference on Information Sciences and Systems (CISS)*, Princeton, NJ, Mar. 2008.
- C114. W. Li and H. Dai, "LADA algorithms: Performance lower bounds and cluster-based variant," *2007 Allerton Conference on Communication, Control and Computing*, Monticello, IL, Sept. 2007.
- C115. W. Li and H. Dai, "Location-aided fast distributed averaging," *2007 IEEE Statistical Signal Processing Workshop (SSP)*, Madison, Wisconsin, August 2007.
- C116. H. Zhang, N. B. Mehta, A. F. Molisch, J. Zhang, and H. Dai, "On the fundamentally asynchronous nature of interference in cooperative base station systems," *2007 IEEE International Conference on Communications (ICC)*, Glasgow, Scotland, June 2007.
- C117. W. Li and H. Dai, "Accelerating distributed consensus via lifting Markov chains," *2007 IEEE International Symposium on Information Theory (ISIT)*, Nice, France, June 2007.
- C118. W. Li and H. Dai, "Cluster-based fast distributed consensus," *2007 IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, Hawaii, April 2007.
- C119. H. Dai and Y. Zhang, "Consensus estimation via belief propagation," *2007 Conference on Information Sciences and Systems (CISS)*, The Johns Hopkins University, Baltimore, MD, March 2007.
- C120. Y. Zhang and H. Dai, "Dynamic self-calibration in collaborative wireless networks using belief propagation with Gaussian-particle filtering," *2007 Conference on Information Sciences and Systems (CISS)*, The Johns Hopkins University, Baltimore, MD, March 2007.
- C121. T. Chen, Z. Yu, Y. Peng, Y. Zhang, H. Dai, X. Liu, "A MIMO receiver SOC for CDMA applications," *IEEE International SOC Conference*, Austin, TX, Sept. 2006.
- C122. W. Li and H. Dai, "Energy efficient distributed detection via multi-hop transmission in sensor networks," *2006 Military Communications Conference (MILCOM)*, Washington D.C., Oct. 2006.
- C123. H. Dai and Q. Zhou, "Scheduling gain in spatial diversity systems: Asymptotic analysis," *2006 IEEE International Symposium on Information Theory (ISIT)*, Seattle, WA, July 2006.
- C124. W. Li and H. Dai, "Distributed detection of a deterministic signal in correlated Gaussian noise over MAC," *2006 IEEE International Symposium on Information Theory (ISIT)*, Seattle, WA, July 2006.
- C125. Q. Zhou and H. Dai, "Asymptotic analysis on spatial diversity versus multiuser diversity in wireless networks," *2006 IEEE International Conference on Communications (ICC)*, Istanbul, Turkey, June 2006.
- C126. H. Zhang, H. Dai and B. L. Hughes, "On the diversity-multiplexing tradeoff for ordered SIC receivers over MIMO channels," *2006 IEEE International Conference on Communications (ICC)*, Istanbul, Turkey, June 2006.
- C127. Y. Zhang and H. Dai, "A unitary space-time coding scheme for UWB systems and its application in wireless secure communications," *Proc. 2006 IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, Toulouse, France, May 2006.
- C128. H. Dai, "Distributed versus co-located MIMO systems with correlated fading and shadowing," *Proc. 2006 IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, Toulouse, France, May 2006.
- C129. Q. Zhou, H. Dai and H. Zhang, "Joint Tomlinson-Harashima precoding and scheduling for multiuser MIMO downlink with limited feedback," *IEEE Wireless Communications and Networking Conference (WCNC)*, Las Vegas, NV, April 2006.
- C130. H. Zhang and Q. Zhou, "Delay constrained multiuser scheduling schemes based on upper-layer performance," *IEEE Wireless Communications and Networking Conference (WCNC)*, Las Vegas, NV, April 2006.
- C131. H. Dai and Q. Zhou, "Asymptotic Analysis in MIMO Diversity Systems," *International Symposium on Intelligent Signal Processing and Communication Systems (ISPACS2005)*, HK, China, Dec. 2005.

- C132. H. Dai, "The Impact of Shadow Fading on the Outage Capacity and Multiuser Scheduling Gain of MIMO Systems," *International Symposium on Intelligent Signal Processing and Communication Systems (ISPACS2005)*, HK, China, Dec. 2005.
- C133. H. Zhang, H. Dai and Q. Zhou, "On the Diversity Order of Transmit Antenna Selection for Spatial Multiplexing Systems," *2005 IEEE Global Communications Conference (GLOBECOM)*, St. Louis, MO, Dec. 2005.
- C134. Y. Zhang and H. Dai, "Energy-Based Transmission Strategy Selection for Wireless Sensor Networks," *2005 IEEE Global Communications Conference (GLOBECOM)*, St. Louis, MO, Dec. 2005.
- C135. W. Li and H. Dai, "Distributed Detection of Correlated Signals in Large-Scale Sensor Networks," *2005 Allerton Conference on Communication, Control and Computing*, Monticello, IL, Sept. 2005.
- C136. H. Dai, "On the Duality between Outage Capacity and Multiuser Scheduling Gain for MIMO Systems and the Impact of Shadowing fading," *2005 Allerton Conference on Communication, Control and Computing*, Monticello, IL, Sept. 2005.
- C137. H. Zhang and H. Dai, "A Geometrical Analysis on Transmit Antenna Selection for Spatial Multiplexing Systems with Linear Receivers," *Proc. 2005 IEEE International Symposium on Information Theory (ISIT)*, Adelaide, Australia, Sept. 2005.
- C138. V. Goel and H. Dai, "Turbo-BLAST with Semi-Blind Co-Channel Interference Cancellation in Multicell MIMO Systems," *Proc. 2005 Fall IEEE Conference on Vehicular Technology (VTC)*, Dallas, TX, Sept. 2005.
- C139. W. Li and H. Dai, "Medium Access Control and Power Optimizations for Sensor Networks with Linear Receivers," *Proc. 2005 Conference on Information Sciences and Systems (CISS)*, The Johns Hopkins University, Baltimore, MD, March 2005.
- C140. Y. Zhang and H. Dai, "Selecting Optimal Transmission Strategies for Cooperative Sensor Networks," *Proc. 2005 Conference on Information Sciences and Systems (CISS)*, The Johns Hopkins University, Baltimore, MD, March 2005.
- C141. H. Zhang, H. Dai and Q. Zhou, "Base Station Cooperation for multiuser MIMO: Joint Transmission and BS Selection," *Proc. 2005 Conference on Information Sciences and Systems (CISS)*, The Johns Hopkins University, Baltimore, MD, March 2005.
- C142. W. Li and H. Dai, "Throughput and Energy Efficiency of Sensor Networks with Multiuser Receivers and Spatial Diversity," *Proc. 2005 IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, Philadelphia, PA, Mar. 2005.
- C143. P. Sudarshan, H. Dai, and B. L. Hughes, "Statistics-Based Antenna Selection for Multiple-Access MIMO Systems," **invited paper**, *Proc. 2004 Asilomar Conference on Signals, Systems, and Computers*, PACIFIC GROVE, CA, Nov. 2004.
- C144. H. Dai, L. Xiao and Q. Zhou, "Energy Efficiency of MIMO Transmission Strategies in Wireless Sensor Networks," **invited paper**, *Proc. 2004 International Conference on Computing, Communications and Control Technologies (CCCT)*, Austin, TX, Aug. 2004.
- C145. W. Li and H. Dai, "EXIT Chart Analysis of Turbo-BLAST Receivers in Rayleigh Fading Channels," *Proc. 2004 Fall IEEE Conference on Vehicular Technology (VTC)*, Los Angeles, CA, Sept. 2004.
- C146. Q. Zhou and H. Dai, "Joint Antenna Selection and Link Adaptation for MIMO Systems," *Proc. 2004 Fall IEEE Conference on Vehicular Technology (VTC)*, Los Angeles, CA, Sept. 2004.
- C147. H. Zhang and H. Dai, "Fast Transmit Antenna Selection Algorithms for MIMO Systems with Fading Correlation," *Proc. 2004 Fall IEEE Conference on Vehicular Technology (VTC)*, Los Angeles, CA, Sept. 2004.
- C148. H. Zhang and H. Dai, "On the Capacity of Distributed MIMO Systems," *Proc. 2004 Conference on Information Sciences and Systems (CISS)*, Princeton University, Princeton, NJ, March 2004.

- C149. Q. Zhou, H. Zhang and H. Dai, "Adaptive Spatial Multiplexing Techniques for Distributed MIMO Systems," *Proc. 2004 Conference on Information Sciences and Systems (CISS)*, Princeton University, Princeton, NJ, March 2004.
- C150. H. Dai and H. V. Poor, "Large-System Spectral Efficiency of Interference-Limited MIMO Systems," *Proc. 2003 IEEE Global Communications Conference (GLOBECOM)*, San Francisco, CA, Dec. 2003.
- C151. H. Dai, L. Mailaender, and H. V. Poor, "CDMA Cellular Downlink Transmission with Transmit Arrays and Power Control: Circuit-Switched and Packet-Switched Systems," *Proc. 2003 IEEE International Conf. on Communications (ICC)*, Anchorage, Alaska, May 2003.
- C152. H. Dai and H. V. Poor, "Iterative Multiuser Detection for DS-CDMA/MC-CDMA Powerline Communications," *Proc. 2003 Conference on Information Sciences and Systems (CISS)*, The Johns Hopkins University, Baltimore, MD, March 2003.
- C153. H. Dai, A. F. Molisch, and H. V. Poor: "Downlink Multiuser Capacity of Interference-Limited MIMO Systems," *Proc. 2002 IEEE 13th International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC)*, Lisbon, Portugal, Sept. 2002.
- C154. H. Dai and A. F. Molisch: "Multiuser Detection for Interference-Limited MIMO Systems," *Proc. 2002 Spring IEEE Vehicular Technology Conf. (VTC)*, CDROM, Birmingham, AB, May 2002.
- C155. H. Dai and H. V. Poor: "Sample-by-sample Adaptive Space-Time Processing for Multiuser Detection in Multipath CDMA Systems," *Proc. 2001 Fall IEEE Vehicular Technology Conf. (VTC)*, CDROM, Atlantic City, NJ, Oct. 2001.
- C156. H. Dai and H. V. Poor: "Iterative Multiuser Detection and Decoding for DMT VDSL Systems," *Proc. 2001 Conference on Information Sciences and Systems (CISS)*, The Johns Hopkins University, Baltimore, MA, March 2001.
- C157. H. Dai and H. V. Poor: "Iterative Space-Time Processing for Multiuser Detection in CDMA Systems," *Proc. 2000 IEEE Sixth International Symposium on Spread Spectrum Techniques and Applications (ISSSTA)*, vol.2, pp. 343-347, Parsippany, NJ, Sept. 2000.
- C158. H. Dai and H. V. Poor: "On Crosstalk mitigation in DMT VDSL with Impulse Noise", *IEEE CAS-COM Workshop on High-Speed Data over Local Loops and Cable*, Princeton University, Princeton, NJ, July 1999.
- C159. H. Dai and Z. Cao: "A Joint Speech Coding-Enhancement Algorithm for MBE Vocoder," *Proc. 1998 International Conference on Communication Technology (ICCT)*, vol.2, pp. S36-05-1-S36-05-4, Beijing, China, Oct. 1998.

PROFESSIONAL AND SCHOLARLY ACTIVITIES

- Asia-Pacific Artificial Intelligence Association (AAIA) Fellow, since 2021
- Qualcomm Faculty Award, 2019
- University Faculty Scholar, 2018
- IEEE Fellow, since 2017
- Area Editor, IEEE Transactions on Wireless Communications, 2022-now
- Executive Editorial Committee member, IEEE Transactions on Wireless Communications, 2017-2022
- Area Editor for Wireless Communications – I of IEEE Transactions on Communications, 2016-2021
- Associate Editor of IEEE Transactions on Communications, 2012-2015
- Associate Editor of IEEE Transactions on Signal Processing, 2009-2013
- Associate Editor of IEEE Transactions on Wireless Communications, 2007-2009
- Associate Editor of IEEE Signal Processing Magazine e-Newsletter, 2007-2009
- Associate Editor of EURASIP Journal on Advances in Signal Processing, 2006-2010

- Associate Editor of EURASIP Journal on Wireless Communications and Networking, 2005-2009
- Associate Editor of Journal of Communications and Networks, 2005-2009
- Guest Editor of special issue on Distributed Signal Processing Techniques for Wireless Sensor Networks, EURASIP Journal on Advances in Signal Processing, Jan. 2008
- Guest Editor of special issue on Theory and Applications in Multiuser/Multi-terminal Communications, EURASIP Journal on Wireless Communications and Networking, Aug. 2008
- Area TPC Chair of IEEE INFOCOM 2018-2025
- TPC Co-Chair of the Protocols and Cross-Layer Technologies Track of IEEE MASS 2022
- Distinguished TPC Member Award, IEEE INFOCOM 2016
- Lead Co-Chair of the Wireless Communications Symposium of IEEE Globecom 2014
- Co-Chair of the Communications Theory Symposium of IEEE ICC 2014
- Lead Co-Chair of the Signal Processing for Communications Symposium of IEEE Globecom 2013
- TPC Co-Chair of Modeling and Simulation Track of IEEE VTC 2005 Fall
- Member of Technical Program Committee for IEEE Conference on Computer Communications (INFOCOM), 2012-2017
- Member of Technical Program Committee for IEEE International Workshop on Signal Processing Advances for Wireless Communications (SPAWC), 2010-2012
- Member of Technical Program Committee for IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP), 2011-2013
- Member of Technical Program Committee for IEEE Conference on Communications (ICC), 2006-2009
- Member of Technical Program Committee for IEEE Global Communications Conference (GLOBECOM), 2004, 2006-2007
- Member of Technical Program Committee for IEEE Radio and Wireless Symposium (RWS), 2006-2008
- Member of Technical Program Committee for 2006 IEEE International Electro/Information Technology Conference (EIT)
- Member of Technical Program Committee for 2006 IEEE Information Theory Workshop (ITW)
- Member of Technical Program Committee for 2006 International Wireless Communications and Mobile Computing Conference (IWCMC)
- Member of Technical Program Committee for 2005 Fall IEEE Conference on Vehicular Technology (VTC)
- Member of Technical Program Committee for the Ninth International Symposium on Power Line Communications (ISPLC 2005)
- Member of Technical Program Committee for the Fourth IASTED International Multi-Conference on Wireless and Optical Communications 2004
- Member of Technical Program Committee, organizer and chair of invited sessions for 2004 Fall IEEE Conference on Vehicular Technology (VTC)
- Executive committee member of IEEE East North Carolina Section and local chapter chair of Signal Processing Society, 2013-2016
- Member of IEEE Signal Processing Society Technical Committee on Signal Processing for Communications and Networking (SPCOM), elected, 2010-2012
- National Science Foundation (NSF) panelist and reviewer for Directorate for Computer and Information Science & Engineering (CISE) and Directorate for Engineering (ENG)
- IEEE Senior Member review panelist
- Reviewer for US Army Research Office, Hongkong Research Grants Council

PATENTS

A. Bhuyan, I. Guvenc, H. Dai, *An Innovative Secure millimeter wave (mmWave) Machine to Machine (M2M) Communication Network for Operating Drones*, Provisional patent 2935-P14461US, Nov 5, 2019.

A. Molisch, M. V. Clark, H. Dai, M. Z. Win, and J. H. Winters, *Method and apparatus for reducing interference in multiple-input-multiple-output (MIMO) systems*, US Patent 7912014, Mar. 22, 2011 (Joint work with AT&T Labs).

THESES SUPERVISED

Hongyuan Zhang (Ph.D. 2006, Marvell Semiconductor, Inc., CA):
MIMO Communications Systems: Antenna Selection and Interference Mitigation - **2007 NC State Graduate School Dissertation Award (one per year)**

Vivek Goel (M.S. 2005, Broadcom, Inc., Bangalore, India):
Semi-blind Turbo Detection for Multiple-Input Multiple-Output Wireless Systems

Quan Zhou (Ph.D. 2006, Broadcom, Inc., CA):
Wireless Communications with MIMO Systems: Analysis and Practice

Wenjun Li (Ph.D. 2007, Qualcomm, Inc., NJ):
Distributed and Collaborative Information Processing in Wireless Sensor Networks

Yanbing Zhang (Ph.D. 2009, Broadcom, Inc., NJ):
Cooperative Communication and Information Processing in Distributed Wireless Networks

Nakul Navarange (M.S. 2012, Qualcomm, Inc., CA)
Energy Efficiency and Trade-off with Delay in Jamming-Resistant Collaborative Wireless Broadcast Networks

Chengzhi Li (Ph.D. 2012, Qualcomm, Inc., CA)
Analytical Study on Heterogeneous Systems

Yufan Huang (M.S. 2014, Google, Inc., CA)
Information Spreading in Mobile and Social Networks

Mani Pandian (Ph.D. 2014, Marvell Semiconductor, Inc., CA):
Optimal Resource Allocation in Cooperative Heterogeneous Networks

Wenbo Shen (Ph.D. 2015, Zhejiang University, China)
Physical Layer Signal Design and Control for Wireless Security

Xiaofan He (Ph.D. 2015, Wuhan University, China)
Surviving the Information Warfare: from Static Competition to Dynamic Game

Anuj Nayak (M.S. 2018, Qualcomm, Inc., CA)
Information Spreading in Dynamic Networks

Yufan Huang (Ph.D. 2019, Google, Inc., CA)
Spreading Processes in Complex Networks: Speed, Competition, and Privacy

Seyyedali Hosseinalipour (Ph.D. 2020, University of Buffalo, NY)
Efficient Network Planning and Design for Cloud, Interdependent, and UAV-assisted Networks - **2021 ECE Distinguished Dissertation Award (one per year)**

Srinjoy Chattopadhyay (Ph.D. 2020, Amazon, Inc., CA)

Optimizing and Controlling Spreading Processes in Multilayer Networks

Richeng Jin (Ph.D. 2020, Zhejiang University, China)

Privacy-Preserving Information Exchange in Collaborative Security, Crowdsensing, and Machine Learning

Ali Ramati (Ph.D. 2021, Qualcomm, Inc., CA)

On Applications of Optimization Techniques in UAV Communication, Resource Allocation, and Adversarial Attacks

Sung-Joon Maeng (Ph.D. 2022, NC State University, NC)

Energy Efficient and Secure Communication in UAV Networks

Ferdous Pervej (Ph.D. 2023, University of South California, CA)

Collaborative Edge and On-Device Learning in Wireless Networks under Resource Constraints

POSTDOC RESEARCHER SUPERVISED

Juan Liu (2012-2014, Ningbo University, China)

Jung Hoon Lee (2014-2015, Hankuk University of Foreign Studies, South Korea)

Xiaofan He (2016, Wuhan University, China)

Yavuz Yapici (2020, Qualcomm, Inc., NJ, USA)

Haichuang Ding (2021, Beijing Institute of Technology, China)

Richeng Jin (2021, Zhejiang University, China)

Ye Hu (2023, University of Miami, FL, USA)