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Prof. TING HE

RESEARCH INTEREST

Developing novel solutions in the space of distributed/decentralized learning, network inference and optimization, performance analysis, and resource allocation using techniques from combinatorial optimization, mixed integer programming, statistical inference, online learning, federated learning, stochastic optimization, and graph theory.

EDUCATION

2003-2007 MS/Ph.D. in Electrical & Computer Engineering, Cornell University
Thesis Title: *Nonparametric and Partially Nonparametric Statistical Inference in Wireless Sensor Networks*
Thesis Advisor: Prof. Lang Tong
GPA: 4.16 / 4.3

1999-2003 B.S. in Computer Science, Peking University, Beijing, China
Thesis Title: *Analysis of the multi-target mechanism in GNU debugger (GDB)*
Thesis Advisor: Prof. Xu Cheng
GPA of major courses: 3.90 / 4.0

EMPLOYMENT HISTORY

2016-present **Associated Professor**, Computer Science and Engineering, Pennsylvania State University
Network science, network security, statistical inference, performance analysis and optimization, machine learning

2007-2016 **Research Staff Member,** IBM
Fundamental and application-oriented research on wireless networking, network modeling, network analytics, network inference, and network security

2003-2007 **Graduate Research Assistant**, Cornell University
Thesis research on statistical inference in wireless sensor networks and information theory

SCHOLASTIC AWARDS AND ACHIEVEMENTS

2021 DAIS Awards for Military Impact and Commercial Prosperity of Coreset Research
2021 IEEE Communications Society Leonard G. Abraham Prize
2020 Best Paper Finalist at *IEEE SmartGridComm*
2020 Distinguished TPC Member Award at *IEEE INFOCOM*
2018 Distinguished TPC Member Award at *IEEE INFOCOM*
2017 N2Women: Rising Stars in Networking and Communications
2016 IBM Research Division Award for Scientific Advances in Quality of Information
2016 Distinguished TPC Member Award at *IEEE INFOCOM*
2015 Most Collaboratively Complete Publications Award by *International Technology Alliance (ITA) in Network and Information Sciences*
2015 Kenneth C. Sevcik Outstanding Student Paper Award at *ACM SIGMETRICS*
2013 IBM Research Outstanding Contributor Award
2013 Best Paper Award at *IEEE ICDCS*
2013 Best Paper Finalist at *ACM IMC*
2013 Best Student Paper at *International Technology Alliance (ITA) Annual Fall Meeting*
2009 IBM Research Outstanding Contributor Award

2005	Best Student Paper Award at *IEEE ICASSP*
2003	Excellent Student Award of Beijing, China
2003	Outstanding Graduate of Beijing, China
2000-2002	Winner of Excellent Student Award of Peking University for 3 years
2000-2002	Recipient of Canon, Sony, Yang-Wang Academician Scholarships

RESEARCH PROJECTS

Convergence Accelerator: Track G: Securely Operating Through 5G Infrastructure – Phase I (NSF/DoD, $750,000, PSU share $200,000, 8/1/2022-7/31/2023)

Partner with IBM as subawardee to develop innovative solutions and low-fidelity prototypes to enable mission-critical communications to be securely carried over indigenous 5G networks.

Inference and Control in Overlay Networks (NSF, $600,000, PSU share $299,992, 10/1/2021-9/30/2025)

Developed network tomography algorithms to infer the routing structure and state of a non-cooperative underlay network from observations of an overlay network, and control algorithms to optimize the performance of overlay services.

Adversarial Network Reconnaissance in Software Defined Networking (NSF, $575,000, 3/15/2020-2/28/2024)

Developed reconnaissance techniques to infer internal policies and states of a software defined network from compromised hosts/switches, and demonstrated the impact of the reconnaissance via designing intelligent attacks.

Coupled cAscade Modeling, Prevention, and Recovery (CAMPR): When Graph Theory Meets Trajectory Sensitivity (NSF, $999,000, 9/1/2018-8/31/2023)

Developed methods to model cascading failures in interdependent power-communication networks, minimize the damage through preventive control, and facilitate recovery through failure localization and prevention.

Data Reduction for Communication-efficient Machine Learning (ARL – DAIS ITA, $352,209, 1/18/2018-9/14/2021)

Developed data reduction algorithms with provable performance guarantees for approximate machine learning in resource-constrained edge computing environments, with focus on coreset construction.

Adversarial Network Tomography: Inferring Network State from Manipulated End-to-end Measurements (NSF, $170,000, 10/1/2018-9/30/2021)

Quantify the vulnerability of existing network tomography algorithms in an adversarial setting, by developing optimal attack strategies and analyzing their impacts.

Network Tomography in Multi-domain Networks (ARL – NIS ITA, $1,500,000, 2013-2016)

Developed theory and algorithms for unique identification of link/node states from end-to-end measurements, including: (i) verifiable conditions and efficient network planning (monitor placement, path construction) algorithms to identify additive link metrics, (ii) novel measure and efficient algorithms to quantify network capability in localizing failures from Boolean path states, (iii) efficient algorithms to allocate probes for most accurately inferring link parameters from stochastic path measurements.

Joint Routing and Resource Allocation in Mobile Edge Computing (ARL – NIS ITA, $1,200,000, 2013-2016)

Developed theory and algorithms for: (i) optimal service placement, service migration, and request routing for services at the network edge, (ii) optimal content placement and load balancing for caches at the network edge.

Measurement Science in Cloud Computing (NIST, $1,500,000, 2010-2013)

Developed theory and algorithms for measurement-based adaptive management of cloud computing systems, including: (i) end-host-based learning of shortest path using coupled or decoupled probing, (ii) tracking Markovian time-varying link states using adaptive sampling, (iii) task scheduling under synchronization constraints and dynamic server availability.

Controlled Mobility in Delay-Tolerant Networks (ARL – NIS ITA, $600,000, 2009-2011)

Developed algorithms for dynamically controlling mobile relays (data ferries) to provide delay-tolerant communications between partitioned mobile nodes based on partial observations.

Semi-non-parametric Stepping-Stone Detection

Developed detector and performance analysis for detecting encrypted stepping-stone attacks from timestamps of incoming/outgoing packet flows in the presence timing perturbation and chaff packets.

Non-parametric Change Detection

Developed detector and performance analysis for detecting and localizing changes in the unknown distribution of sensor alarms in 2D space.

BOOKS

1. M. Srivatsa, T. Abdelzaher, **T. He** (Eds.), "Artificial Intelligence for Edge Computing," Springer Nature, June 2023
2. **T. He**, L. Ma, A. Swami, and D. Towsley, "Network Tomography: Identifiability, Measurement Design, and Network State Inference," Cambridge University Press, May 2021

BOOKS CHAPTERS

1. H. Lu, **T. He**, and S. Wang, "Coreset-based Data Reduction for Machine Learning at the Edge," In M. Srivatsa, T. Abdelzaher, and T. He (Eds.), *Artificial Intelligence for Edge Computing*, Springer Nature, 2023

2. S. Wang and **T. He**, "Dynamic Placement of Services at the Edge," In M. Srivatsa, T. Abdelzaher, and T. He (Eds.), *Artificial Intelligence for Edge Computing*, Springer Nature, 2023

3. **T. He** and S. Wang, "Joint Service Placement and Request Scheduling at the Edge," In M. Srivatsa, T. Abdelzaher, and T. He (Eds.), *Artificial Intelligence for Edge Computing*, Springer Nature, 2023

JOURNAL PUBLICATIONS

1. Y. Huang, Y. Lin, and **T. He**, "Optimized Cross-Path Attacks via Adversarial Reconnaissance," *Proceedings of the ACM on Measurement and Analysis of Computing Systems*, Vol. 7, no. 3, article 58, Dec. 2023
2. B-S. Kim, B-H. Lim, B. Suh, S. Ha, **T. He**, B. Shah, and K-I. Kim, "Enabling Grant-free URLLC for AoI Minimization in RAN-Coordinated 5G Health Monitoring System," *IEEE Internet of Things Journal*, vol. 10, no. 19, 17356-17368, Oct. 2023
3. T. Xie, S. Thakkar, **T. He**, P. McDaniel, and Q. Burke, "Joint Caching and Routing in Cache Networks with Arbitrary Topology," *IEEE Transactions on Parallel and Distributed Systems*, vol. 34, no. 8, pp. 2237-2250, Aug. 2023
4. C-C. Chiu, X. Zhang, **T. He**, S. Wang, and A. Swami, "Laplacian Matrix Sampling for Communication-efficient Decentralized Learning," *IEEE Journal on Selected Areas in Communications – Special Issue on Communication-Efficient Distributed Learning over Networks,* vol. 41, no. 4, pp. 887-901, Apr. 2023
5. S. Gharebaghi, N. R. Chaudhuri, **T. He**, and T. La Porta, "An Approach for Fast Cascading Failure Simulation in Dynamic Models of Power Systems," *Applied Energy*, vol. 332, pp. 120534, Feb. 2023
6. T. Xie, N. Nambiar, **T. He**, and P. McDaniel, "Attack Resilience of Cache Replacement Policies: A Study Based on TTL Approximation," *IEEE/ACM Transactions on Networking,* vol. 30, no. 6, pp.

2433-2447, Dec. 2022

7. B. Kim, B. Shah, **T. He**, and K. Kim, "A Survey on Analytical Models for Dynamic Resource Management in Wireless Body Area Networks," *Ad Hoc Networks*, Vol. 135, pp. 102936, Oct. 2022
8. H. Liu, **T. He**, S. Wang, C. Liu, M. Mahdavi, V. Narayanan, K. S. Chan, and S. Pasteris, "Communication-efficient k-Means for Edge-based Machine Learning," *IEEE Transactions on Parallel and Distributed Systems,* vol. 33, no. 10, pp. 2509-2523, Oct. 2022
9. Y. Huang, **T. He**, N. R. Chaudhuri, and T. La Porta, "Line State Estimation under Cyber-Physical Attacks: Theory and Algorithms," *IEEE Transactions on Smart Grid*, vol. 13, no. 5, pp. 3760-3773, Sep. 2022
10. V. Farhadi, S. G. Vennelaganti, **T. He**, N. Chaudhuri, and T. La Porta, "Improvement of SCADA-based Preventive Control under Budget Constraints," *IEEE Transactions on Network Sciences and Engineering*, vol. 9, no. 4, pp. 2601-2616, Jul. 2022
11. Y. Huang, **T. He**, N. R. Chaudhuri, and T. La Porta, "Preventing Outages under Coordinated Cyber-Physical Attack with Secured PMUs," *IEEE Transactions on Smart Grid*, vol. 13, no. 4, pp. 3160-3173, Jul. 2022
12. Q. Burke, P. McDaniel, T. La Porta, M. Yu, and **T. He**, "Misreporting Attacks against Load Balancers in Software-Defined Networking," accepted to *Springer Mobile Networks and Applications (MONET)*, Dec. 2021
13. M. Yu, T. Xie, **T. He**, P. McDaniel, and Q. K. Burke, "Flow Table Security in SDN: Adversarial Reconnaissance and Intelligent Attacks," *IEEE/ACM Transactions on Networking*, vol. 29, no. 6, pp. 2793-2806, Dec. 2021
14. S. Gharebaghi, S. G. Vennelaganti, N. R. Chaudhuri, **T. He**, and T. La Porta, "Inclusion of Pre-Existing Undervoltage Load Shedding Schemes in AC-QSS Cascading Failure Models," *IEEE Transactions on Power Systems (TPWRS),* vol. 36, no. 6, pp. 5645-5656, Nov. 2021
15. C-C. Chiu and **T. He**, "Stealthy DGoS Attack: DeGrading of Service under the Watch of Network Tomography," *IEEE/ACM Transactions on Networking*, vol. 29, no. 3, pp. 1294-1307, Jun. 2021
16. C-C. Chiu and **T. He**, "Stealthy DGoS Attack against Network Tomography: The Role of Active Measurements," *IEEE Transactions on Network Science and Engineering*, vol. 8, no. 2, pp. 1745-1758, Apr. 2021
17. V. Farhadi, F. Mehmeti, **T. He**, T. La Porta, H. Khamfroush, S. Wang, K. S. Chan, and K. Poularakis, "Service Placement and Request Scheduling for Data-intensive Applications in Edge Clouds," *IEEE/ACM Transactions on Networking*, vol. 29, no. 2, pp. 779-792, Apr. 2021
18. L. Wang, L. Jiao, **T. He**, J. Li, and H. Bal, "Service Placement for Collaborative Edge Applications," *IEEE/ACM Transactions on Networking*, vol. 29, no. 1, pp. 34-47, Feb. 2021
19. A. Munir, **T. He**, R. Raghavendra, F. Le, and A. X. Liu, "Network Scheduling and Compute Resource Aware Task Placement in Datacenters," *IEEE/ACM Transactions on Networking,* vol. 28, no. 6, pp. 2435-2448, Dec. 2020
20. H. Lu, M-J. Li, **T. He**, S. Wang, V. Narayanan, and K. S. Chan, "Robust Coreset Construction for Distributed Machine Learning," *IEEE Journal on Selected Areas in Communications – Special Issue on Advances in Artificial Intelligence and Machine Learning for Networking,* vol. 38, no. 10, pp. 2400-2417, Oct. 2020
21. Y. Lin, **T. He**, S. Wang, K. Chan, and S. Pasteris, "Looking Glass of NFV: Inferring the Structure and State of NFV Network from External Observations," *IEEE/ACM Transactions on Networking*, vol. 28, no. 4, pp. 1477-1490, Aug. 2020

22. N. Bartolini, **T. He**, V. Arrigoni, A. Massini, F. Trombetti, and H. Khamfroush, "On Fundamental Bounds on Failure Identifiability by Boolean Network Tomography," *IEEE/ACM Transactions on Networking*, vol. 28, no. 2, pp. 588-601, Apr. 2020
23. S. Wang, R. Urgaonkar, M. Zafer, **T. He,** K. Chan, and K. Leung, "Dynamic Service Migration in Mobile Edge Computing based on Markov Decision Process," *IEEE/ACM Transactions on Networking*, vol. 27, no. 3, pp. 1272-1288, Jun. 2019
24. D. Z. Tootaghaj, N. Bartolini, H. Khamfroush, **T. He**, N. R. Chaudhuri, and T. La Porta, "Mitigation and Recovery from Cascading Failures in Interdependent Networks under Uncertainty," *IEEE Transactions on Control of Network Systems,* vol. 6, no. 2, pp. 501-514, Jun. 2019
25. S. Wang, T. Tuor, T. Salonidis, K.K. Leung, C. Makaya, **T. He**, and K. Chan, "Adaptive Federated Learning in Resource Constrained Edge Computing Systems," *IEEE Journal on Selected Areas in Communications, Special Issue on Artificial Intelligence and Machine Learning for Networking and Communications*, vol. 37, no. 6, pp. 1205-1221, Jun. 2019 (**IEEE Communications Society Leonard G. Abraham Prize**)
26. S. Achleitner, N. Bartolini, **T. He**, T. La Porta, and D. Z. Tootaghaj, "Fast Network Configuration in Software Defined Networking," *IEEE Transactions on Network and Service Management*, vol. 15, no. 4, pp. 1249-1263, Dec. 2018
27. S. Shukla, O. Bhardwaj, A. Abouzeid, T. Salonidis, and **T. He**, "Proactive Retention-Aware Caching with Multi-path Routing for Wireless Edge Networks," *IEEE Journal on Selected Areas in Communications, Special Issue on Caching for Communication Systems and Networks*, vol. 36, no. 6, pp. 1286-1299, Jun. 2018
28. **T. He**, E. N. Ciftcioglu, S. Wang, and K. S. Chan, "Location Privacy in Mobile Edge Clouds: A Chaff-based Approach," *IEEE Journal on Selected Areas in Communications, Special Issue on Emerging Technologies in Software-driven Communication*, vol. 35, no. 11, pp. 2625-2636, Nov. 2017
29. **T. He**, A. Gkelias, L. Ma, K. K. Leung, A. Swami, and D. Towsley, "Robust and Efficient Monitor Placement for Network Tomography in Dynamic Networks," *IEEE/ACM Transactions on Networking*, vol. 25, no. 3, pp. 1732-1745, Jun. 2017
30. M. Dehghan, B. Jiang, A. Seetharam, **T. He**, T. Salonidis, J. Kurose, D. Towsley, and R. Sitaraman, "On the Complexity of Optimal Request Routing and Content Caching in Heterogeneous Cache Networks," *IEEE/ACM Transactions on Networking*, vol. 25, no. 3, pp. 1635-1648, Jun. 2017
31. S. Wang, R. Urgaonkar, **T. He**, K. Chan, M. Zafer, and K. K. Leung, "Dynamic Service Placement for Mobile Micro-Clouds with Predicted Future Costs," *IEEE Transactions on Parallel and Distributed Systems*, vol. 28, no. 4, pp. 1002-1016, Apr. 2017
32. L. Ma, **T. He,** A. Swami, D. Towsley, and K. K. Leung, "Network Capability in Localizing Node Failures via End-to-End Path Measurements," *IEEE/ACM Transactions on Networking*, vol. 25, no. 1, pp. 434-450, Feb. 2017
33. L. Ma, **T. He**, A. swami, D. Towsley, and K.K. Leung, "On Optimal Monitor Placement for Localizing Node Failures via Network Tomography," *Elsevier Performance Evaluation, Special Issue: Performance 2015,* vol. 91, pp. 16-37, Sep. 2015
34. R. Urgaonkar, S. Wang, **T. He**, M. Zafer, K. Chan, and K.K. Leung, "Dynamic Service Migration and Workload Scheduling in Edge-Clouds," *Elsevier Performance Evaluation, Special Issue: Performance 2015*, vol. 91, pp. 205-228, Sep. 2015
35. L. Ma, **T. He**, K. Leung, A. Swami, and D. Towsley, "Inferring Link Metrics from End-to-End Path Measurements: Identifiability and Monitor Placement," *IEEE/ACM Transactions on Networking,* vol.

22, no. 4, pp. 1351-1368, Jun. 2014

36. A. Anandkumar, **T. He**, C. Bisdikian, and D. Agrawal, "Seeing through Black Boxes: Tracking Transactions through Queues under Monitoring Resource Constraints," *Elsevier Performance Evaluation*, vol. 70, no. 12, pp. 1090-1110, Dec. 2013
37. W. Wei, **T. He**, C. Bisdikian, D. Goeckel, B. Jiang, L. Kaplan, and D. Towsley, "Impact of In-network Aggregation on Target Tracking Quality under Network Delays," *IEEE Journal of Selected Areas in Communications, Special Issue on In-Network Computation: Exploring the Fundamental Limits,* vol. 31, no. 4, pp. 808-818, Apr. 2013
38. S. Marano, V. Matta , **T. He**, and L. Tong, "The Embedding Capacity of Information Flows under Renewal Traffic," *IEEE Transactions on Information Theory*, vol. 59, no. 3, pp. 1724-1739, Mar. 2013
39. A. Agaskar, **T. He**, and L. Tong, "Distributed Detection of Multi-hop Information Flows with Fusion Capacity Constraints," *IEEE Transactions on Signal Processing*, vol. 58, no. 6, pp. 3373-3383, Jun. 2010
40. D. Verma, B. Ko, P. Zerfos, K. Lee, **T. He**, M. Duggan, A. Swami, N. Sofra, "Understanding the Quality of Monitoring for Network Management," *The Computer Journal: Special Issue on ITA*, vol. 53, no. 5, pp. 541-550, Jun. 2009
41. A. Anandkumar, C. Bisdikian, **T. He**, and D. Agrawal, "Selectively Retrofitting Monitoring in Distributed Systems," *ACM SIGMETRICS Performance Evaluation Review*, vol. 37, no. 2, pp. 6-8, Sep. 2009
42. **T. He** and L. Tong, "Detection of Information Flows", *IEEE Transactions on Information Theory*, vol. 54, no. 11, pp. 4925-4945, Nov. 2008
43. **T. He** and L. Tong, "Distributed Detection of Information Flows", *IEEE Transactions on Information Forensics and Security,* Special Issue on Statistical Methods for Network Security and Forensics, vol. 3, no. 3, pp. 390-403, Sep. 2008
44. P. Venkitasubramaniam, **T. He**, and L. Tong, "Anonymous Networking amidst Eavesdroppers", *IEEE Transactions on Information Theory, Special Issue on Information-Theoretic Security*, vol. 54, no. 6, pp. 2770-2784, Jun. 2008
45. P. Venkitasubramaniam, **T. He**, L. Tong, and S. Wicker, "Towards an Analytical Approach to Anonymous Wireless Networking," *IEEE Communications Magazine: Special Issue on Security in Ad Hoc Wireless Networks,* vol. 46, no. 2, pp. 140-146, Feb. 2008
46. **T. He** and L. Tong, "Detecting Encrypted Stepping-Stone Connections", *IEEE Transactions on Signal Processing,* vol. 55, no. 5, pp. 1612-1623, May *2007*
47. **T. He,** S. Ben-David, and L. Tong, "Nonparametric Change Detection and Estimation in Large Scale Sensor Networks", *IEEE Transactions on Signal Processing,* vol. 54, no. 4, pp. 1204-1217, Apr. 2006

CONFERENCES AND WORKSHOPS

1. Y. Huang, Y. Lin, and **T. He**, "Optimized Cross-Path Attacks via Adversarial Reconnaissance," *ACM Sigmetrics*, Jun. 2024
2. T. Xie, S. Thakkar, **T. He**, N. Bartolini, and P. McDaniel, "Host-based Flow Table Size Inference in Multi-hop SDN," *IEEE Globecom*, Dec. 2023
3. Y. Huang and **T. He**, "Overlay Routing Over an Uncooperative Underlay," *ACM MobiHoc*, Oct. 2023
4. V. Farhadi, T. La Porta, and **T. He**, "5G Multi-numerology Applications in Power Distribution Systems," *IEEE MASS*, Sept. 2023
5. V. Farhadi, T. La Porta, **T. He**, N. R. Chaudhuri, "Resource Allocation in 5G Multi-tenancy Network Slicing for Balancing Distribution Power Systems," *IEEE MASS*, Oct. 2022
6. T. Xie, S. Thakkar, **T. He**, P. McDaniel, and Q. Burke, "Joint Caching and Routing in Cache Networks

with Arbitrary Topology," *IEEE ICDCS*, Jul. 2022

7. Y. Huang, **T. He**, N. R. Chaudhuri, and T. La Porta, "Preventing Outages under Coordinated Cyber-Physical Attack with Secured PMUs," *IEEE SmartGridComm*, Oct. 2021
8. V. Farhadi, S. G. Vennelaganti, **T. He**, N. R. Chaudhuri, and T. La Porta, "Budget-Constrained Reinforcement of SCADA for Cascade Mitigation," *IEEE ICCCN*, Jul. 2021
9. S. Gharebaghi, S. G. Vennelaganti, N. R. Chaudhuri, **T. He**, and T. La Porta, "A More Realistic AC-QSS Cascading Failure Model with Decentralized UVLS and Centralized RAS," *IEEE Power & Energy Society General Meeting (PESGM)*, Jul. 2021
10. Y. Lin, **T. He**, and G. Pang, "Queuing Network Topology Inference Using Passive Measurements," *IFIP Networking*, Jun. 2021
11. T. Xie, **T. He**, P. McDaniel, and N. Nambiar, "Attack Resilience of Cache Replacement Policies," *IEEE INFOCOM*, May 2021
12. S. Pasteris, **T. He**, F. Vitale, S. Wang, and M. Herbster, "Online Learning of Facility Locations," *Algorithmic Learning Theory*, Mar. 2021
13. C. Chiu and **T. He**, "Stealthy DGoS Attack under Passive and Active Measurements," *IEEE Globecom*, Dec. 2020
14. Y. Huang, **T. He**, N. R. Chaudhuri, and T. La Porta, "Power Grid State Estimation under General Cyber-Physical Attacks," *IEEE SmartGridComm*, Nov. 2020 (**Best Paper Finalist**)
15. Q. Burke, P. McDaniel, T. La Porta, M. Yu, and **T. He**, "Misreporting Attacks in Software-Defined Networking," *International Conference on Security and Privacy in Communication Networks (SecureComm 2020)*, Oct. 2020
16. S. Gharebaghi, S. G. Vennelaganti, N. R. Chaudhuri, **T. He**, and T. La Porta, "Solving the Divergence Problem in AC-QSS Cascading Failure Model by Introducing the Effect of a Realistic UVLS Scheme," *IEEE PES Innovative Smart Grid Technologies Europe (ISGT-Europe),* Oct. 2020
17. H. Lu, C. Liu, **T. He**, S. Wang, and K. S. Chan, "Sharing Models or Coresets: A Study based on Membership Inference Attack," *International Workshop on Federated Learning for User Privacy and Data Confidentiality in Conjunction with ICML 2020*, Jul. 2020
18. H. Lu, **T. He**, S. Wang, C. Liu, M. Mahdavi, V. Narayanan, K. S. Chan, and S. Pasteris, "Communication-efficient k-Means for Edge-based Machine Learning," *IEEE ICDCS*, Jul. 2020
19. H. Lu, C. Liu, S. Wang, **T. He**, V. Narayanan, K. S. Chan, and S. Pasteris, "Joint Coreset Construction and Quantization for Distributed Machine Learning," *IFIP Networking*, Jun. 2020
20. Y. Lin, **T. He**, S. Wang, and K. S. Chan, "Waypoint-based Topology Inference," *IEEE ICC*, Jun. 2020
21. S. Stein, M. Ochal, I.-A. Moisoiu, E. Gerding, R. Ganti, **T. He**, and T. La Porta, "Strategyproof Reinforcement Learning for Online Resource Allocation," *AAMAS*, May 2020
22. C-C. Chiu and **T. He**, "Stealthy DGoS Attack: DeGrading of Service under the Watch of Network Tomography," *IEEE INFOCOM*, Apr. 2020
23. M. Yu, **T. He**, P. McDaniel, and Q. K. Burke, "Flow Table Security in SDN: Adversarial Reconnaissance and Intelligent Attacks," *IEEE INFOCOM*, Apr. 2020
24. H. Lu, M-J Li, **T. He**, S. Wang, V. Narayanan, and K. S. Chan, "Robust Coreset Construction for Distributed Machine Learning," *IEEE Globecom*, Dec. 2019
25. B. Ko, S. Wang, **T. He**, and D. Conway-Jones, "On Data Summarization for Machine Learning in Multi-Organization Federations," *DAIS workshop at IEEE SMARTCOMP*, Jun. 2019
26. Y. Lin, **T. He**, S. Wang, K. Chan, and S. Pasteris, "Multicast-based Weight Inference in General Network Topologies," *IEEE ICC*, May 2019

27. D. Z. Tootaghaj, S. Achleitner, **T. He**, N. Bartolini, and T. La Porta, "A Minimally Disruptive Rule Update Approach in Software Defined Networking," *IFIP Networking* (poster), May 2019
28. V. Farhadi, F. Mehmeti, T. La Porta, **T. He**, H. Khamfroush, S. Wang, and K. S. Chan, "Service Placement and Request Scheduling for Data-intensive Applications in Edge Clouds," *IEEE INFOCOM*, Apr. 2019
29. S. Pasteris, S. Wang, M. Herbster, and **T. He**, "Service Placement with Provable Guarantees in Heterogeneous Edge Computing Systems," *IEEE INFOCOM*, Apr. 2019
30. Y. Lin, **T. He**, S. Wang, K. S. Chan, and S. Pasteris, "Looking Glass of NFV: Inferring the Structure and State of NFV Network from External Observations," *IEEE INFOCOM*, Apr. 2019
31. D. Z. Tootaghaj, T. La Porta, and **T. He**, "Modeling, Monitoring, and Scheduling Techniques for Network Recovery from Massive Failures," *IFIP/IEEE International Symposium on Integrated Network Management (IM) – Dissertation Papers*, Apr. 2019
32. M. Ochal, S. Stein, F. Bi, M. Cook, E. Gerding, **T. He**, and T. La Porta, "Online Mechanism Design using Reinforcement Learning for Cloud Resource Allocation," *The AAMAS-IJCAI Workshop on Agents and Incentives in Artificial Intelligence (AI^3)*, Jul. 2018
33. **T. He**, H. Khamfroush, S. Wang, T. La Porta, and S. Stein, "It's Hard to Share: Joint Service Placement and Request Scheduling in Edge Clouds with Sharable and Non-sharable Resources," *IEEE ICDCS*, Jul. 2018
34. L. Wang, L. Jiao, **T. He**, J. Li, and M. Muhlhauser, "Service Entity Placement for Social Virtual Reality Applications in Edge Computing," *IEEE INFOCOM*, Apr. 2018
35. S. Wang, T. Tuor, T. Salonidis, K. K. Leung, **T. He**, and K. S. Chan, "When Edge Meets Learning: Adaptive Control for Resource-Constrained Distributed Machine Learning," *IEEE INFOCOM*, Apr. 2018
36. **T. He**, "Distributed Link Anomaly Detection via Partial Network Tomography," *IFIP Performance*, Nov. 2017
37. D. Z. Tootaghaj, **T. He**, and T. La Porta, "Parsimonious Tomography: Optimizing Cost-Identifiability Trade-off for Probing-based Network Monitoring," *IFIP Performance*, Nov. 2017
38. S. Shukla, O. Bhardwaj, A. A. Abouzeid, T. Salonidis, and **T. He**, "Hold'em Caching: Proactive Retention-Aware Caching with Multi-path Routing for Wireless Edge Networks," *ACM MobiHoc*, Jul. 2017
39. **T. He**, E. N. Ciftcioglu, S. Wang, and K. S. Chan, "Location Privacy in Mobile Edge Clouds," *IEEE ICDCS* (short paper), Jun. 2017
40. N. Bartolini, **T. He**, and H. Khamfroush, "Fundamental Limits of Failure Identifiability by Boolean Network Tomography," *IEEE INFOCOM*, Apr. 2017
41. A. Munir, **T. He**, R. Raghavendra, F. Le, and A. Liu, "Network Scheduling Aware Task Placement in Datacenters," *ACM CoNext*, Dec. 2016
42. **T. He**, N. Bartolini, H. Khamfroush, I. Kim, L. Ma, and T. La Porta, "Service Placement for Detecting and Localizing Failures Using End-to-End Observations," *IEEE ICDCS*, Jun. 2016
43. **T. He**, L. Ma, A. Gkelias, K.K. Leung, A. Swami, and D. Towsley, "Robust Monitor Placement for Network Tomography in Dynamic Networks," *IEEE INFOCOM*, Apr. 2016
44. A. A. Rocha, M. Dehghan, T. Salonidis, **T. He**, and D. Towsley, "SCA: A Data Stream Caching Algorithm," *CCDWN*, Dec. 2015
45. C. Liu, **T. He**, A. Swami, D. Towsley, T. Salonidis, A. I. Bejan, and P. Yu, "Multicast vs. Unicast for Loss Tomography on Tree Topologies," *IEEE MILCOM*, Oct. 2015

46. S. Wang, K. Chan, R. Urgaonkar, **T. He**, and K. K. Leung, "Emulation-based Study of Dynamic Service Placement in Mobile Micro-Clouds," *IEEE MILCOM*, Oct. 2015
47. E. N. Ciftcioglu, K. Chan, R. Urgaonkar, S. Wang, and **T. He**, "Security-aware Service Migration for Tactical Mobile Micro-Clouds," *IEEE MILCOM*, Oct. 2015
48. **T. He**, C. Liu, A. Swami, D. Towsley, T. Salonidis, A.I. Bejan, and P. Yu, "Fisher Information-based Experiment Design for Network Tomography," *ACM SIGMETRICS*, Jun. 2015 (**Outstanding Student Paper**)
49. S. Wang, R. Urgaonkar, K. Chan, **T. He**, M. Zafer, and K.K. Leung, "Dynamic Service Placement for Mobile Micro-Clouds with Predicted Future Costs," *IEEE ICC*, Jun. 2015
50. S. Wang, R. Urgaonkar, M. Zafer, K. S. Chan, **T. He**, and K. K. Leung, "Dynamic Service Migration in Mobile Edge-Clouds," *IFIP Networking,* May 2015
51. M. Dehghan, A. Seetharam, B. Jiang, **T. He**, T. Salonidis, J. Kurose, D. Towsley, and R.K. Sitaraman, "On the Complexity of Optimal Joint Caching and Routing in Hybrid Networks," *IEEE INFOCOM*, Apr. 2015
52. L. Ma, **T. He**, A. Swami, D. Towsley, K.K. Leung, and J. Lowe, "Node Failure Localization via Network Tomography," *ACM IMC*, Nov. 2014
53. M. Dehghan, A. Seetharam, **T. He**, T. Salonidis, J. Kurose, and D. Towsley, "Optimal Caching and Routing in Hybrid Networks," *IEEE MILCOM*, Nov. 2014
54. S. Wang, R. Urgaonkar, **T. He**, M. Zafer, K. Chan, and K.K. Leung, "Mobility-induced Service Migration in Mobile Micro-Clouds," *IEEE MILCOM*, Nov. 2014
55. S. Tati, S. Silvestri, **T. He**, and T. La Porta, "Robust Network Tomography in the Presence of Failures," *IEEE ICDCS*, Jun. 2014
56. L. Ma, **T. He**, K. Leung, A. Swami, and D. Towsley, "Monitor Placement for Maximal Identifiability in Network Tomography," *IEEE INFOCOM*, Apr. 2014
57. L. Ma, **T. He**, K. K. Leung, A. Swami, and D. Towsley, "Link Identifiability in Communication Networks with Two Monitors," *IEEE Globecom*, Dec. 2013
58. M. Dehghan, D. Towsley, D. Goeckel, and **T. He**, "Inferring Military Activity in Hybrid Networks through Cache Behavior," *IEEE MILCOM*, Nov. 2013
59. L. Ma, **T. He**, K. Leung, A. Swami, and D. Towsley, "Identifiability of Link Metrics based on End-to-End Path Measurements," *ACM IMC*, Oct. 2013 (**Best Paper Nominee**)
60. L. Ma, **T. He**, K. K. Leung, D. Towsley, and A. Swami, "Efficient Identification of Additive Link Metrics via Network Tomography," *IEEE ICDCS*, Jul. 2013 (**Best Paper**)
61. Y. Ji, **T. He**, J. Tan, K-W. Lee, L. Zhang, and L. Tong, "Improving Multi-Job MapReduce Scheduling in an Opportunistic Environment," *IEEE CLOUD*, Jun. 2013
62. **T. He**, D. Goeckel, R. Raghavendra, and D. Towsley, "Endhost-based Shortest Path Routing in Dynamic Networks: An Online Learning Approach," *IEEE INFOCOM*, Apr. 2013
63. Q. Wang, **T. He**, K-C Chen, J. Wang, B. Ko, Y. Lin, and K-W. Lee, "Dynamic Spectrum Allocation under Cognitive Cell Network for M2M Applications," *IEEE Asilomar*, Nov. 2012
64. **T. He**, S. Chen, H. Kim, L. Tong, and K-W. Lee, "Scheduling Parallel Tasks onto Opportunistically Available Cloud Resources," *IEEE CLOUD*, Jun. 2012
65. Y. Zhao, Z. Zhang, **T. He**, A. X. Liu, L. Guo, and B. Fang, "A Task-based Model for the Lifespan of Peer-to-Peer Swarms," *IFIP Networking*, May 2012
66. **T. He**, S. Chen, H. Kim, L. Tong, and K-W. Lee, "To Migrate or to Wait: Bandwidth-Latency Tradeoff in Opportunistic Scheduling of Parallel Tasks," *IEEE INFOCOM mini-conference*, Mar. 2012

67. L. Ma, **T. He**, A. Swami, K-W. Lee, an K.K. Leung, "Switch-and-Navigate: Controlling Data Ferry Mobility for Delay-Bounded Messages," *IEEE MILCOM*, Nov. 2011
68. S. Marano, V. Matta, **T. He**, L. Tong, "Embedding Information Flows into Renewal Traffic," *IEEE ITW*, Oct. 2011
69. S. Chen, L. Tong, and **T. He**, "Optimal Deadline Scheduling with Commitment," *Allerton Conference*, Sept. 2011
70. **T. He,** A. Swami, and K-W Lee, "Dispatch-and-Search: Dynamic Multi-Ferry Control in Partitioned Mobile Networks," *ACM MobiHoc*, May 2011
71. S. Chen, **T. He**, H. Y. Wong, K-W Lee, and L. Tong, "Secondary Job Scheduling in the Cloud with Deadlines," *SMTPS workshop in conjunction with ACM IPDPS*, May 2011
72. **T. He**, A. Anandkumar, and D. Agrawal, "Index-Based Sampling Policies for Tracking Dynamic Networks under Sampling Constraints," *IEEE INFOCOM*, Apr. 2011
73. **T. He**, L. Kaplan, C. Bisdikian, W. Wei, and D. Towsley, "Multi-Target Tracking Using Proximity Sensors," *IEEE MILCOM*, Nov. 2010
74. **T. He**, K-W Lee, and A. Swami, "Flying in the Dark: Controlling Autonomous Data Ferries with Partial Observations," *ACM MobiHoc*, Sept. 2010
75. **T. He**, N. Sofra, K-W Lee, and K. K. Leung, "Utility-Based Gateway Deployment for Supporting Multi-Domain DTNs," *IEEE SECON*, Jun. 2010
76. W. Wei, **T. He**, C. Bisdikian, D. Goeckel, and D. Towsley, "Target Tracking with Packet Delays and Losses – QoI amid Latencies and Missing Data," *IEEE IQ2S*, Apr. 2010
77. C. Liu, **T. He**, K-W Lee, K. Leung, and A. Swami, "Dynamic Control of Data Ferries under Partial Observations," *IEEE WCNC*, Apr. 2010
78. Z. Charbiwala, S. Chakraborty, S. Zahedi, Y.Kim, M. Srivastava**, T. He**, and C. Bisdikian, "Compressive Oversampling for Robust Data Transmission in Sensor Networks*," IEEE INFOCOM*, Mar. 2010
79. **T. He**, L. Tong, and A. Swami, "On the Maximum Throughput of Clandestine Sensor Networking," *IEEE MILCOM*, Oct. 2009
80. **T. He**, L. Tong, and A. Swami, "Maximum Throughput of Clandestine Relay," *Allerton Conference*, Sept. 2009
81. A. Anandkumar, C. Bisdikian, **T. He,** and D. Agrawal, "Selectively Retrofitting Monitoring in Distributed Systems," *MAMA workshop at ACM Sigmetrics*, Jun. 2009
82. **T. He**, H. Wong, and K. Lee, "Traffic Analysis in Anonymous MANETs," *IEEE MILCOM*, Nov. 2008
83. **T. He**, M. Zafer, and C. Bisdikian, "Detecting Transient Signals with Incomplete Observations," *IEEE MILCOM*, Nov. 2008
84. N. Sofra, **T. He**, P. Zerfos, B. Ko, K. Lee, and K. Leung, "Accuracy Analysis of Data Aggregation for Network Monitoring," *IEEE MILCOM*, Nov. 2008
85. **T. He** and M. Zafer, "Adaptive Sampling for Transient Signal Detection in the Presence of Missing Samples," *QoISN workshop at IEEE MASS*, Sep. 2008
86. A. Agaskar, **T. He**, and L. Tong, "A Distributed Scheme for Detection of Information Flows in Chaff," *IEEE CISS*, Mar. 2008
87. **T. He**, A. Agaskar, and L. Tong, "On Security-Aware Transmission Scheduling," *IEEE ICASSP*, Mar. 2008
88. **T. He** and L. Tong, "Distributed Detection of Information Flows with Side-Information," *IEEE Asilomar*, Nov. 2007

89. **T. He** and L. Tong, "Distributed Detection of Information Flows in Chaff", *IEEE ISIT*, Jun. 2007
90. **T. He** and L. Tong, "Detecting Information Flows: Improving Chaff Tolerance by Joint Detection", *IEEE CISS*, Mar. 2007
91. **T. He** and L. Tong, "Robust Detection of Stepping-Stone Attacks", *Army Science Conference*, Nov. 2006
92. **T. He,** P. Venkitasubramaniam, and L. Tong, "Packet Scheduling Against Stepping-Stone Attacks with Chaff", *IEEE MILCOM*, Oct. 2006
93. P. Venkitasubramaniam, **T. He**, and L. Tong, "Networking with Secrecy Constraints", *IEEE MILCOM,* Oct. 2006
94. P. Venkitasubramaniam, **T. He**, and L. Tong, "Relay Secrecy in Networks with Eavesdroppers," *Allerton Conference*, Sep. 2006
95. **T. He** and L. Tong, "Detecting Encrypted Interactive Stepping-Stone Connections", *IEEE ICASSP*, May 2006
96. **T. He** and L. Tong, "A Signal Processing Perspective to Stepping-Stone Detection", *IEEE CISS*, Mar. 2006
97. **T. He**, L. Tong, and A. Swami, "Nonparametric Change Estimation in 2D Random Fields", *IEEE MILCOM*, Oct. 2005
98. **T. He**, S. Ben-David, and L. Tong, "Nonparametric Change Detection in 2D Random Sensor Field", *IEEE ICASSP*, Mar. 2005 (**Best Student Paper**)
99. **T. He**, S. Ben-David, and L. Tong, "Change Detection and Estimation in Large Scale Sensor Networks: Linear Complexity Algorithms", *Army Science Conference*, Nov. 2004
100. S. Ben-David, **T. He**, and L. Tong, "Nonparametric Approach to Change Detection and Estimation in Large Scale Sensor Networks", *CISS*, Mar. 2004

PATENTS

1. N. R. Chaudhuri, S. Gharebaghi, **T. He**, T. La Porta, "Fast Long Term Simulations in Power Systems," filed 2022
2. **T. He**, L. Ma, M. Srivatsa, E. Nahum, "Client-space Network Monitoring," filed 2015
3. R. Raghavendra, **T. He**, F. Le, A. Munir, "Network State and Scheduling-aware Task Scheduling," filed 2016
4. L. Ma, **T. He**, N. Desai, "Robust Monitoring of Dynamic Cloud Networks," filed 2015
5. **T. He**, R. Raghavendra, D. Agrawal, and Y. Song, "Method and System for Mobility-Aware Dynamic Service Placement in Mobile Clouds," filed 2014
6. **T. He**, L. Ma, C. Bisdikian, and B. Ray, "Bounded-Budget Monitor Deployment in Monitoring Networks via End-to-End Probes," US Patent 9282020, issued March 8, 2016
7. **T. He**, J. Tan, Y. Ji, and K-W. Lee, "System and Method for Scheduling MapReduce Jobs in a Cluster of Dynamically Available Servers," filed 2013
8. **T. He**, D. Agrawal, and R. Raghavendra, "Enhanced Resource Management for a Network System," US Patent 9094872, issued July 28, 2015
9. **T. He**, M. Zafer, and C. Bisdikian, "Adaptive Remote Decision Making under Quality of Information Requirements," US Patent 8660022 B2, issued February 25, 2014
10. **T. He**, K-W Lee, and P. Zerfos, "Forecasting-Based Service for Virtual Machine Reassignment in Computing Environment," US Patent 8601483 B2, issued December 3, 2013
11. **T. He**, Q. Wang, K-W Lee, M. Zafer, Y. H. Lin, and H. Zhan, "Quasi-Dynamic Spectrum Access Mechanism for Internet-of-Things Applications," US Patent 8594023 B2, issued November 26, 2013

12. **T. He,** C. Bisdikian, and J. Branch, "Automatic Model Evolution," US Patent 8489525 B2, issued July 16, 2013
13. D. Verma, V. Pappas, and **T. He**, "Method and Apparatus for Efficient Communication of Multiple Streams on Cellular Networks," UK Patent 2494245, issued July 8, 2013
14. C. Bisdikian, **T. He**, D. Agrawal, A. Anandkumar, and S. Perelman, "Selective Instrumentation of Distributed Applications for Transaction Monitoring", US Patent 8433786 B2, issued April 30, 2013

DEMOS

1. X. Yao, J. Chen, **T. He**, J. Yang, and B. Li, "A Scalable Mixed Reality Platform for Remote Collaborative LEGO Design," Demo at *INFOCOM*, May 2022

FUNDING AND PROPOSALS

Senior Personnel in NSF/DoD grant "Convergence Accelerator: Track G: Securely Operating Through 5G Infrastructure – Phase I", with Tom La Porta (Co-PI at PSU), 2022-2023 (PSU share: 200K)

Lead PI in NSF grant "Collaborative Research: CNS Core: Medium: Inference and Control in Overlay Networks", with Eytan Modiano (PI at MIT), 2021-2025 (PSU share: 300K)

PI in NSF grant "SaTC: CORE: Small: Adversarial Network Reconnaissance in Software Defined Networking", with Patrick McDaniel (Co-PI), 2020-2023 (575K)

PI in DAIS ITA BPP20 Project 8 Task 2 on "Agile Analytics Enabled by Decentralized Continuous Learning in Coalitions", with Shiqiang Wang (IBM), Graham Bent (IBM), Kin K Leung (Imperial College), and Leandros Tassiulas (Yale), 2020-2021 (received 148K)

Co-PI in NSF grant "CPS: Medium: Coupled cAscade Modeling, Prevention, and Recovery (CAMPR): When Graph Theory Meets Trajectory Sensitivity", with Nilanjan Chaudhuri (PI) and Tom La Porta (Co-PI), 2018-2021 (999K)

PI in NSF grant "CIF: Small: Adversarial Network Tomography: Inferring Network State from Manipulated End-to-end Measurements", sole PI, 2018-2019 (170K)

PI in DAIS ITA BPP18 Project 3 Task 2 on "Distributed Analytics in Dynamic Coalition Environment: Placement, Scheduling, and Validation", with Shiqiang Wang (IBM), Christopher Gibson (IBM), and Mark Herbster (UCL), 2018-2020 (total 1M, received 204K)

PI in NIST grant on "Measurement Science in Cloud Computing", with Kang-won Lee (IBM), Vasilis Pappas (IBM), Lang Tong (Cornell), one of 27 winners out of 1300, 2010-2013 (1.5M)

PI in ITA FPP15 Project 1 Task 1 on "Tomography in Hybrid Coalition Networks," with Liang Ma (IBM), Theodoros Salonidis (IBM), Ramya Raghavendra (IBM), Kin K Leung (Imperial College), Don Towsley (UMass), Alex Wolf (Imperial College), Tom La Porta (PSU), 2015-2016 (700K)

Co-PI in ITA FPP15 Project 2 Task 3 on "Data Stream Processing in Hybrid Coalition Networks", with Theodoros Salonidis (IBM), Ting Wang (IBM), Peter Pietzuch (Imperial College), Don Towsley (UMass), Paul Stone (IBM), 2015-2016 (400K)

PI in ITA BPP13 Project 1 Task 1 on "Tomography in Hybrid Coalition Networks," with Theodoros Salonidis (IBM), Kin K Leung (Imperial College), Don Towsley (UMass), 2013-2015 (800K)

Co-PI in ITA BPP13 Project 2 Task 1 on "Mobile Micro-Cloud," with Raghu Ganti (IBM), Kin K Leung (Imperial College), Katy Warr (Roke Manor), Robert Hancock (Roke Manor), 2013-2015 (800K)

PI in ITA BPP09 Project 2 Task 1 "Enhancing Interoperability between Coalition Networks by Controlled Mobile Gateways," with Kin K Leung (Imperial College), Kang-won Lee (IBM), 2009-2011 (600K)

Co-PI in project proposal on "Software Defined Coalitions" as part of IBM Proposal for the Distributed Analytics and Information Science (DAIS) International Technology Alliance (ITA) program by US Army

and UK MoD, 2016-2021 (funded 2016)

TEACHING

Undergraduate Courses:

CMPEN 362: Communication Networks, Penn State University, Spring 2018, Spring 2019, Spring 2020, Fall 2021, Fall 2023

CMPSC 497: Mathematics of Machine Learning, Penn State University, Spring 2023

Graduate Courses:

CSE 514: Computer Networks, Penn State University, Fall 2017, Fall 2019, Fall 2020, Spring 2022

CSE 597: Learning in Networks, Penn State University, Spring 2021, Fall 2022

CSE 597: Inferential Network Monitoring, Penn State University, Fall 2016

SEMINAR AND INVITED TALKS

"Data Reduction for Communication-efficient Machine Learning", Colloquium, Dalian University of Technology, 2021

"Data Reduction for Communication-efficient Machine Learning", EE Colloquium, Penn State University, 2021

"Data Reduction for Communication-efficient Machine Learning", CS Colloquium, Rice University, 2021

"Networking Research in an Era of Buzzwords", Faculty Seminar, Penn State University, 2018

"Active Network Tomography: A Measurement Design Perspective," Colloquium, Temple University, 2017

"Inferring Network Internal State via Network Tomography," Colloquium, University of Southern California, 2016

"Inferring Network Internal State via Network Tomography," Colloquium, University of Colorado-Boulder, 2016

"Inferring Network Internal State via Network Tomography," Colloquium, Penn State University, 2016

"Reliable Network State Inference via Network Tomography," Applied Probability Seminar, IBM Research, 2015

"Bandwidth-Latency Tradeoff in Opportunistic Scheduling of Parallel Tasks," seminar, Cornell University, 2011

"Flying in the Dark: Controlling Autonomous Data Ferries with Partial Observations," seminar, Columbia University, 2010

"Controlling Autonomous Data Ferries with Partial Observations," seminar, UMass Amherst, 2010

Teaching assistant of course on "Digital Signal Processing", Cornell University, 2006

ADVISING

PhD Students (advised/co-advised)

TIngyang Sun, Fall 2023-present

Shajalal Forhad, Spring 2023-present

Akash Kumar, Spring 2022-present

Tian Xie, Fall 2019-present

Yudi Huang, Fall 2019-present

Cho-Chun Chiu, Spring 2019-present

Yilei Lin, Fall 2017-May 2022; Research Scientist at Meta

Hanlin Lu, Fall 2017-August 2021; Research Scientist at ByteDance

Vajiheh Farhadi (co-advised with Tom La Porta), Spring 2017-May 2022; Assistant Professor at Bucknell University

Diman Zad Tootaghaj (co-advised with Tom La Porta), Fall 2017-May 2018; Research Scientist at HP

Labs

PhD Students (committee)

Mingming Chen, Spring 2023-present

Chonghan Lee, Fall 2022-present

Xudong Qin, Spring 2022-Spring 2023

Qi Zhang, Fall 2021-present

Rui Zhang, Summer 2021-present

Hui-Ju Hung, Fall 2017-present

Heting Liu, Fall 2020-Summer 2023

Fang He, Fall 2020-Summer 2023

Noor Felemban, Fall 2020-Spring 2022

Peter Zientara, Fall 2018-May 2021

MS/MENG Students (advised)

Sanchal Thakkar, Fall 2021-Fall 2022

Lay Patel, Fall 2021-Spring 2023

Namitha Nambiar, Spring 2020-May 2021; Software Engineer at Oracle

Mingli Yu, Fall 2018-May 2020; PhD student at Penn State (advised by Tom La Porta)

Ming-Ju Li, Summer 2018-May 2019; Software Engineer at Amazon

Honors Students (thesis supervisor)

Yifei Xiao (Math), Fall 2017-Spring 2018

MENTORING

Liang Ma (PhD student at Imperial College), 2011-2014, generated one journal paper (TON 2014), six conference papers (IMC 2014, INFOCOM 2014, Globecom 2013, IMC 2013-Best Paper Nominee, ICDCS 2013-Best Paper, MILCOM 2011)

Chang Liu (PhD student at UMass), 2013-2015, generated two conference papers (SIGMETRICS 2015-Best Student Paper, MILCOM 2015)

Shiqiang Wang (PhD student at Imperial College), 2013-2015, generated two journal submissions (TMC, TPDS), five conference papers (Performance 2015, ICC 2015, Networking 2015, MILCOM 2015, MILCOM 2014)

Mostafa Dehghan (PhD student at UMass), 2013-2015, generated three conference papers (INFOCOM 2015, MILCOM 2014, MILCOM 2013)

Srikar Tati (PhD student at PSU), 2013, generated one conference paper (ICDCS 2014)

Yuting Ji (PhD student at Cornell), 2012, generated one conference paper (CLOUD 2013)

Shiyao Chen (PhD student at Cornell), 2010-2011, generated four conference papers (CLOUD 2012, INFOCOM-mini 2012, IPDPS workshop 2011, Allerton 2011)

Chi Liu (PhD student at Imperial College), 2009, generated one conference paper (WCNC 2010)

Ameya Agaskar (MS student at Cornell), 2008, generated one journal paper (TSP 2010), two conference papers (CISS 2008, ICASSP 2008)

Nikoletta Sofra (PhD student at Imperial College), 2008-2009, generated one journal paper (The Computer Journal 2009), two conference papers (SECON 2010, MILCOM 2008)

DIVERSITY AND OUTREACH

Chair of DEI Committee of the CSE Department, 2023-present

Member of DEIB Committee of the School of EECS, 2022-present

Member of Open Faculty Search Committee of the College of Engineering, 2022-present

Member of Outreach Committee of the CSE Department, 2016-present

Panelist for N2Women Event at ICCCN 2022

Organizer of CSE Camp for Girls 2022 "Design your own reality!"

Mentor, Panelist, and N2Women Event Chair at INFOCOM 2020

Role Model Speaker at the 30th and 31st Women in Math and Science Conference at Millersville University 2017-2018

Faculty mentor at the Grace Hopper Celebration 2017

N2Women Membership Co-chair 2013-2014

PhD Forum committee at the Grace Hopper Celebration 2011

IBM Fellowship committee for Communication and Networking PIC, 2008-2009

Chair of Mentoring Program of Women ECE, Cornell University, 2005

MEMBERSHIPS AND SERVICES

IEEE **Senior Member** since 2013; IEEE Member 2007-2013; IEEE Student Member 2004-2007

Associate Editor for IEEE/ACM Transactions on Networking (TON) 2017-present and IEEE Transactions on Communications (TCOM) 2017-2020

General Co-Chair for IEEE RTCSA 2023

TPC Co-Chair for IEEE ICCCN 2022

Area TPC Chair for IEEE INFOCOM 2021

Steering Committee for ICCCN Workshop on Edge Computing and Networking (ECN) 2018

Organizing Committee for ACM MobiHoc 2019 (Corporate Sponsorship Chair)

Editor in Chief Evaluation Committee for the IEEE Open Journal of the Computer Society 2021

TPC Member for ACM SIGMETRICS 2023, ACM/IEEE IoTDI 2023, IEEE ICDCS 2022-2023, IEEE INFOCOM 2009-2020 and 2024, IEEE MILCOM 2013-present, IEEE ICCCN 2020 (advisory TPC), IEEE ICCC 2019, IEEE ICNP 2018&2022-2023, IEEE IWQoS 2014-2018, IEEE WiOpt 2016, CCN workshop at MASS 2015, ICNC 2014, IFIP Networking 2013, IEEE SECON 2010-2013, BroadNets 2010, QShine 2009

Workshop co-chair for ITA workshop on "Content and Context Aware Networking in Challenged Hybrid Networks," with Tom La Porta (PSU) and Alex Wolf (Imperial College), 2013

Panelist for IEEE SECON 2010

Reviewer for refereed journals including *IEEE Transactions on Signal Processing, IEEE Transactions on Information Theory, IEEE Transactions on Computers, IEEE Transactions on Information Forensics and Security, IEEE Signal Processing Letters, IEEE/ACM Transactions on Networking, IEEE Transactions on Wireless Communications, IEEE Transactions on Mobile Computing, IEEE Transactions on Automatic Control, IEEE Transactions on Parallel and Distributed Systems, IEEE Journal on Selected Areas in Communications, ACM Transactions on Autonomous and Adaptive Systems, ACM Computing Surveys, Elsevier Journal on Computer Networks, Elsevier Journal on Computer Communications, Wireless Networks,* and refereed conferences including *IEEE ICASSP, IEEE ISIT, IEEE MILCOM, IEEE MASS, IEEE WiOpt, IEEE Globecom,* and *Annual Conference of ITA*