Xiong Wang

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Associate Professor, School of Computer Science and Technology, Huazhong University of Science and Technology

Professional Experience

- **Huazhong University of Science and Technology**, Wuhan — Nov. 2021 - Present
  - Associate Professor, School of Computer Science and Technology
  - *Research Topic*: Distributed Machine Learning, Data Center Network, Cloud/Edge Computing
- **The Chinese University of Hong Kong**, Hong Kong — Nov. 2019 - Nov. 2021
  - Post-doctoral Fellow, The Department of Computer Science and Engineering
  - *Advisor*: Prof. John C.S. Lui (ACM Fellow, IEEE Fellow)
  - *Research Topic*: Mean Field Based Network Analysis, Distributed Online Learning, Edge Computing

Education

- **Shanghai Jiao Tong University**, Shanghai — Sep. 2014 - Jun. 2019
  - Ph.D. (Graduate with Honors), Information and Communication Engineering
  - *Advisor*: Prof. Xinbing Wang
  - *Research Topic*: Crowdsourcing/Crowdsensing, Mobile Computing, Data Mining
- **Huazhong University of Science and Technology**, Wuhan — Sep. 2010 - Jun. 2014
  - B.Eng. (Graduate with Honors), Electronic Information Engineering

Research Interests

- **Distributed Machine Learning,** e.g., System Design, Federated Learning.
- **Data Center Network,** e.g., Network Analysis, Congestion Control.
- **Cloud and Edge Computing,** e.g., Performance Modeling, Task Offloading.

Selected Publications

(* = corresponding author)

[1] **Xiong Wang**, J. Ye, and John C. S. Lui, "Mean Field Graph Based D2D Collaboration and Offloading Pricing in Mobile Edge Computing," *IEEE/ACM Transactions on Networking* (**TON**), 2023. (**CCF A**)

[2] **Xiong Wang**, J. Ye, and John C. S. Lui, "Decentralized Scheduling and Dynamic Pricing for Edge Computing: A Mean Field Game Approach," *IEEE/ACM Transactions on Networking* (**TON**), vol. 31, no. 3, pp. 965-978, Jun. 2023. (**CCF A**)

[3] **Xiong Wang**, R. Jia, L. Fu, H. Jin, X. Tian, X. Gan, and X. Wang, "Online Spatial Crowdsensing with Expertise-aware Truth Inference and Task Allocation," *IEEE Journal on Selected Areas in Communications* (**JSAC**), vol. 40, no. 1, pp. 412-427, Jan. 2022. (**CCF A**)

[4] **Xiong Wang**, J. Ye, and John C. S. Lui, "Online Learning Aided Decentralized Multi-User Task Offloading for Mobile Edge Computing," *IEEE Transactions on Mobile Computing* (**TMC**), 2023. (**CCF A**)

[5] **Xiong Wang**, R. Jia, X. Tian, X. Gan, and X. Wang, "Location-Aware Crowdsensing: Dynamic Task Assignment and Truth Inference," *IEEE Transactions on Mobile Computing* (**TMC**), vol. 12, no. 9, pp. 362–375, Feb. 2020. (**CCF A**)

[6] **Xiong Wang**, Y. Chen, Y. Li, X. Liao, H. Jin, and B. Li, "FedMoS: Taming Client Drift in Federated Learning with Double Momentum and Adaptive Selection," *IEEE Conference on Computer Communications* (**INFOCOM**), May 2023. (**CCF A**)

[7] **Xiong Wang**, J. Ye, and John C. S. Lui, "Decentralized Task Offloading in Edge Computing: A Multi-User Multi-Armed Bandit Approach," *IEEE Conference on Computer Communications* (**INFOCOM**), May 2022. (**CCF A**)

[8] **Xiong Wang**, R. Jia, X. Tian, and X. Gan, "Dynamic Task Assignment in Crowdsensing with Location Awareness and Location Diversity," *IEEE Conference on Computer Communications* (**INFOCOM**), Apr. 2022. (**CCF A**)

[9] **Xiong Wang**, and R. Jia, "Mean Field Equilibrium in Multi-Armed Bandit Game with Continuous Reward," *International Joint Conferences on Artificial Intelligence* (**IJCAI**), Aug. 2021. (**CCF A**)

[10] **Xiong Wang**, J. Zhang, X. Tian, X. Gan, Y. Guan, and X. Wang, "Crowdsensing Based Consensus Incident Report for Road Traffic Acquisition," *IEEE Transactions on Intelligent Transportation Systems* (**TITS**), vol. 19, no. 8, pp. 2536–2547, Aug. 2018. (**CCF B**)

[11] **Xiong Wang**, Z. Liu, X. Tian, X. Gan, Y. Guan, and X. Wang, "Incentivizing Crowdsensing with Location-Privacy Preserving," *IEEE Transactions on Wireless Communications* (**TWC**), vol. 16, no. 10, pp. 6940–6952, Oct. 2017. (**CCF B**)

[12] **Xiong Wang**, J. Ye, and John C. S. Lui, "Joint D2D Collaboration and Task Offloading for Edge Computing: A Mean Field Graph Approach," *IEEE/ACM International Symposium on Quality of Service* (**IWQOS**), Jun. 2021. (**CCF B**)

[13] **Xiong Wang**, L. Ding, Q. Wang, J. Xie, T. Wang, X. Tian, Y. Guan, and X. Wang, "A Picture is Worth a Thousand Words: Share Your Real-Time View on the Road," *IEEE Transactions on Vehicular Technology* (**TVT**), vol. 66, no. 4, pp. 2902–2914, Apr. 2017.

[14] **Xiong Wang**, L. Fu, Y. Zhang, X. Gan, and X. Wang, "VDNet: an infrastructure-less UAV-assisted sparse VANET system with vehicle location prediction," Wireless Communications and Mobile Computing (**WCMC**), vol. 16, no. 17, pp. 2991–3003, Sep. 2016.

[15] Xiaoying Gan, **Xiong Wang**, W. Niu, G. Hang, X. Tian, X. Wang, and J. Xu, "Incentivize Multi-Class Crowd Labeling Under Budget Constraint," *IEEE Journal on Selected Areas in Communications* (**JSAC**), vol. 35, no. 4, pp. 893–905, Apr. 2017. (**CCF A, First author is my co-advisor**)

[16] Y. Li, **Xiong Wang**, X. Gan, H. Jin, and X. Wang, "Learning-Aided Computation Offloading for Trusted Collaborative Mobile Edge Computing," *IEEE Transactions on Mobile Computing* (**TMC**), vol. 19, no. 12, pp. 2833-2849, Dec. 2020. (**CCF A**)

[17] H. Chen, **Xiong Wang**, Q. Hua, L. Gu, W. Qiang, and H. Jin, "Exploring the System Challenges of Establishing a National Integrated Big Data Center," *Communications of the CCF*, vol. 18, no. 11, pp. 20-24, Nov. 2022.

Selected Grants

[1] "Research and Verification of Key Technologies in Intelligent Computing and Network Convergence," **National Key R&D Program of China**, (Grant No: 2022ZD0115301), ¥3,000,000, 2022.12-2025.11, **PI**.

[2] "Cloud Edge Fusion Based Data Sensing and Inference Computing for Large-Scale Crowdsensing Networks," **Young Scientists Fund of the National Natural Science Foundation of China**, (Grant No: 62202185), ¥300,000, 2023.01-2025.12, **PI**.

[3] "Cloud-Edge Aided Large-Scale Crowdsensing Data Collection and Processing," **Hubei Provincial Natural Science Foundation**, (Grant No: 2022CFB611), ¥50,000, 2022.06-2024.05, **PI**.

Patents

[1] **Xiong Wang**, L. Ding, Q. Wang, J. Xie, X. Tian, X. Gan, Y. Guan, and X. Wang, "Method for Tracking Vehicle Trajectory And Predicting Vehicle Behavior," ZL201510868738.4, Published.

[2] **Xiong Wang**, G. Cai, G. Hao, X. Gan, X. Wang, X. Tian, X. Di, and J. Tian. " A Video Transmission System Based on Cache Encoding," ZL201711280964.6, Published.

[3] S. Zhu, **Xiong Wang**, Z. Zhang, C. Kong, Y. Zhang, X. Tian, X. Gan, and X. Wang, "A Lane-level Map Generation And Positioning System Based on Smartphones," ZL201510960552.1, Published.

[4] T. Wang, **Xiong Wang**, X. Wang, X. Tian, X. Gan, X. Di, and J. Tian, "A Distributed Access Method for a Resilient Long-Distance Wireless Transmission System Based on TDMA," ZL201611046324.4, Published.

[5] H. Guo, **Xiong Wang**, G. Cai, X. Gan, X. Wang, and X. Tian, "Control Management Method, System, Readable Storage Medium, And Device for Transmitting Files," ZL201711059671.5, Published.

Awards And Honors

- East Lake Young Talent, 2023
- Wuhan YingCai, 2022
- Outstanding Doctoral Thesis Award of Chinese Institute of Electronics, 2019

Teaching Activities

- **Computer Networks**, Huazhong University of Science and Technology, Wuhan, Fall 2022, 2023
- **Data Structure**, Huazhong University of Science and Technology, Wuhan, Spring 2023

Professional Services

- **Publicity Chair**
  - IEEE/ACM international Symposium on Cluster, Cloud and Internet Computing (CCGrid), 2024
- **Program Committee Member**
  - International Symposium on Computer Applications and Information Systems (ISCAIS), 2023
  - IEEE International Conference on Smart Data (SmartData), 2023
  - CCF Internet of Things Committee, 2023
- **Reviewer**
  - IEEE/ACM Transactions on Networking (TON)
  - IEEE Journal on Selected Areas in Communications (JSAC)
  - IEEE Transactions on Mobile Computing (TMC)
  - IEEE Transactions on Parallel and Distributed Systems (TPDS)
  - IEEE International Conference on Computer Communications (INFOCOM)
  - ACM International Symposium on Theory, Algorithmic Foundations, and Protocol Design for Mobile Networks and Mobile Computing (MobiHoc)