

XIANGCHUN CHEN

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EDUCATION

The Hong Kong Polytechnic University, Hong Kong, China 2021 – 2026

Ph.D. Research Area: Edge AI, Edge LLM, Reinforcement Learning, Digital Twin, Edge AI Agent

Supervisor: **Prof. Jiannong Cao** (IEEE Fellow, Vice President of PolyU, Member of Academia Europaea)

National Institute of Informatics (NII), Tokyo, Japan 2024 – 2025

Visiting Scholar

Supervisor: **Prof. Yusheng Ji** (IEEE Fellow)

Harbin Institute of Technology, Harbin, China 2017 – 2021

B.E. Computer Science and Technology

PROJECT EXPERIENCE

Research Projects

Role: PhD Student

- **A High-performance Collaborative Edge Computing Framework Enabling Smart City Applications**, TRS - RGC Theme-based Research Scheme, 2021 - Present
- **Distributed Resource Management for Scalable and High Performance Collaborative Edge Computing**, HK RGC General Research Fund (GRF), 2023/01 - 2025/12
- **Edge Learning: the Enabling Technology for Distributed Big Data Analytics in Cloud-Edge Environment**, RIF - RGC Research Impact Fund, 2020/05 - 2025/04
- **Distributed Edge Intelligence for Collaborative Video Surveillance**, ITF - Mainland-Hong Kong Joint Funding Scheme, 2022/09 - 2024/04
- **Decentralized Model Learning with Unlabeled Streaming Data for Edge AI**, HK RGC General Research Fund (GRF), 2022/01 - 2024/12

PUBLICATIONS

Journal Articles

- 2026 **X. Chen**, J. Cao, R. Cao, Y. Sahni, M. Zhang, and Y. Ji. “Decentralized Task Offloading in Collaborative Edge Computing: A Digital Twin Assisted Multi-Agent Reinforcement Learning Approach.” *IEEE Transactions on Mobile Computing (TMC)*, vol. 25, no. 4, pp. 4776–4790. doi: 10.1109/TMC.2025.3628502. (CCF-A, JCR Q1)
- 2025 **X. Chen**, J. Cao, Y. Sahni, M. Zhang, Z. Liang, and L. Yang. “Mobility-Aware Dependent Task Offloading in Edge Computing: A Digital Twin-Assisted Reinforcement Learning Approach.” *IEEE Transactions on Mobile Computing (TMC)*, vol. 24, no. 4, pp. 2979–2994. doi:10.1109/TMC.2024.3506221. (CCF-A, JCR Q1)
- 2024 **X. Chen**, J. Cao, Y. Sahni, S. Jiang, and Z. Liang. “Dynamic Task Offloading in Edge Computing Based on Dependency-Aware Reinforcement Learning.” *IEEE Transactions on Cloud Computing (TCC)*, vol. 12, no. 2, pp. 594–608. doi: 10.1109/TCC.2024.3381646. (IEEE TCC Best Paper Award 2024, JCR Q1)

Conference Papers

- 2023 **X. Chen**, J. Cao, Z. Liang, Y. Sahni, and M. Zhang. “Digital Twin-assisted Reinforcement Learning for Resource-aware Microservice Offloading in Edge Computing.” In *IEEE 20th International Conference on Mobile Ad Hoc and Smart Systems (MASS)*, pp. 28–36. (CCF-C)

- 2024 M. Zhang, J. Cao, Y. Sahni, **X. Chen**, and S. Jiang. "Resource-efficient Parallel Split Learning in Heterogeneous Edge Computing." In *International Conference on Computing, Networking and Communications (ICNC)*, pp. 794–798.
- 2026 M. Zhang, J. Cao, T. Wu, **X. Chen**, N. Wang. "Efficient KV Cache Migration for Distributed LLM Inference in Collaborative Edge Computing." In *the 46th IEEE International Conference on Distributed Computing Systems (ICDCS)*.

ACADEMIC SERVICE

- **Reviewer:** IEEE/ACM Transactions on Networking (TON)
- **Reviewer:** IEEE Transactions on Mobile Computing (TMC)
- **Reviewer:** IEEE Transactions on Cognitive Communications and Networking (TCCN)
- **Reviewer:** IEEE Internet of Things Journal (IoT-J)

TEACHING EXPERIENCE

- Teaching Assistant, *Metaverse Applications: Design And Case Studies*, Spring 2024.
- Teaching Assistant, *Programming Fundamentals and Applications*, Fall 2023.
- Teaching Assistant, *Computer Networking*, Spring 2023.
- Teaching Assistant, *Programming Fundamentals and Applications*, Fall 2022.
- Teaching Assistant, *Programming Fundamentals*, Spring 2022.
- Teaching Assistant, *Computer Programming*, Fall 2021.

INTERNSHIP EXPERIENCE

Ant Group (formerly Ant Financial Services Group of Alibaba Group), Chengdu, China 2020

Intern Department: Intelligent Services

Backend Development Intern Project: Pay and Service - Dedicated Customer Service

- Developed a "Pay-as-a-Service" dedicated customer support system helping service-oriented businesses (e.g., legal, healthcare) provide 1-on-1 services.
- Responsible for Instant Messaging (IM) storage; utilized **Tablestore** to store conversations and chat records, implementing reverse pagination queries and tokenized search functions.
- Solved challenges in message synchronization and storage using a **write-diffusion model** for sync and distributed Tablestore for storage.
- Achieved high scalability and low storage costs suitable for massive data scenarios.

AWARDS

- IEEE TCC Best Paper Award, Awarded by the IEEE Computer Society Publications Board 2025
- *Postgraduate Scholarship*, The Hong Kong Polytechnic University 2021 – 2025
- *Ren-Min Scholarship*, Harbin Institute of Technology 2019 – 2020
- *International Second Prize*, Mathematical Contest in Modeling (MCM) 2019
- *Provincial First Prize*, Chinese College Students Mathematical Modeling Competition 2019

IT SKILLS

- **Languages:** Python (Proficient), Java, C/C++
- **Frameworks & Tools:** PyTorch, TensorFlow, Linux, Docker, Git, LaTeX
- **Core Competencies:** Data Structures, Algorithms, Computer Networks (TCP/IP), Distributed Systems
- **English:** IELTS 6.5, Fluent in oral communication