Runchen Xu

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google scholar | Personal website

Summary/Objective

I am a Ph.D. student in Computer Science at the University of Auckland. My research focuses on Decentralized Artificial Intelligence, Model Markets, and Federated Learning. I am also interested in Mobile Computing, Wireless Communications and Networking, Game Theory, Resource Allocation, and Reinforcement Learning.

Education

The University of Auckland Auckland, New Zealand
Doctor of Philosophy in Computer Science *2025.11 - present*

- Supervisor: Jiamou Liu
- Research topic: Decentralized Artificial Intelligence, Model Markets, and Federated Learning

University of Electronic Science and Technology of China Chengdu, China
Master of Engineering in Computer Technology *2022.9 - 2025.7*

- Supervisor: Zheng Chang
- Thesis Title: Research on Strategies for Edge Computing in the Internet of Things Using Game Theory

University of Electronic Science and Technology of China Chengdu, China
Bachelor of Engineering in Mechanical Design, Manufacturing, and Automation *2018.9 - 2022.7*

Research Interests

- Decentralized Artificial Intelligence, Model Markets, and Federated Learning
- Mobile Computing, Wireless Communications and Networking
- Game theory, Resource Allocation, and Reinforcement Learning.

Work Experience

Administrative Assistant 2021.9 - 2022.6
University of Electronic Science and Technology of China, China

- Provide comprehensive administrative support for the daily operations of the International Office of Glasgow College
- Assist with program coordination, record maintenance, and cross-cultural communication

Student Mentor for undergraduate students 2020.8 - 2021.6
University of Electronic Science and Technology of China, China

- Assist undergraduates with course selection, academic planning, and introduction to academic resources, as well as supervise their academic performance and classroom discipline
- Assist the college/faculty in organizing academic, practical, and recreational activities for the class.

Academic Services

Conference Reviewer:

- 2025 IEEE Vehicular Technology Conference (VTC 2025)

Honors and Awards

- May 2025: Outstanding Graduate of UESTC
- Dec 2024: National Scholarship for Postgraduate Students
- May 2024: Young Scholar Award of UESTC
- 3 times in 2023 - 2024: Academic Scholarship for Postgraduate Students of UESTC
- 3 times in 2023 - 2024: Outstanding Graduate Student Award of UESTC

- 3 times in 2018 - 2022: Academic Scholarship for undergraduate students of UESTC

Publications

Conference & Journal Papers:

1. **Runchen Xu**, Lu Yu, Zheng Chang. *Contract-based Incentive Mechanism for AI-Generated Content Services in Vehicle Edge Computing.* Accepted by IEEE International Symposium on Personal, Indoor and Mobile Radio Communications, Istanbul, Türkiye, 2025
2. **Runchen Xu**, Zheng Chang, Zhu Han, Sahil Garg, Georges Kaddoum and Joel J. P. C. Rodrigues. *Energy-Efficient Joint Optimization of Sensing and Computation in MEC-assisted IoT Using Mean-Field Game.* Accepted by IEEE Internet of Things Journal, 2024
3. **Runchen Xu**, Zheng Chang, Xinran Zhang and Timo Hämäläinen. *Blockchain-Based Resource Trading in Multi-UAV Edge Computing System.* Accepted by IEEE Internet of Things Journal, 2024
4. **Runchen Xu**, Zheng Chang, Zhiwei Zhao and Geyong Min. *Contract-Based Incentive Mechanism for Blockchain-Enabled Federated Learning in Vehicle Edge Computing.* Accepted by IEEE Global Communications Conference, Kuala Lumpur, Malaysia, 2023