

# Runchen Xu

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google scholar | Personal website

## Summary/Objective

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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

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**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

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

## Work Experience

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**Graduate Teaching Assistant** 2025.11 - 2026.2  
The University of Auckland, New Zealand

- COMPSCI 120 Mathematics for Computer Science, 26 summer school

**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

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### Conference Reviewer:

- 2025 IEEE Vehicular Technology Conference (VTC 2025)

## Honors and Awards

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- 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

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### 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