Zijian (Longino) ZHAO 赵子健

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Education

The Hong Kong University of Science and Technology (Clearwater Bay Campus, Hong Kong) Sep. 2024 – Present
Ph.D. in Civil Engineering (Scientific Computation) *GPA: 3.85/4.2*
Supervisor: *Prof. Sen Li*
Main Research Directions: *Deep Learning, Reinforcement Learning, Intelligent Transportation, Mobile Computing, AI Ethics*

Sun Yat-sen University (Guangzhou Campus) Sep. 2020 – Jul. 2024
B.Eng. in Computer Science and Technology (National Basic Subject Talent Training Plan) *GPA: 4.0/5.0, Rank: Top 10%*
Supervisors: *Prof. Kai Huang, Prof. Chengying Gao, Prof. Ning Liu*
Main Research Directions: *Deep Learning, Domain Adaptation, Wireless Sensing, Music Information Retrieval, Robot Control*
Ranking First in: *Computer Programming, Principles of Compilers, Distributed Systems, Embedded Systems, Complex Variables, Mathematical Analysis, Advanced Algebra, Data Structures and Algorithms, Probability and Statistics, Discrete Mathematics*

Experience

Industry-Academia-Research Student Feb. 2024 – Aug. 2024
Likelihood Lab, Guangzhou WenSight Intelligent Technology Co., Ltd. *Online (Quantitative Finance Direction)*
Visiting Student Aug. 2023 – Aug. 2024
Shenzhen Research Institute of Big Data, The Chinese University of Hong Kong (Shenzhen) *Supervisor: Prof. Guangxu Zhu*

Research Interest

I have a broad interest in topics related to Deep Learning, like **Multi-Agent Reinforcement Learning (MARL)**, **Cross-Domain Learning**, and **Large Models (LMs)**. My focus is particularly on **cross-subject and cross-field AI**, with previous research spanning transportation, communication, sensing, music, education, finance, and robotics. I excel at transferring knowledge flexibly across different areas and adapting quickly to new fields.

Publications

A. Journal Papers:

[1] **Zijian Zhao**, Sen Li*, "The Impacts of Data Privacy Regulations on Food-Delivery Platforms", Transportation Research Part C: Emerging Technologies (TR_C), 2025 (JCR-Q1) [Paper] [Code]
[2] **Zijian Zhao**, Tingwei Chen, Zhijie Cai, Xiaoyang Li, Hang Li, Qimei Chen, Guangxu Zhu*, "CrossFi: A Cross Domain Wi-Fi Sensing Framework Based on Siamese Network", IEEE Internet of Things Journal (IOT-J), 2025 (JCR-Q1) [Paper] [Code]
[3] Haolong Chen, Hanzhi Chen, **Zijian Zhao**, Kaifeng Han*, Guangxu Zhu*, Yichen Zhao, Ying Du, Wei Xu, Qingjiang Shi, "An Overview of Domain-Specific Foundation Model: Key Technologies, Applications and Challenges", Science China Information Sciences (SCIS), 2025 (JCR-Q1) [Paper]

B. Conference Papers:

[1] **Zijian Zhao**, "Towards Fairness in Transportation Gig Markets: Identifying, Imitating, and Mitigating Algorithm Discrimination via Deep Reinforcement Learning", 2026 Annual AAAI Conference on Artificial Intelligence (AAAI) / Special Interest Group on Artificial Intelligence (SIGAI) Doctoral Consortium, 2026
[2] **Zijian Zhao**, Jing Gao*, Sen Li, "Ride-Hailing Vehicle Dispatch with a Mixture of On-Demand and Pre-Booked Requests: A Multi-Agent Reinforcement Learning Approach", 2026 COTA International Conference of Transportation Professionals (CICTP), 2026 [Code]
[3] **Zijian Zhao***, "Let Network Decide What to Learn: Symbolic Music Understanding Model Based on Large-Scale Adversarial Pre-Training", 2025 ACM International Conference on Multimedia Retrieval (ICMR), 2025 [Paper] [Code] [Hugging Face]
[4] **Zijian Zhao**, Zhijie Cai, Tingwei Chen, Xiaoyang Li, Hang Li, Qimei Chen, Guangxu Zhu*, "Does MMD Really Align? A Cross Domain Wireless Sensing Method via Local Distribution", 2025 IEEE/CIC International Conference on Communications in China (ICCC), 2025 [Paper] [Code]
[5] **Zijian Zhao**, Tingwei Chen, Fanyi Meng, Zhijie Cai, Hang Li, Xiaoyang Li, Guangxu Zhu*, "LoFi: Vision-Aided Label Generator for Wi-Fi Localization and Tracking Sensing", 2025 IEEE Global Communications Conference (Globecom) GenAI NGN Workshop, 2025 [Paper] [Code] [Dataset]
[6] **Zijian Zhao**, Sen Li*, "Multi-Agent Reinforcement Learning for Order Assignment and Payment Setting on Food-Delivery Platforms: The Implicit Algorithmic Biases", 2025 International Symposium on Transportation Data & Modeling (ISTDM), 2025 (also presented at BTR 2025) [Paper]

[7] Tingwei Chen, Yantao Wang, Hanzhi Chen, **Zijian Zhao**, Xinhao Li, Nicola Piovesan, Guangxu Zhu*, Qingjiang Shi, "Modeling the 5G Energy Consumption using Real-World Data: Energy Fingerprint is All You Need", 2025 IEEE Global Communications Conference (Globecom) Mutual Facilitation of GenAI NGN Workshop, 2025 [Paper] [Code]

[8] Chuxue Cao, Mengze Li, Juntao Dai, Jinluan Yang, **Zijian Zhao**, Shengyu Zhang, Weijie Shi, Chengzhong LIU, Sirui Han, Yike Guo, "Towards Advanced Mathematical Reasoning for LLMs via First-Order Logic Theorem Proving", 2025 Conference on Empirical Methods in Natural Language Processing (EMNLP), 2025 [Paper]

[9] **Zijian Zhao**, Tingwei Chen, Fanyi Meng, Hang Li, Xiaoyang Li, Guangxu Zhu*, "Finding the Missing Data: A BERT-Inspired Approach Against Package Loss in Wireless Sensing", 2024 IEEE International Conference on Computer Communications (INFOCOM) DeepWireless Workshop, 2024 [Paper] [Code] [Dataset] [Hugging Face]

[10] Xiao Liang (supervisor), **Zijian Zhao**, Weichao Zeng, Yutong He, Fupeng He, Yiyi Wang, Chengying Gao*, "PianoBART: Symbolic Piano Music Understanding and Generating with Large-Scale Pre-Training", 2024 IEEE Conference on Multimedia Expo (ICME), 2024 [Paper] [Code] [Hugging Face]

[11] Zitao Zhang, Yuhong Huang, **Zijian Zhao**, Zhenshan Bing, Chenglin Cai, Alois Knoll and Kai Huang*, "Autonomous Locomotion of a Rat Robot Based on Model-Free Reinforcement Learning", 2024 IEEE International Conference on Advanced Robotics and Mechatronics (ICARM), 2024 [Paper]

[12] Zitao Zhang, Yuhong Huang, **Zijian Zhao**, Zhenshan Bing, Alois Knoll and Kai Huang*, "A Hierarchical Reinforcement Learning Approach for Adaptive Quadruped Locomotion of a Rat Robot", 2023 IEEE International Conference on Robotics and Biomimetics (ROBIO), 2023 (**Best Paper Finalist**) [Paper]

[13] Zitao Zhang*, Yuhong Huang, **Zijian Zhao**, Zhenshan Bing, Kai Huang, "Autonomous Locomotion of a Rat Robot Based on Reinforcement Learning", 2023 CCF China Intelligent Robotics Annual Conference (CIRAC), 2023 [Paper]

C. Working Journal Papers:

[1] **Zijian Zhao**, Sen Li*, "Discriminatory Order Assignment and Payment-Setting of On-Demand Food-Delivery Platforms: A Multi-Action and Multi-Agent Reinforcement Learning Framework" (under third-round review, Transportation Research Part E: Logistics and Transportation Review (TR_E))

[2] **Zijian Zhao**, Zhijie Cai, Tingwei Chen, Xiaoyang Li, Hang Li, Qimei Chen, Guangxu Zhu*, "KNN-MMD: Cross Domain Wireless Sensing via Local Distribution Alignment" (under third-round review, IEEE Transactions on Mobile Computing (TMC)) [ArXiv] [Code] [Dataset]

[3] **Zijian Zhao**, Fanyi Meng, Zhonghao Lyu, Hang Li, Xiaoyang Li, Guangxu Zhu*, "CSI-BERT2: A BERT-Inspired Framework for Efficient CSI Prediction and Recognition in Wireless Communication and Sensing" (under second-round review, IEEE Transactions on Mobile Computing (TMC)) [ArXiv] [Code] [Dataset] [Hugging Face]

[4] **Zijian Zhao***, Dian Jin, Zijing Zhou, "Zero-Effort Image-to-Music Generation: An Interpretable RAG-Based VLM Approach" (under first-round review, IEEE Signal Processing Letters (SPL)) [ArXiv] [Code]

[5] Shiting Chen*, **Zijian Zhao**, Jinsong Chen*, "A Confidence-Guided RAG Approach for LLMs in Mathematics Question Answering" (under revise, Education and Information Technologies (EAIT)) [ArXiv] [Code]

D. Working Conference Papers:

[1] **Zijian Zhao**, Sen Li*, "One Step is Enough: Multi-Agent Reinforcement Learning bBased on One-Step Policy Optimization for Order Dispatch on Ride-Sharing Platforms" (under review, 2026 Annual AAAI Conference on Artificial Intelligence (AAAI)) [ArXiv] [Code]

[2] **Zijian Zhao**, Sen Li*, "Triple-BERT: Do We Really Need MARL for Ride-Sharing Order Dispatch?" (under review, 2026 International Conference on Learning Representations (ICLR)) [ArXiv] [Code]

[3] **Zijian Zhao**, Dian Jin, Zijing Zhou, Xiaoyu Zhang*, "Automatic Stage Lighting Control: Is it a Rule-Driven Process or a Generative Task?" (under review, 2026 International Conference on Learning Representations (ICLR)) [ArXiv] [Code] [Dataset] [Hugging Face]

[4] Chuxue Cao, Jinluan Yang, **Zijian Zhao**, Haoran Li, Yuchen Tian, Kunhao Pan, Sirui Han, Yike Guo, "Enhancing Reasoning Reliability through Formal Logic Verification in Reinforcement Learning" (under review, 2026 Annual Meeting of the Association for Computational Linguistics (ACL))

E. Technical Reports:

[1] **Zijian Zhao**, Xuming Zhang, Jiayu Wen, Mingwen Liu, Xiaoteng Ma, "Label Unbalance in High-Frequency Trading", 2025 (reported by QuantML) [ArXiv] [Code]

Patents

A. Granted Patents:

[1] **Zijian Zhao**, Guangxu Zhu, Qimei Chen, Kaifeng Han, "Method for Object Recognition Using Model Based on Few-Shot Learning and Related Equipment", Chinese Patent, Patent Number: ZL202411074110, 2024 [PDF]

[2] **Zijian Zhao**, Kaifeng Han, Qimei Chen, Guangxu Zhu, Xiaoyang Li, Hang Li, "Channel State Information Recovery Method and Apparatus, Equipment, Storage Medium", Chinese Patent, Patent Number: ZL2024102321250, 2024 [PDF]

B. Published Patents:

[1] **Zijian Zhao**, Guangxu Zhu, Kaifeng Han, Xiaoyang Li, Hang Li, "Method for Classifying Data Using Model Based on Few-Shot Learning and Related Equipment", Chinese Patent, Application Number: 2024108392137, 2024 [PDF]

[2] **Zijian Zhao**, Guangxu Zhu, Shen Chao, Shi Qingjiang, Han Kaifeng, "Personnel Detection Method, Device, Electronic Equipment, and Storage Medium", Chinese Patent, Application Number: 2024105419689, 2024 [PDF]

[3] Kai Huang, Zitao Zhang, **Zijian Zhao**, Ruoyi Tao, "A Motion Control Method for Small Bionic Rat Based on Reinforcement Learning", Chinese Patent, Application Number: 2023116499786, 2023 [PDF]

Talks

[1] "Discriminatory Order Assignment and Payment-Setting of On-Demand Food-Delivery Platforms: The Impacts of Data Privacy Regulations", Bridging Transportation Researchers Conference, 2025, Online, [Video]

[2] "A Lost Packet Recovery Technique for Robust Wireless Sensing", IMT-2030 (6G) Plenary Meeting of Wireless Technology Group, 2024, Shanghai

Main Honors And Awards

[1] The Hong Kong University of Science and Technology RedBird PhD Award, 2024

[2] Runner Up Prize (No.2 out of 776 teams) in AI/ML for 5G-Energy Consumption Modeling by ITU AI/ML in 5G Challenge, 2023

[3] Third Prize (No.6 out of 287 teams) in The First Wi-Fi Sensing Contest by Huawei, 2023

[4] Best Paper Award Finalist of Biomimetics in IEEE International Conference on Robotics and Biomimetics (ROBIO) 2023, 2023

[5] Provincial Second Prize in SPSS University Contest in Modeling, 2022

[6] Second Prize in Asia and Pacific Mathematical Contest in Modeling, 2022

[7] First-class Scholarship for Outstanding Student of Sun Yat-sen University, 2021 (also won scholarship in 2022, 2023)

[8] Meritorious Winner in the Mathematical Contest in Modeling, 2021 (also won the award in 2022)

[9] Provincial First Prize in the Chinese Mathematics Competitions, 2021

[10] Second Prize & Provincial First Prize in the National High School Mathematics League, 2019

Professional Activities

1. Society Membership:

• Computer Society: IEEE Student Membership, ACM Student Membership, CCF Student Membership

2. TPC Membership:

• Computer & Communication Conferences: IEEE WCNC Workshop 2024-2025, IEEE PIMRC Workshop 2024-2025, IEEE Globecom Workshop 2025, IEEE/CIC ICCC Workshop 2025

3. Technical Reviewer:

• Computer & Communication Conferences: IEEE ICASSP 2024-2026, AAAI 2026, IEEE ICME 2024-2025, IEEE WCNC 2024-2025, IEEE PIMRC 2024-2025, ICLR 2025, ACL ARR 2025, IEEE IJCNN 2025, IEEE AVSS 2025, IEEE Globecom 2025, IEEE/CIC ICCC 2025, IEEE MLSP 2025, IET IRC 2025, IEEE SMC 2023

• Transportation Conferences: HKSTS 2024-2025, BTR 2025

• Journals & Books: IEEE TMC, IEEE WCL, MTAP, Bentham Science Book

Teaching Activities

1. Interview:

• HKUST: JUPAS 2025

Skills and Interests

1. Programming Skills:

• Proficient in: Python, PyTorch, C/C++ (CCF-CSP:320, Top 0.8%)

• Familiar with: Matlab, MySQL, Git, Linux, ESP32

• Knowledgeable in: TensorFlow, Java, Web Scraping, QT

2. Language:

• English (IELTS:6.5, CET-4:605, CET-6: 561)

• Chinese (mother tongue)

3. Interests:

• Proficient in: Electric Guitar, Acoustic Guitar, Keyboard (Grade 10)

• Familiar with: Songwriting, Extreme Vocals, Electric Bass, Piano, Hulusi, Ukulele, Music Theory (Grade C)

• Knowledgeable in: Drums, Harmonica