Zijing Shi

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Research interests

My research interests encompass natural language processing (NLP), reinforcement learning (RL), and machine ethics. Currently, I am focused on the training and application of large language models (LLMs) to enhance their interactive decision-making capabilities, emphasizing trustworthiness, and ethical considerations.

Education

University of Technology Sydney — Sydney, Australia
Ph.D. in Computer Science — Mar. 2022 – Present
Mentors: Prof. Ling Chen, Dr. Zuo Hua

Shanghai University — Shanghai, China
M.Sc. in Management Science and Engineering — Sept. 2018 – June 2021
Mentor: Dr. Nan Jing
Thesis: A Deep Reinforcement Learning-based Investment Portfolio Optimization Strategy and Trading System

Shanghai Maritime University — Shanghai, China
B.Sc. in Management Science and Engineering — Sept. 2014 – June 2018
Final Year Project: Leveraging Financial Media Sentiment for Stock Price Forecasting through Naive Bayes and Deep Learning

Publications (conference)

CHBias: Bias Evaluation and Mitigation of Chinese Conversational Language Models
Jiaxu Zhao, Meng Fang, **Zijing Shi**, Yitong Li, Ling Chen, Mykola Pechenizkiy.
The 61st Annual Meeting of the Association for Computational Linguistics (ACL), 2023.
https://arxiv.org/pdf/2305.11262.pdf

Stay Moral and Explore: Learn to Behave Morally in Text-based Games
Zijing Shi, Meng Fang, Yunqiu Xu, Ling Chen, Yali Du.
The 11th International Conference on Learning Representations (ICLR), 2023.
https://openreview.net/forum?id=CtS2Rs_aYk

Self-imitation Learning for Action Generation in Text-based Games
Zijing Shi, Yunqiu Xu, Meng Fang, Ling Chen.
The 17th Conference of the European Chapter of the Association for Computational Linguistics (EACL), 2023.
https://aclanthology.org/2023.eacl-main.50/

Publications (journal)

Cross-sectional Analysis and Data-driven Forecasting of Confirmed COVID-19 Cases
Nan Jing, **Zijing Shi**, Yi Hu, Ji Yuan
Applied Intelligence, 2022.
https://doi.org/10.1007/s10489-021-02616-8

Forecasting High-frequency Price of Shanghai Copper Futures based on Attention Mechanism and CNN-LSTM (In Chinese)

Nan Jing, **Zijing Shi**, Yumin Shu
Chinese Journal of Management Science, 2020.
https://doi.org/10.16381/j.cnki.issn1003-207x.2020.0342

Publications (under review)

Human-Guided Moral Decision Making in Text-based Games
Zijing Shi, Meng Fang, Ling Chen, Yali Du, Jun Wang.
(Under Review, Anonymous Conference)

Large Language Model can be a Moral Compass through Reflection
Zijing Shi, Meng Fang, Ling Chen.
(Under Review, Anonymous Conference)

More than Minorities and Majorities: Understanding Multilateral Bias in Language Generation
Jiaxu Zhao, Yitong Li, **Zijing Shi**, Yulong Pei, Ling Chen, Mykola Pechenizkiy, Meng Fang.
(Under Review, Anonymous Conference)

Augmenting Neurosymbolic Reasoners via ChatGPT for Text-Based Games
Yudi Zhang, Meng Fang, **Zijing Shi**, Mykola Pechenizkiy.
(Under Review, Anonymous Conference)

Large Language Models are Neurosymbolic Reasoners
Shilong Deng, Meng Fang, Yudi Zhang, **Zijing Shi**, Ling Chen, Mykola Pechenizkiy, Jun Wang.
(Under Review, Anonymous Conference)

Industry experience

Peng Cheng Laboratory (PCL) Shenzhen, China
Research Intern at the Department of Intelligent Computing Sept. 2021 – Mar. 2022
• Extracted salient factor features from the cryptocurrency market, leveraging analytical techniques to distill meaningful insights.
• Innovatively developed quantitative trading strategies based on deep reinforcement learning, deployed them for real-world testing and performance evaluation.

Veighna Technology Co. Shanghai, China
Quantitative Development and Analysis Intern Jan. 2021 – May. 2021
• Collaborated with cross-functional teams to operate, upgrade and enhance the Veighna, a highly regarded open-source quantitative trading system framework boasting 21,000+ stars on GitHub.
• Created an array of innovative quantitative trading strategies utilizing Veighna.

Research experience

Optimizing Vehicle Scheduling for Electric Logistics Distribution
Mentor: Prof. Lifeng Mu (Shanghai University) Dec. 2018 – Apr. 2019
• Researched effects of various constraints (capacity, time window, fleet diversity, multi-trip, charging stations) on electric vehicle transport efficiency.
• Developed an advanced algorithm for optimizing EV transport routes, validated using JD.com's logistics data.
Summary of findings available here.

AI-Enhanced Marketing Strategies for Transportation Hubs
Mentor: Prof. Nan Jing (Shanghai University) Apr. 2018 – Mar. 2019
• Utilized advanced text analysis to categorize consumer attributes and behaviors.
• Devised intricate advertising strategies with cutting-edge recommendation algorithms for diverse consumer groups.
Secured funding via the Shanghai Soft Science Research Project initiative

Honors and scholarships

Distinguished Graduate of Shanghai University, Top 5%	2021
China National Scholarship for Postgraduate Studies, Top 1%	2020
First-Class Postgraduate Scholarship at Shanghai University	2020
National Second-Place Award in the 17th Annual China Postgraduate Mathematical Modeling Contest	2020
Runner-Up in China Institute of Innovation's Quantitative Investment Strategy Competition	2020
Second-Class Postgraduate Scholarship at Shanghai University	2019
National Third-Place Award in the 16th Annual China Postgraduate Mathematical Modeling Contest	2019
First-Class Postgraduate Scholarship at Shanghai University	2018
Distinguished Graduate of Shanghai Maritime University, Top 5%	2018
Best Final Year Project of of Shanghai Maritime University	2018
First-Class Undergraduate Scholarship at Shanghai Maritime University, Top 1%	2017

Skills

Programming

Proficient in Python, SQL, MATLAB, TensorFlow, PyTorch, Gym, Huggingface, NLTK, spaCy, and more.

Languages

Mandarin, English