

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

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)

Human-Guided Moral Decision Making in Text-based Games

Zijing Shi, Meng Fang, Ling Chen, Yali Du, Jun Wang.
The 38-th AAAI Conference on Artificial Intelligence, 2023.
(Special Track on Safe, Robust and Responsible AI)

Large Language Models are Neurosymbolic Reasoners

Shilong Deng, Meng Fang, Yudi Zhang, **Zijing Shi**, Ling Chen, Mykola Pechenizkiy, Jun Wang.
The 38-th AAAI Conference on Artificial Intelligence, 2023.

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 <i>Applied Intelligence</i> , 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 <i>Chinese Journal of Management Science</i> , 2020. https://doi.org/10.16381/j.cnki.issn1003-207x.2020.0342	
Publications (under review)	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)	
Industry experience	Peng Cheng Laboratory (PCL) Research Intern at the Department of Intelligent Computing • 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.	Shenzhen, China Sept. 2021 – Mar. 2022
	Veighna Technology Co. Quantitative Development and Analysis Intern • 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.	Shanghai, China Jan. 2021 – May. 2021
Research experience	Optimizing Vehicle Scheduling for Electric Logistics Distribution Mentor: Prof. Lifeng Mu (Shanghai University) • 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. <i>Summary of findings available here.</i>	
	AI-Enhanced Marketing Strategies for Transportation Hubs Mentor: Prof. Nan Jing (Shanghai University) • 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

UTS HDR WiEIT (Women in Engineering and IT) Award	2023
First place in UTS School of Computer Science Research Showcase	2023
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