# Jiashi Gao

+86-15623981229 ‖ gaojs2021@mail.sustech.edu.cn


## EDUCATION

**Southern University of Science and Technology** ***Supervisor**: Prof. Xuetao Wei* Shenzhen, China
PhD in *Intelligent Manufacturing and Robotics* *Sep 2021- Jul 2025(Expected)*
Thesis: "Enhancing Fairness in Artificial Intelligence Systems for Heterogeneous Human Participants"

**Huazhong University of Science and Technology** ***Supervisor**: Prof. Yongji Wang* Wuhan, China
M.Eng. in Aircraft Navigation, Guidance and Control *Sep 2016- Jun 2019*
Thesis: "Reentry Trajectory Optimization and Guidance Method for Lifting Vehicle"

**University of Electronic Science and Technology of China** Chengdu, China
B.Eng. in Measurement and Control Technology and Instruments *Sep 2012- Jun 2016*

## RESEARCH INTERESTS

My research interests have focused on identifying and finding solutions to the key societal challenges in artificial intelligence (AI). Specifically, I have investigated the interaction between sociology, economics, and AI to examine fairness, bias, stereotype issues in collaborative model training and human-AI collaboration.

## WORK EXPERIENCE

**Southern University of Science and Technology** *Oct 2020- Aug 2021*
Research assistant: Research on intelligent transportation systems ***Supervisor**: Prof. James Jianqiao Yu*

**Huawei Technologies Co., Ltd** *Jul 2019- Jan 2020*
Data engineer: Enterprise data lake construction and governance

## HONORS

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| Outstanding Contribution Award of the Year, WEI Lab@SUSTech | 2023 |
| Outstanding Trainee in Hardware Installation Training, Huawei Technologies Co., Ltd. | 2019 |
| Outstanding Graduate Scholarship (2 times), HUST | 2017, 2018 |
| School Outstanding Graduate, UESTC | 2016 |
| First Prize of National College Student Electronic Design Competition, UESTC | 2015 |
| People's Scholarship (2 times), UESTC | 2013, 2014 |
| Seagate Scholarship, UESTC | 2012 |

## SELECTED WORKS

### AI Fairness, Bias, Stereotype

[1] **Jiashi Gao**, Ziwei Wang, Xiangyu Zhao, Xin Yao, and Xuetao Wei. Does Egalitarian Fairness Lead to Instability? The Fairness Bounds in Stable Federated Learning Under Altruistic Behaviors. In The Thirty-eighth Annual Conference on Neural Information Processing Systems (**NeurIPS**). 2024.

[2] Junlei Zhou, **Jiashi Gao**, Xiangyu Zhao, Xin Yao, and Xuetao Wei. Association of Objects May Engender Stereotypes: Mitigating Association-Engendered Stereotypes in Text-to-Image Generation. In The Thirty-eighth Annual Conference on Neural Information Processing Systems (**NeurIPS, Spotlight** $\sim 3\%$). 2024.

[3] Ziyi Zhou, Xinwei Guo, **Jiashi Gao**, Xiangyu Zhao, Shiyao Zhang, Xin Yao, and Xuetao Wei. Unveiling the Bias Impact on Symmetric Moral Consistency of Large Language Models. In The Thirty-eighth Annual Conference on Neural Information Processing Systems (**NeurIPS**). 2024.

[4] **Jiashi Gao**, Ziwei Wang, Xiangyu Zhao, Xin Yao, and Xuetao Wei. Surviving in Diverse Biases: Unbiased Dataset Acquisition in Online Data Market for Fair Model Training. In Proceedings of the AAAI/ACM Conference on AI, Ethics, and Society (**AIES**), vol. 7, pp. 451-462. 2024.

[5] **Jiashi Gao**, Xin Yao, and Xuetao Wei. Anti-Matthew FL: Bridging the Performance Gap in Federated Learning to Counteract the Matthew Effect. In The 27th European Conference on Artificial Intelligence (**ECAI**), pp. 1967-1974. 2024.

[6] **Jiashi Gao**, Kexin Liu, Xinwei Guo, Junlei Zhou, Jiaxin Zhang, Xiangyu Zhao, Xin Yao, Xuetao Wei. Human Expertise Really Matters! Mitigating Unfair Utility Induced by Heterogenous Human Expertise in AI-assisted Decision-Making, under review.

[7] **Jiashi Gao**, Ziwei Wang, Xiangyu Zhao, Xin Yao, and Xuetao Wei. PFAttack: Stealthy Attack Bypassing Group Fairness in Federated Learning. arXiv preprint.

### Economics in Digital Assets Transactions

[1] **Jiashi Gao**, Ziwei Wang, and Xuetao Wei. An Adaptive Pricing Framework for Real-Time AI Model Service Exchange, in IEEE Transactions on Network Science and Engineering (**TNSE**), vol. 11, no. 5, pp. 5114-5129. 2024.

[2] Ziwei Wang, **Jiashi Gao**, and Xuetao Wei. Do NFTs' owners really possess their assets? A first look at the NFT-to-asset connection fragility. In Proceedings of the ACM Web Conference (**WWW**), pp. 2099-2109. 2023.

[3] **Jiashi Gao**, Ziwei Wang, and Xuetao Wei. Incentive Data Monetization: Robust Valuation for Divisible Assets in Partial-Purchasing Service. Major Revision. 2024.

### AI for Transportation Applications

[1] **Jiashi Gao**, Xinming Shi, and James Jianqiao Yu. Attn-CommNet: coordinated traffic lights control on large-scale network level. In 33rd IEEE International Conference on Tools with Artificial Intelligence (**ICTAI**), pp. 289-293. 2021.

[2] **Jiashi Gao**, Xinming Shi, and James Jianqiao Yu. Social-dualcvae: multimodal trajectory forecasting based on social interactions pattern aware and dual conditional variational auto-encoder. arXiv preprint.

### Evolutionary Computing

[1] Xinming Shi, **Jiashi Gao**, Leandro L. Minku, and Xin Yao. Evolving parsimonious circuits through Shapley value-based genetic programming. In Proceedings of the Genetic and Evolutionary Computation Conference Companion (**GECCO**), pp. 602-605. 2022.

[2] Xinming Shi, **Jiashi Gao**, Leandro L. Minku, James Jianqiao Yu, and Xin Yao. Second-order time delay reservoir computing for nonlinear time series problems. In 2021 IEEE Symposium Series on Computational Intelligence (**SSCI**), pp. 1-8. 2021.

## PRESENTATIONS

### Conferences & Forums

27th European Conference on Artificial Intelligence (ECAI 2024), Santiago de Compostela, Spain October 2024

### Seminar Talks

1st NeurIPS 2024 Seminar @ SUSTech, Shenzhen, China December 2024

## TEACHING EXPERIENCE

Teaching assistant, CSE5005: Advanced Computer Networks and Big Data Fall 2023

Teaching assistant, CS109: Introduction to Computer Programming Spring 2023

## PROFESSIONAL SERVICES

### Reviewer

IEEE Transactions on Network Science and Engineering (IEEE TNSE) 2024

International Conference on Learning Representations (ICLR) 2024

Conference on Neural Information Processing Systems (NeurIPS) 2024

ACM Multimedia (MM) 2023

Latin America Congress on Computational Intelligence (LA-CCI ) 2023