

Education

- Aug 2024 – Jul 2029 **Center on Frontiers of Computing Studies, School of Computer Science, Peking University, Beijing, China**
PhD Student, advised by Prof. Xiaotie Deng
- Aug 2020 – Jul 2024 **Tong Class, Yuanpei College, Peking University, Beijing, China**
B.E. in Artificial Intelligence and B.A. in Economics (Double Major)
GPA: 3.7/4.0.

Selected Conference Papers (* indicates equal contribution)

- 2025 **Enhancing Affine Maximizer Auctions with Correlation-Aware Payment**
Haoran Sun, Xuanzhi Xia, Xu Chu, Xiaotie Deng
Published at ICML 2026.
- 2025 **Benefits and Pitfalls of Reinforcement Learning for Language Model Planning: A Theoretical Perspective**
Siwei Wang*, Yifei Shen*, **Haoran Sun***, Shi Feng*, Shang-Hua Teng, Li Dong, Yaru Hao, Wei Chen
Published at ICLR 2026.
- 2025 **Game Theory Meets Large Language Models: A Systematic Survey**
Haoran Sun, Yusen Wu, Yukun Cheng, Xu Chu
Published at IJCAI 2025.
- 2024 **Scalable Virtual Valuations Combinatorial Auction Design by Combining Zeroth-Order and First-Order Optimization Methods**
Zhijian Duan*, **Haoran Sun***, Yichong Xia, Siqiang Wang, Zhilin Zhang, Chuan Yu, Jian Xu, Xiaotie Deng
Published at WWW 2026.
- 2024 **Mechanism Design for LLM Fine-tuning with Multiple Reward Models**
Haoran Sun, Yurong Chen, Siwei Wang, Wei Chen, Xiaotie Deng
Published at NeurIPS 2025.
- 2023 **A Scalable Neural Network for DSIC Affine Maximizer Auction Design**
Zhijian Duan, **Haoran Sun**, Yurong Chen, Xiaotie Deng
Published at NeurIPS 2023 (Spotlight).

Selected Preprints (* indicates equal contribution)

- 2026 **RL-VLA³: Reinforcement Learning VLA Accelerating via Full Asynchronism**
Haoran Sun*, Yongjian Guo*, Zhong Guan*, Shuai Di, Xiaodong Bai, Jing Long, Tianyun Zhao, Mingxi Luo, Hongke Zhao, Likang Wu, Xiaotie Deng, Xu Chu, Xi Xiao, Sheng Wen, Yicheng Gong, Junwu Xiong
Presented at ICLR 2026 Workshop on Scaling Post-training for LLMs
- 2026 **LERA: LLM-Enhanced RAG for Ad Auction in Generative Chatbots**
Haoran Sun, Xinrui Song, Xinyu Zhang, Zhaohua Chen, Xu Chu, Zhilin Zhang, Chuan Yu, Jian Xu, Bo Zheng, Xiaotie Deng
- 2026 **NoiseGate: Learning Per-Latent Timestep Schedules as Information Gating in World Action Models**
Wen Huang*, **Haoran Sun***, Yongjian Guo*, Yunxuan Ma, Haoran Li, Jing Long, Zhouying Mo, Zhong Guan, Yucheng Guo, Shuai Di, Junwu Xiong
- 2026 **Missing Old Logits in Asynchronous Agentic RL: Semantic Mismatch and Repair Methods for Off-Policy Correction**
Zhong Guan*, Yongjian Guo*, **Haoran Sun***, Wen Huang, Shuai Di, Junwu Xiong, Likang Wu, Hongke Zhao

- 2026 **Thousand-GPU Large-Scale Training and Optimization Recipe for AI-Native Cloud Embodied Intelligence Infrastructure**
JDT AI Infra Team
- 2025 **Game Theory Meets Large Language Models: A Systematic Survey with Taxonomy and New Frontiers**
Haoran Sun, Yusen Wu, Peng Wang, Wei Chen, Yukun Cheng, Xiaotie Deng, Xu Chu

Internships

- Sept 2025 **Research Intern, JD Technology, JD, Beijing, China**
 - Now ○ Engineering efficient and high-performance training algorithms for VLA models, mentored by Junwu Xiong (AI Infra Team).
- Feb 2025 **Research Intern, Alimama, Alibaba Group, Beijing, China**
 - Sept 2025 ○ Investigating mechanism design problems for online advertising, mentored by Zhilin Zhang (Advertising Group).
- Jun 2023 **Research Intern, Microsoft Research Asia, Beijing, China**
 - Mar 2024 ○ Researched the foundations of reasoning in LLMs under the mentorship of Wei Chen (Theory Group).

Academic Service

Workshop Organizer

- ICLR 2026 Workshop on AI for Mechanism Design and Strategic Decision Making (AIMS).

Peer Review

- Conferences: ICLR 2026, NeurIPS (2024-2026), ICML (2024-2026), WWW 2024, COLM 2026.
- Journal: IEEE Transactions on Consumer Electronics (TCE).

Selected Awards and Honors

- Dec 2024 **NeurIPS Auto-Bidding in Large-Scale Auctions Competition,** NeurIPS
 - 3rd Place in General Track, NeurIPS 2024.
- Aug 2023 **IJCAI Mahjong AI Competition,** IJCAI
 - 6th Place in IJCAI 2023; 8th Place in IJCAI 2024.
- June 2024 **Song Qingling Scholarship,** Peking University
- Oct 2023 **Yang Fuqing & Wang Yangyuan Academician Scholarship, Top 10%,** Peking University
- Oct 2023 **Outstanding Research Award,** Peking University

Skills, Interests & Others

Programming Languages: Python, \LaTeX , C/C++

Frameworks & Tools: PyTorch, Transformers, SGLang

Languages: Chinese (Native), English (CET-6: 560, CET-4: 622)