WEIHUA DU

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GHC 6711, Pittsburgh, PA 15213, US, 15206 Pittsburgh, US

EDUCATION

Ph.D. Student in Language Technologies Institute

Carnegie Mellon University

Aug. 2024 – Ongoing Pittsburgh, US

- Co-advised by Prof. Yiming Yang and Prof. Sean Welleck.

Bachelors of Engineering in Computer Science (Yao Class)

Tsinghua University

Sep. 2020 – Jun. 2024 Beijing, China

- GPA 3.94 / 4.00;
- Gold medalist at the 2018 China National Olympiad in Informatics (NOI), leading to direct admission into Tsinghua University.

Visiting Student

Massachusetts Institute of Technology

Feb. 2023 – Aug. 2023 Boston, US

- Advised by Prof. Joshua B. Tenenbaum and Prof. Chuang Gan.
- Specializing in Language Models as Agents and Embodied AI.

PUBLICATION (SORT BY PUBLICATION DATE IN DESCENDING ORDER. *DENOTES EQUAL CONTRIBUTION)

[1] Agentic-R1: Distilled Dual-Strategy Reasoning [link] arXiv

Authors: **Weihua Du**, Pranjal Aggarwal, Sean Welleck, and Yiming Yang

[2] Optimizing Temperature for Language Models with Multi-Sample Inference [link] ICML 2025

Authors: **Weihua Du**, Yiming Yang, Sean Welleck

[3] Constrained Human-AI Cooperation: An Inclusive Embodied Social Intelligence Challenge [link] NeurIPS D&B 2024

Authors: **Weihua Du***, Qiushi Lyu*, Jiaming Shan, Zhenting Qi, Hongxin Zhang, Sunli Chen, Andi Peng, Tianmin Shu, Kwonjoon Lee, Behzad Dariush, Chuang Gan

[4] T-Eval: Evaluating the Tool Utilization Capability of Large Language Models Step by Step [link] ACL 2024

Authors: Zehui Chen*, **Weihua Du***, Wenwei Zhang*, Kuikun Liu, Jiangning Liu, Miao Zheng, Jingming Zhuo, Songyang Zhang, Dahua Lin, Kai Chen, Feng Zhao

[5] Building Cooperative Embodied Agents Modularly with Large Language Models [link] ICLR 2024

Authors: Hongxin Zhang*, **Weihua Du***, Jiaming Shan, Qinhong Zhou, Yilun Du, Joshua B. Tenenbaum, Tianmin Shu, Chuang Gan

[6] HAZARD Challenge: Embodied Decision Making in Dynamically Changing Environments [link] ICLR 2024

Authors: Qinhong Zhou*, Sunli Chen*, Yisong Wang, Haozhe Xu, **Weihua Du**, Hongxin Zhang, Yilun Du, Joshua B. Tenenbaum, Chuang Gan

[7] Iteratively Learn Diverse Strategies with State Distance Information [link] NeurIPS 2023

Authors: Wei Fu, **Weihua Du**, Jingwei Li, Sunli Chen, Jingzhao Zhang, Yi Wu

[8] Automatic Truss Design with Reinforcement Learning [link] IJCAI 2023

Authors: **Weihua Du***, Jinglun Zhao*, Chao Yu, Xingcheng Yao, Zimeng Song, Siyang Wu, Ruifeng Luo, Zhiyuan Liu, Xianzhong Zhao, Yi Wu

SELECTED PRIZES

Outstanding Graduate of Yao Class | Top 20% graduates in Yao Class — Jun. 2024

SenseTime Scholarship | Top 30 undergraduates in AI within China — Dec. 2023

Zheng Geru Scholarship | Comprehensive Excellent Award in Tsinghua University, top 20% — Oct. 2023

Andrew C. Yao Award (Recognition Prize) | Scholarship in Yao Class, top 20% — Sep. 2023

Mr. and Mrs. Qu Yuzhi Scholarship | Academic & Sport Award in Tsinghua University — Oct. 2022

China Collegiate Programming Contest (CCPC), Weihai Site | Rank 4, **Gold Medal** — Nov. 2021

Mr. and Mrs. Huang Yicong Scholarship | Comprehensive Excellent Award in Tsinghua University, top 20% — Oct. 2021

China National Olympiad in Informatics (NOI) 2018 | Rank 32, **Gold Medal** — Aug. 2018

EXPERIENCE

Research Intern

MIT-IBM Watson AI Lab, Massachusetts Institute of Technology

Feb. 2023 – Jun. 2024 — Boston, US / Remote

- Advised by Prof. Joshua B. Tenenbaum and Prof. Chuang Gan;
- Developed cooperative embodied agents by leveraging Large Language Models (LLMs), focusing on communication and reasoning in complex embodied multi-agent environments.

Research Intern

Shanghai Artificial Intelligence Laboratory

Aug. 2023 – Jul. 2024 — Shanghai, China

- Advised by Dr. Wenwei Zhang and Dr. Kai Chen;
- Involved in the iterating of InternLM, focusing on improving tool calling capabilities.

Research Intern

IIIS, Tsinghua University

Jun. 2022 – Jan. 2023 — Beijing / Shanghai, China

- Advised by Prof. Yi Wu;
- Developed *AutoTruss*, a two-stage framework addressing the complex combinatorial optimization challenge of truss layout design in the building industry;
- Another work aimed to optimize rewards and discover diverse strategies, developing a diversity-driven RL algorithm, State-based Intrinsic-reward Policy Optimization (SIPO).

SERVICE

- Reviewer of ICML 2025, NeurIPS 2025, AAAI 2026.
- Student Organizing Committee of LTI-SRS 2025.

RESEARCH INTERESTS

LLM-Based Agent

Embodied AI

Reinforcement Learning

Cognitive Science

OTHERS

- Member of Tsinghua University Volleyball Team.
- Volunteer at the Student Development Center of Tsinghua University.
- Accumulated 187.0 hours of officially documented volunteer work during my undergraduate studies.

LANGUAGES

- Chinese: Native Speaker
- English: TOEFL 105