Yuhan Cao

✉ caoyh1@shanghaitech.edu.cn ·

🎓 Education

University of Wisconsin - Madison, Madison, Wisconsin, United States   2023 – 2023
Visiting Student in Computer Science (CS) Thematic Track

- cGPA: 3.91/4.0
- Selected Coursework: Introduction to Artificial Intelligence (A, Rank 1/354 in Final)

ShanghaiTech University, Shanghai, China   2020 – Present
B.Eng. in Computer Science (CS), expected June 2025

- cGPA over past two years: 3.71/4.0
- Subject Area GPA: 3.95/4.0
- Merit Student in 2022 (top 3% ∼ 7%)
- Selected Coursework: Algorithmic Game Theory, Algorithm Design and Analysis, Operation System

🛪 Research Experience

Shanghai Qi Zhi Institute Shanghai, China   Oct. 2024 – Now
Research Intern   advised by Prof. Tianxing He

Microsoft Research Asia Shanghai, China   Mar. 2024 – Oct. 2024
Research Intern   advised by Dr. Dongsheng Li, Prof. Kan Ren and Dr. Yansen Wang

Peking University Beijing, China   Jun. 2023 – Nov. 2023
Research Intern   advised by Dr. Zhaohua Chen and Prof. Xiaotie Deng

ShanghaiTech University Shanghai, China   Jul. 2022 – Now
Undergraduate Researcher   advised by Prof. Dengji Zhao

🖵 Selected Research Projects

Mechanism Design on Large Lauguage Model Multi-Agent Systems
Yuhan Cao and Tianxing He   Ongoing project

How Does LLM Know About Persuasion? Generate and Evaluate Persuasion Writing with Multi-Agent Framework
Yuhan Cao*, Zijian Lin*, Xiaoyang Liu, Jiahao Zhang, Han Zhang, Aaron Cui, Weimin Lyu and Yazhuo Zhou* Manuscript

- Co-lead this project.
- Proposed a multi-agent framework for persuasive writing and re-evaluated effective metrics for this task.
- Formulated a comprehensive paradigm for dataset design, as well as metrics and experimental design for persuasive writing.

Prediction of Persistent Drug-Seeking Behavior by Brain-Wide Network
Yuhan Cao*, Wenlei Zhang*, Xiaocheng Zhang, Yansen Wang, Kan Ren, Rongwei Zhai, Haifeng Jiang, Zhi-Qi Xiong, and Min Zhao   Manuscript

- Find the drug-seeking behavior in EEG signal of monkeys. Mainly design the machine learning model
- Be responsible for all coding experiments. Introduce Shapley Value for explainability.
- The majority of the writing about machine learning methods and experiments.

LLM Does Not Know How To Generate Test Cases: A Reasoning Deficiency in Competitive-Level Algorithm Problems

Yuhan Cao*(corresponding author), Zian Chen*, Yuxiang Zhu, Jiafu Tang, Yuxuan Zhou, Tianjun Yuan, Yiming Huang, and Tianxing He   Manuscript

- Lead this project and take full responsibility for the entire research project.
- Identify and evaluate a significant limitation of language models in solving algorithm problems. This limitation does not affect human judgment of problem difficulty or problem-solving but significantly impairs the performance of language models.
- Most of the experimental design and pipeline, as well as the majority of the writing.

Double Auction on Diffusion Network

Miao Li, Yuhan Cao and Dengji Zhao   AAAI 2024, Oral Presentation Received

- Contribute to the proposal of a novel incentive-compatible bilateral auction mechanism on social networks, which ensures stable revenue for auctions and outperforms traditional VCG mechanisms.
- Complete the proofs of the main theorems.
- Take full responsibility for the entire experimental design.

✈ Selected Teaching Experience

SI 100B & SI 100F (Introduction to Information Science)   Sep. 2021 – Now

Head Teaching Assistant in Spring 2022   Teaching Professor: Yue Qiu

(Head) Teaching Assistant in Fall 2021, 2022, 2023   Teaching Professor: Shenghua Gao

Teaching Assistant in Spring 2023   Teaching Professor: Rui Fan, Shu Yin

CS 101 (Algorithms and Data Structures)   Sep. 2022 – Jan. 2024

Teaching Assistant, Leader of Programming Assignments Team in Fall 2022, 2023   Teaching Professor: Dengji Zhao, Yuyao Zhang, Xin Liu and Hao Geng

CS 100 (Introduction to Programming)   Feb. 2022 – Jun. 2022

Teaching Assistant   Teaching Professor: Lan Xu and Laurent Kneip

CSCI-SHU 210 (Data Structures, NYU Shanghai)   Sep. 2024 – Now

Teaching Associate   Teaching Professor: Yik-Cheung Wilson Tam

⚙ Skills

- C (with STL): 8 years
- LaTeX: 5 years
- Python: 4 years
- C++: 1 year
- C#, Unity, RISC-V: 0.5 years

♡ Honors and Awards (Selected)

2nd Prize, Award on ICPC Hongkong Regional	Dec. 2024
2nd Prize, Rank 20, Award on CCPC Shanghai	Jun. 2024
1st in Honorable Mention, Award on ICPC EC Final	Jul. 2022
Outstanding Teaching Assistant	Jun. 2022, Jan. 2024 and & Jan. 2025

ⓘ Miscellaneous

- Personal Website: https://teafrogsf.github.io