Yingzi Ma

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RESEARCH INTERESTS

I am a first-year PhD student majoring in Information Science at the University of Wisconsin Madison, advised by Chaowei Xiao. I have been very fortunate to work with Prof. Colin TAN in 2022 during the SOC summer workshop at National University of Singapore. I started my internship in April 2022 with Prof. Lu Chen in the language model group of the XLANCE lab at Shanghai Jiao Tong University. Now, I am collaborating with Yulong Cao, an NVIDIA researcher at the NVIDIA Autonomous Vehicle Research group.

My research interests are:

- Multi-modal Large Language Models (MLLMs).
- End-to-end Autonomous Driving System.
- Parameter-efficient fine-tuning (PEFT) of large-scale Pre-trained Language Models (PLMs).

EDUCATION

University of Wisconsin Madison, Madison, U.S. Sept. 2024 | Jun. 2029 (expected)
PhD in Information Science

Sichuan University, Chengdu, China Sept. 2020 | Jun. 2024 (expected)
Bachelor of Engineering (BEng) in Artificial Intelligence Cumulative GPA: 3.84/4.00
China National Scholarship, 2021 Score Point Average: 91.26 (Rank, 3/39)

Sichuan University, Chengdu, China Sept. 2019 | Jun. 2020
Bachelor of Arts (BA) in Tourism Management Cumulative GPA: 3.86/4.00
China National Scholarship, 2020 Score Point Average: 90.67 (Rank, 1/102)

PUBLICATIONS

Conference paper

- **Dolphins: Multimodal Language Model for Driving** [Autonomous Driving, MLLM]
  Yingzi Ma, Yulong Cao, Jiachen Sun, Marco Pavone, Chaowei Xiao
  Published on ECCV 2024. [WebPage][PDF]

- **Benchmarking Vision Language Model Unlearning via Fictitious Facial Identity Dataset** [MLLM]
  Yingzi Ma, Jiongxiao Wang, Fei Wang, Siyuan Ma, Jiazhao Li, Xiujun Li, Furong Huang, Lichao Sun, Bo Li, Yejin Choi, Muhao Chen, Chaowei Xiao
  Published on ICLR 2025.

- **MIXLORA: Enhancing Large Language Models Fine-Tuning with LoRA-based Mixture of Experts** [PEFT]
  Dengchun Li, Yingzi Ma, Naizheng Wang, Zhengmao Ye, Zhiyuan Cheng, Yinghao Tang, Yan Zhang, Lei Duan, Jie Zuo, Cal Yang, Mingjie Tang
  Arxiv. 2024. [PDF]

- **MULTI: Multimodal Understanding Leaderboard with Text and Images** [MLLM]
  Zichen Zhu, Yang Xu, Lu Chen, Jingkai Yang, Yichuan Ma, Yiming Sun, Hailin Wen, Jiaqi Liu, Jinyu Cai, Yingzi Ma, Situo Zhang, Zihan Zhao, Liangtai Sun, Kai Yu
  Arxiv. 2024. [PDF]

- **Understanding the Multimodal Instruction Format for In-Context Learning** [MLLM]
  Yingzi Ma, Chunyuan Li, Chaowei Xiao
  Preprint. 2023.

- **CAM-GUI: A Conversational Assistant on Mobile GUI** [MLLM]
  Zichen Zhu, Liangtai Sun, Jingkai Yang, Yifan Peng, Wutao Li, Weilin Zou, Ziyuan Li, Lu Chen, Yingzi Ma, Danyang Zhang and Kai Yu
  Published on *NCMMSC*. 2023. [PDF]

- **SK-Adapter: Syntax Enhanced Pre-trained Language Models with Structured Knowledge Adapter** [**PEFT**]
  <u>Yingzi Ma</u>, Da Ma, Zichen Zhu, Yunyan Zhang, Ruihui Zhao, Huimin Wang, Yefeng Zheng and Lu Chen
  Preprint. 2023

PROFESSIONAL SERVICES

- ICLR 2024 Reviewer
- ICLR 2025 Reviewer

ACADEMIC EXPERIENCE

University of Wisconsin, Madison (UWM) Madison, WI 53706, United States
Research Intern Apr. 2023 | Present

- Working with Prof. Chaowei Xiao at University of Wisconsin–Madison and Chunyuan Li, a principal researcher at Microsoft Research, Redmond, we Exploring the effects of different data formats on multimodal in-context learning.
- Collaborating with Prof. Chaowei Xiao and some researchers from NVIDIA, we aim to extend the powerful capabilities of MLLMs to autonomous driving-related videos.
- All tasks, including coding and conducting experiments, were carried out solely by me in these two research projects.

Shanghai Jiao Tong University (SJTU) Shanghai, China
Research Intern May. 2022 | Apr. 2023

- Work as a research intern advised by Prof. Lu Chen in the language model group of the Cross Media Language Intelligence Lab (X-LANCE Lab) at SJTU.
- Contribute to enhancing the performance of PLMs on NLU and NLG tasks by injecting syntax structure information through structured knowledge adapters (SK-Adapter).
- Collaborate with researchers from Tencent Jarvis Lab to apply PLMs on the Chinese medical corpus.

National University of Singapore (NUS) Singapore
Summer Intern Apr. 2022 | Aug. 2022

- Attend the embedding system and deep learning topic in the NUS SOC summer workshop and I am very fortunate to be advised by Prof. Colin TAN.
- Achieve A+ grade in all courses, which was evaluated based on assignments, quizzes, and projects.
- Win the **First Prize** in the topic Embedded System and Deep Learning with the final project Baby Care.

Sichuan University (SCU) Chengdu, China
Team Member Sept. 2021 | Sept. 2022

- Collaborate with four other members of a team to carry out a project of **CBCT jaw region segmentation method based on context fusion mechanism**.
- Attend the National College Students' Innovation and Entrepreneurship Training Program, 2022, and receive the provincial-level assessment.
- Publish a patent for an invention as the first inventor (**CN115578406A**).

SKILLS

- **Languages:** Mandarin, English, Japanese
- **Programming:** Python, C/C++, LaTeX, MATLAB, Mathematica, Javascript
- **Machine Learning:** PyTorch, TensorFlow, Sklearn, PaddlePaddle, Stable_baselines3
- **Tools:** SQL, Shell, Git, Slurm
- **Other:** SPSS, Linux (openSUSE, Ubuntu), Mac OS, Windows OS

AWARDS

- **Finalist,** Mathematical Competition In Modeling (MCM), 2022
- **Honorable Mention,** Interdisciplinary Contest In Modeling (ICM), 2021
- **2nd Award,** Contemporary Undergraduate Mathematical Contest in Modeling (CUMCM), 2021
- **2nd Award,** Chinese Mathematics Competitions (CMC), 2020

MISCELLANEOUS

- I also love to play table tennis, Go (Weiqi), and clarinet.
- I really like anime because it shows an ideal world that could not exist in reality.