Maojia Song

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Education

Singapore University of Technology and Design 01/2024 – Present
Ph.D., Information Systems Technology and Design **Main-Advisor: Soujanya Poria**
Co-Advisors: Dorien Herremans

University of Leeds 09/2019 – 08/2023
B.Eng., Electronic and Electrical Engineering **Rank: 1st in the department**
First-Class Honours

Work Experience

Research Assistant 09/2023 – 12/2023
DeCLaRe Lab, Singapore University of Technology and Design
Supervisor: Soujanya Poria

Undergraduate Intern 03/2022 – 09/2022
Business AI Lab, Nanyang Technological University
Supervisor: Teoh Teik Toe

Undergraduate Intern 10/2021 – 04/2022
Computer Laboratory, University of Cambridge
Supervisor: Pietro Liò

Honors & Awards

Google Gemini Research Access Grant 2025
AI Singapore PhD Fellowship 2025
OpenAI Researcher Access Program Grant 2024
Outstanding Student in InternLM Camp, Shanghai AI Laboratory 2024
Doctoral Research Scholarship granted by MOE, Singapore 2024
Best Undergraduate Thesis Finalist by EEE, University of Leeds 2023
Winner of U.S.-China Young Maker Competition 2021

Publications (* *denotes equal contributions*)

[8] **Maojia Song**, Liu Renhang, Xinyu Wang, Yong Jiang, Pengjun Xie, Fei Huang, Soujanya Poria, Jingren Zhou. "Demystifying Deep Search: A Holistic Evaluation with Hint-free Multi-Hop Questions and Factorised Metrics." *arXiv preprint.* 2025.

Submitted to ICLR 2026. **Under Review**

[7] Yida Zhao, Kuan Li, Xixi Wu, Liwen Zhang, Ding-Chu Zhang, Baixuan Li, **Maojia Song**, Zhuo Chen, Chenxi Wang, Xinyu Wang, Yong Jiang, Kewei Tu, Pengjun Xie, Fei Huang, Jingren Zhou. "E-GRPO: Enhancing Policy Optimization for Search Agents with Synthetic-Data Entities." *arXiv preprint.* 2025.

Submitted to ICLR 2026. **Under Review**

[6] Jiayi Zhang, Yiran Peng, Fanqi Kong, Yifan Wu, Zhaoyang Yu, Jinyu Xiang, Jianhao RUAN, Yingchao Li, **Maojia Song**, Bang Liu, Chenglin Wu, Yuyu Luo. "Automating Environments For Measuring Agent Learning." *arXiv preprint.* 2025.

Submitted to ICLR 2026. **Under Review**

[5] Liangcai Su*, Zhen Zhang*, Guangyu Li*, Zhuo Chen*, Chenxi Wang*, **Maojia Song***, Xinyu Wang*, et al. "Scaling Agents via Continual Pre-training." *arXiv preprint.* 2025.

Submitted to ICLR 2026. **Under Review**

[4] **Maojia Song**, Tej Deep Pala, Amir Zadeh, Chuan Li, Soujanya Poria. "LLMs Can't Handle Peer Pressure: Crumbling under Multi-Agent Social Interactions." *arXiv preprint.* 2025.

Submitted to ICLR 2026. **Under Review**

[3] Weisheng Jin, **Maojia Song**, Tej Deep Pala, Yew Ken Chia, Amir Zadeh, Chuan Li, Soujanya Poria. "PromptDistill: Query-based Selective Token Retention in Intermediate Layers for Efficient Large Language Model Inference." *arXiv preprint.* 2025.

[2] Yew Ken Chia, Liying Cheng, Hou Pong Chan, **Maojia Song**, Chaoqun Liu, Mahani Aljunied, Soujanya Poria, Lidong Bing. "M-Longdoc: A Benchmark for Multimodal Super-Long Document Understanding and a Retrieval-Aware Tuning Framework." In: *Proceedings of EMNLP.* 2025.

[1] **Maojia Song**, Shang Hong Sim, Rishabh Bhardwaj, Hai Leong Chieu, Navonil Majumder, Soujanya Poria. "Measuring and Enhancing Trustworthiness of LLMs in RAG through Grounded Attributions and Learning to Refuse." In: *Proceedings of ICLR.* 2025.

Oral

Projects

Counterfactual Evaluation of LLMs: Disentangling Reasoning from Knowledge 2023

- Designed an evaluation framework targeting LLM reasoning and knowledge abilities using counterfactual facts to isolate memory-based responses from genuine understanding.
- Developed and synthesized counterfactual test datasets using GPT-4 to assess LLM responses to logical and conceptual shifts.
- Evaluated GPT-4 and Llama2 models, revealing GPT-4's strengths in reasoning but weaknesses in knowledge comprehension, while Llama2 showed weaker overall performance but comparatively better knowledge understanding.

Enhancing Vision-Language Model for Movie Scene Understanding 2024

- Developed a Vision-Language model using InternViT for visual encoding, and Qwen2 as the base language model, optimizing all components through a three-stage training process to enhance VQA performance across both fine-grained and complex questions.
- Designed a three-stage training recipe for complex, fine-grained scene understanding: first, detailed captions and scene images are used to fine-tune the visual encoder; second, the projector and LLM are further optimized with fine-grained VQA; and finally, all components are refined using additional movie frames sampled by similarity and complex VQA tasks designed to uncover the underlying answers behind simple visual relationships.

Invited Talks

A*STAR CFAR RAG&DeepResearch 07/2025
*A*STAR Centre for Frontier AI Research*

SIRION Research Integrity Conference 2025 05/2025
Singapore Institutional Research Integrity Offices Network

SSNLP 2024 11/2024
Singapore Symposium on Natural Language Processing

Teaching

Teaching assistant

- 50.045 Information Retrieval — Fall 2024
  Instructor: Soujanya Poria
- 50.006 User Interface Design and Implementation — Fall 2024
  Instructor: Simon Perrault

Professional Services

Reviewer

- ICLR 2025
- ACL 2025
- EMNLP 2025