Chenkai Ma

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Education

Ph.D. in Computer Science, National University of Singapore (NUS) *07/2024 - Present*

Research Interests: Multi-Armed Bandit, Online Learning.
Supervisor: Jonathan Scarlett.

M.S., University of Electronic Science and Technology of China (UESTC) *09/2021 - 06/2024*

Major in Computer Science and Technology.
GPA: 3.95/4.0; Supervisor: Ke Qin.

B.S., University of Electronic Science and Technology of China (UESTC) *09/2017 - 06/2021*

Major in Software Engineering.
GPA: 3.98/4.0.

Publications and Preprints

[1] Batched Kernelized Bandits: Refinements and Extensions
Chenkai Ma, Keqin Chen, Jonathan Scarlett.
arXiv preprint (arXiv:2603.12627) [Paper].

[2] POE: Process of Elimination for Multiple Choice Reasoning
Chenkai Ma, Xinya Du.
EMNLP 2023 [Paper].

[3] Prompt Engineering and Calibration for Zero-Shot Commonsense Reasoning
Chenkai Ma.
Tiny Papers @ ICLR 2023 [Paper].

Research Experience

Contextual Kernelized Bandits

Advised by Jonathan Scarlett (NUS) *06/2025 - present*

- Collaborating with Nilava Metya (Rutgers) on regret bounds for contextual kernelized bandits.

Batched Kernelized Bandits: Refinements and Extensions

Advised by Jonathan Scarlett (NUS) *12/2024 - present*

- Refined and extended existing results on batched kernelized bandits.
- Resulted in an arXiv preprint.

Process of Elimination for Multiple Choice Reasoning

Advised by Xinya Du (UT Dallas) *04/2023 - 12/2023*

- Developed a prompting technique enabling language models to mimic human-like elimination processes in multiple-choice reasoning tasks.
- Showcased the method's efficacy, notably in logical reasoning tasks.
- Resulted in an EMNLP 2023 paper.

Prompt Engineering and Calibration for Zero-Shot Commonsense Reasoning

Independent Project *02/2023 - 05/2023*

- Explored the impact of prompt engineering and calibration on enhancing small language models in multiple-choice commonsense reasoning.
- Concluded that optimal methods differ by model, but their combination often reduces performance.
- Resulted in a Tiny Paper @ ICLR 2023.

Mitigating the Surface Form Problem in Unsupervised Commonsense Reasoning by Prefixing and Reweighting

Advised by Forrest Sheng Bao (ISU) *09/2022 - 05/2023*

- Proposed two unsupervised methods to debias language models from favoring options with common surface (literal) forms in multiple-choice reasoning tasks.
- Achieved consistent gains across models like GPT-2, GPT-3, and FLAN-T5.
- Initially submitted research to EACL 2023, later revised and resubmitted to ACL 2023.

A Chinese Relation Extraction System Based On Pretrained Language Models

Co-advised by Ke Qin (UESTC) and Dayong Zhu (UESTC) *10/2020 - 05/2021*

- Proposed three modifications to a baseline relation extraction system for better performance and efficiency.
- Secured rankings of 128/2148 in the first round and 60/102 in the second during the 2021 Language and Intelligence Challenge (Multi-format Information Extraction task).
- Concluded as an undergraduate project.

3D Map Reconstruction and Real Time Localization

Advised by Yong Liao (UESTC) *09/2019 - 05/2020*

- Conducted an in-depth literature review on Simultaneous Localization and Mapping (SLAM) and enhanced an established SLAM framework.

Teaching Experience

Optimisation Algorithms *08/2025 - 12/2025*
Teaching Assistant Instructor: Diptarka Chakraborty (NUS)
Embedded System Design *02/2020 - 05/2020*
Teaching Assistant Instructor: Yong Liao (UESTC)

Service

Conference Reviewer
ACL 2023, EMNLP 2023.

Technical Strengh

Programming Languages	Python, C++, Java, HTML.
Frameworks	Huggingface, Pytorch, PaddlePaddle.
Data Science	NumPy, Matplotlib, pandas.
Tools	Visual Studio, Git, Anaconda.

Honors and Awards

Honored Undergraduate Students of Sichuan *2021*
1st Prize, 10th Mathematics Competition of Chinese College Students *11/2018*
China National Scholarship *2018*