

Third year Ph.D student at The University of Hong Kong, focusing on the intersection of Agent decision making and AI4Science.  
**Areas of expertise:** Natural Language Processing, Computational Biology, Large Language Model Agents, Generalization Theory

## EDUCATION

**PhD, Computer Science**, The University of Hong Kong, co-advised by Lingpeng Kong and Tao Yu **September 2022–**  
**Bachelor of Science, Machine Intelligence Major**, Peking University **September 2018 — July 2022**

## EXPERIENCE

**Research Intern** **April 2023 — December 2023**  
**Foundation Model Group** Microsoft Research AI for Science

- Work on AI drug discovery and biosequence multimodal LLM pretraining.

**Research Assistant** **July 2019 — July 2022**  
**Sigma Lab, supervised by Zhihong Deng** Peking University

**Research Intern** **January 2021 — October 2021**  
**DeepGraph Lab, supervised by Jian Tang** MILA - Quebec AI Institute

**Research Intern** **November 2021 — July 2022**  
**Bing Advertisement Group** Microsoft Beijing

## PUBLICATIONS

### Large Language Model Reasoning and Agents

- Ma et al, *Non-myopic Generation of Language Models for Reasoning and Planning*. **ICLR 2025**
- Ma, Zhang, Zhu & Yang et al, *AgentBoard: An Analytical Evaluation Board of Multi-turn LLM Agents*. **NeurIPS 2024 Oral**
- Zhao et al, *Empowering Large Language Model Agents through Action Learning*. **COLM 2024**
- Sun et al, *A Survey of Neural Code Intelligence: Paradigms, Advances and Beyond*. **Preprint**
- Feng et al, *A Survey on Large Language Model-Based Social Agents in Game-Theoretic Scenarios*. **Preprint**

### AI4Science Topics

- Ma et al, *Retrieved Sequence Augmentation for Protein Representation Learning*. **EMNLP 2024**
- Zhao et al, *GIMLET: A Unified Graph-Text Model for Instruction-Based Molecule Zero-Shot Learning*. **NeurIPS 2023**
- Xu et al, *PEER: A Comprehensive and Multi-Task Benchmark for Protein Sequence Understanding*. **NeurIPS 2022**
- Zhu et al, *TorchDrug: A Powerful and Flexible Machine Learning Platform for Drug Discovery*. **Preprint**
- Zhao et al, *Benchmarking and Enhancing Large Language Models for Biological Pathway Reasoning*. **Preprint**

### Generalization Theory

- Wang & Ma et al, *A Challenging Benchmark for Low-Resource Learning*. **ACL 2024 Findings**
- Zhao, Ma & Dong et al, *Certified Robustness Against Natural Language Attacks by Causal Intervention*. **ICML 2022**
- Ma & Zhang et al, *Switch-GPT: An Effective Method for Constrained Text Generation under Few-Shot Settings*. **AAAI 2022 Abstract**
- Yuan et al, *KS-Lottery: Finding Certified Lottery Tickets for Multilingual Language Models*. **NAACL 2025**
- Zhao et al, *Domain Adaptation via Maximizing Surrogate Mutual Information*. **Long Presentation at IJCAI 2022**

## SERVICE

**2021** Teaching assistant for course "Introduction to Artificial Intelligence — Natural Language Processing" at Peking University  
**2022** Teaching assistant for course "Introduction to Artificial Intelligence — Natural Language Processing" at Peking University  
**2023** Teaching assistant for course "COMP 3314 Machine Learning" at The University of Hong Kong  
**2024** Teaching assistant for course "COMP 3314 Machine Learning" at The University of Hong Kong  
**2024** Review for ICML, NeurIPS, ICLR, AAI, AISTATS, ARR

## AWARDS & HONORS

**2019** First Prize ( **National Mathematical Modeling Competition for College Students** )  
**2020** Peking University Learning Excellence Award  
**2024** Oral Award ( **NeurIPS 2024, Top 0.4%** )  
**2024** Top Reviewers ( **NeurIPS 2024, Top 10%** )