Hao Li

Personal Homepage 18th.leolee@gmail.com Github

EDUCATION

University of Electronic Science and Technology of China
Master, computer science *Sep 2021 – Present*
Co-advised by Prof. Jingkuan Song, Prof. Lianli Gao, and Prof. Heng Tao Shen

Northeast Forestry University
B.S., computer science (*GPA: 3.82/4.00*) *Sep 2017 – Jul 2021*

RESEARCH EXPERIENCE

NExT++, National University of Singapore (link) *Jul 2023 – Present*
Superviser: Prof. Tat-Seng Chua, **Mentor:** Dr. An Zhang

- **High-Dimension-based Fast Denoising for Multimodal Robust Learning.** Utilizing model bias in high dimension to quickly and precisely recognize the noisy vision-language pair, achieving robust learning.
- **Multi-agent Simulation Sandbox based on the Large language Model for Recommendation.** Utilizing LLM to initialize multiple agents as the consumers, building a recommendation simulation system.

Center for future media (link) *Sep 2021 – Present*
Co-supervisors: Prof. Jingkuan Song, Prof. Lianli Gao, and Prof. Heng Tao Shen

- **Multi-modal Representation Diversity by Probabilistic Modeling.** A novel and reasonable metric optimization method is proposed to enhance the probabilistic representation diversity.
- **The Aleatoric Uncertainty Quantification for Cross-modal Retrieval.** A prototype-based uncertainty quantification approach is proposed to make the multi-modal model provide trustworthy predictions.

PUBLICATIONS

- **Hao Li**, Jingkuan Song, Lianli Gao, Pengpeng Zeng, Haonan Zhang, Gongfu Li. "A Differentiable Semantic Metric Approximation in Probabilistic Embedding for Cross-Modal Retrieval". ***NeurIPS2022***. pdf
- **Hao Li**, Jingkuan Song, Lianli Gao, Xiaosu Zhu, Heng Tao Shen. "Prototype-based Aleatoric Uncertainty Quantification for Cross-modal Retrieval". ***NeurIPS2023***. pdf
- Xu Zhang*, **Hao Li***, Mang Ye. "Negative Pre-aware for Noisy Cross-modal Matching". ***AAAI2024***. (**on Submitted**)
- An Zhang, Leheng Sheng, Yuxin Chen, **Hao Li**, Yang Deng, Xiang Wang, Tat-Seng Chua. "On Generative Agents in Recommendation". ***WWW2024***. (**on Submitted**) pdf

AWARDS AND COMPETITIONS

- RoboMaster University Championship 2018 (**Regional Champion**)
- RoboMaster University Technical Challenge 2018 (**Global Third Place**)
- RoboMaster University Technical Challenge 2019 (**Global Second Prize**)
- China Undergraduate Mathematical Contest in Modeling 2020 (**National Second Prize**)
- National Artificial Intelligence Innovation and Application Competition 2022 (**National First Prize**)

RESEARCH INTERESTS

- My research mainly focuses on **Multi-modality**, and **Trustworthy Learning**. Current multimodal works generally focus on the performance, and resultant little work explore multimodal theory, so I pursue the construction of multimodal theory.
- Now I'm also interested in **AI Agent** and **Natural Language Processing**. I think **AI Agent** is a very promising direction to simulate our real world. Most of the work are based on large language models. How interesting it would be if we introduce multi-modal data for the agents?
- **Robotics** also attracts me. I have a long-term experiences in robot competitions, obtaining several robotics skills.