Yu Wang

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RESEARCH INTERESTS

Equipping LLM with Human-like Memory: **Lifelong Learning for LLMs** (Eliminating Continual Pretraining); **Long Context Language Modeling** (as a downstream task);
Multi-Modal Understanding and Generation: **Multimodal Memory-Based Understanding** (Enabling LLM to hear and see); **Diffusion Models** (For image/video generation).

EDUCATION

University of California, San Diego   *Sept. 2022 ∼ present*
PhD: Computer Science Engineering
Advisor: Julian McAuley

University of Science and Technology of China   *Sept. 2018 ∼ July 2022*
BS: School of the Gifted Young (Skipped the third year in high school)
Overall GPA: 3.95/4.3 (91.42/100)   **Ranking**: 2/28
Advisor: Xiangnan He

WORK EXPERIENCE

Amazon; Mentor: **Yifan Gao**;   *June. 2023 ∼ Dec. 2023*
Topic: *Emulating Human Memory: Towards Life-long Learning LLM*
Details: Equipped Large Language Models (LLMs) with an expansive memory pool in the form of latent space, which is uniquely designed to be updated solely through the forward pass. We have pretrained and validated memory-equipped models based on Llama-7B and Openllama-3B models.

PUBLICATIONS[1]

Deciphering Compatibility Relationships with Textual Descriptions via Extraction and Explanation. PDF
Yu Wang, Zexue He, Zhankui He, Hao Xu, Julian McAuley.
Accepted to AAAI 2024.

Robust and Interpretable Medical Image Classifiers via Concept Bottleneck Models. PDF
An Yan, Yu Wang, Petros Karypis, Zexue He, Chengyu Dong, Zihan Wang, Yiwu Zhong, Jingbo Shang, Amilcare Gentili, Chun-Nan Hsu, Julian McAuley.

MedEval: A Multi-Level, Multi-Task, and Multi-Domain Medical Benchmark for Language Model Evaluation. PDF
Zexue He, Yu Wang, An Yan, Yao Liu, Eric Y Chang, Amilcare Gentili, Julian McAuley, Chun-Nan Hsu.
Accepted to EMNLP 2023.

Learning Concise and Descriptive Attributes for Visual Recognition. PDF
An Yan*, Yu Wang*, Yiwu Zhong, Chengyu Dong, Zexue He, Yujie Lu, William Yang Wang, Jingbo Shang, Julian McAuley.
Accepted to ICCV 2023.

Differentiable Invariant Causal Discovery. PDF
Yu Wang, An Zhang, Xiang Wang, Xiangnan He, Tat-Seng Chua.

Interpretable Outlier Summarization. PDF
Yu Wang, Lei Cao, Yizhou Yan, Samuel Madden.

Probabilistic and Variational Label Denoising.
Yu Wang, Xin Xin, Zaiqiao Meng, Xiangnan He, Joemon Jose, Fuli Feng.
Accepted to TORS (Transactions for Recommender Systems).

Controlling Bias Exposure for Fair Interpretable Predictions PDF
Zexue He, Yu Wang, Julian McAuley, Bodhisattwa Prasad Majumder.

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[1]The mark "*" on the names means equal contribution.

Accepted to EMNLP 2022 (findings).

AutoOD: Automatic Outlier Detection. [PDF](PDF)
Lei Cao, Yizhou Yan, **Yu Wang**, Samuel Madden, Elke A. Rundensteiner.
Accepted to SIGMOD 2023.

Improving Out-of-Distribution Robustness via Selective Augmentation. [PDF](PDF)
Huaxiu Yao*, **Yu Wang***, Sai Li, Weixin Liang, Linjun Zhang, James Zou, Chelsea Finn.
Accepted to ICML 2022.

Learning Robust Recommenders through Cross-Model Agreement. [PDF](PDF)
Yu Wang, Xin Xin, Zaiqiao Meng, Xiangnan He, Joemon Jose, Fuli Feng.
Accepted to WWW 2022.

Meta-learning with an Adaptive Task Scheduler. [PDF](PDF)
Huaxiu Yao*, **Yu Wang***, Peilin Zhao, Mehrdad Mahdavi, Defu Lian, Ying Wei, Chelsea Finn
Accepted to NeurIPS 2021.

AWARDS AND HONORS

- Rose Fund New Lotus Scholarship (For outstanding research achievements).   USTC, 2021.
- Baosteel Scholarship (One out of 402 students in School of the Gifted Young).   USTC, 2021.
- Rose Fund Public Affairs Scholarship (For active leadership).   USTC, 2021.
- Cyrus Tang Foundation Moral Education Scholarship.   USTC, 2020.
- Huawei Scholarship (Top 3% of class).   USTC, 2020.
- Excellent Student Scholarship – Gold (Top 3% of class).   USTC, 2019.
- Provincial first prize in College Mathematics Competition(At most Top 7%).   Anhui Province, 2019.