

Yifan Yu

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EDUCATION

University of Illinois Urbana-Champaign, Urbana IL

08/2024 - 12/2028

Doctor of Philosophy | Computer Science

Georgia Institute of Technology, Atlanta GA

08/2020 - 05/2024

Bachelor of Science | Computer Science

Honors: Faculty Honor, Presidential Undergraduate Research Award

PUBLICATION

IC-Cache: Efficient Large Language Model Serving via In-context Caching

Yifan Yu*, Yu Gan*, Nikhil Sarda, Lillian Tsai, Jiaming Shen, Yanqi Zhou, Arvind Krishnamurthy, Fan Lai, Henry M. Levy, David Culler

Accepted by The 31st Symposium on Operating Systems Principles (SOSP), 2025

CORRECT: CONDensed eRRor RECOgnition via knowledge Transfer in multi-agent systems

Yifan Yu, Moyan Li, Shaoyuan Xu, Jinmiao Fu, Fan Lai, Bryan Wang

In submission to International Conference on Learning Representations (ICLR), 2026

LoftQ: LoRA-Fine-Tuning-Aware Quantization for Large Language Models

Yixiao Li*, **Yifan Yu***, Chen Liang, Pengcheng He, Nikos Karampatziakis, Weizhu Chen, Tuo Zhao

*Accepted by International Conference on Learning Representations (ICLR), 2024, **Oral Presentation***

LoSpase: Structured Compression of Large Language Models based on Low-Rank and Sparse Approximations

Yixiao Li*, **Yifan Yu***, Qingru Zhang, Chen Liang, Pengcheng He, Weizhu Chen, Tuo Zhao

Accepted by International Conference on Machine Learning (ICML), 2023

OPPO: accelerating ppo-based rlhf via pipeline overlap

Kaizhuo Yan*, Yingjie Yu*, **Yifan Yu**, Shraddhaa Mohan, Haizhong Zheng, Fan Lai

In submission to International Conference on Learning Representations (ICLR), 2026

Single-agent or Multi-agent Systems? Why Not Both?

Mingyan Gao*, Yanzi Li*, Banruo Liu*, **Yifan Yu**, Phillip Wang, Ching-Yu Lin, Fan Lai

In submission to The Thirty-Ninth Annual Conference on Neural Information Processing Systems (NIPS), 2025

RESEARCH

Research Assistant at AISys Lab.

08/2024 – Present

- Worked on efficient serving of LLM facing substantial numbers of requests advised by Prof. Fan Lai
- Implemented a system prototype that can significantly improve the latency and throughput of LLM servings as presented in IC-Cache paper leveraging the in-context learning theory; supported vllm, Gemini backend, and Langchain backends.

Research Assistant at FLASH (Foundations of LeArning Systems for Alchemy)

10/2021 – 05/2024

- Worked on improving the efficiencies of large language models with Prof. Tuo Zhao.
- Combined the pruning methods and low rank decomposition as presented in LoSparse paper; implemented the codes and conducted the experiments with Huggingface and PyTorch
- Proposed and implemented an alternative optimization method to minimize the quantization error as presented in the LoftQ paper; surpassed QLoRA on different precisions

WORK EXPERIENCE

Applied Scientist Intern in Amazon

05/2025 – Present

- Worked in automatic error attribution for multi-agent systems.
- Proposed a thought-template based method that can significantly improve the error detection accuracies; synthesizing datasets based on Magnetic One to support further research on automatic error attributions.

Student Researcher in Systems Research@Google

05/2024 – 07/2024

- Worked in efficient systems for serving LLM facing millions of requests leveraging the abundance of users' queries.

- Implemented experiments on millions of real users' requests using Huggingface and vLLM backends; observed significant quality and throughput improvements on Alpaca, Open Orca, and LMSys-chat.

Intern Data Scientist in The Home Depot**05/2022 – 07/2022**

- Worked in the online search team with DSI-based retrieval model as the first undergraduate ever in the team.
- Implemented DSI with PyTorch and HuggingFace; proposed an encoding method based on Pecos clustering for the DSI indexing process; improved over 15 percent recall rate over baseline, matching the current production search performance.

SKILLS**Programming:** Python (Tensorflow2, Pytorch), Java, C, HTML, CSS, JavaScript, SQL, MATLAB, Mathematica**Related course:** GenAI system, Text mining for LLM, Machine Learning, Computer Organization and Programming,