

Vision: MLsys, Network and Cloud Computing

EDUCATION

Bachelor of Computer Science Huazhong University of Science and Technology, GPA: **3.95/4.00** 2020.09 — 2024.06
PhD of Computer Science University of Michigan, advisor: **Ang Chen and Mosharaf Chowdhury** 2024.09 — 20xx.xx

PUBLICATIONS

FlexSM: Flexible Spatial-Temporal Multiplexing for LLM Serving, Under Review, arxiv soon (system track) **ICML'24**

- *The 41st International Conference on Machine Learning*
- Authors: Jiangfei Duan, **Runyu Lu**, Haojie Duanmu, Xiuhong Li, Xingcheng ZHANG, Dahua Lin, Ion Stoica, Hao Zhang

White-box Compiler Fuzzing Empowered by Large Language Models, Under Review  **Arxiv ACM CCS'24**

- *The 31th ACM Conference on Computer and Communications Security*
- Authors: Chenyuan Yang, Yinlin Deng, **Runyu Lu**, Jiayi Yao, Jiawei Liu, Reyhaneh Jabbarvand, Lingming Zhang


Accelerating the Reconstruction of Dynamic Graph with Page Remapping, Under Review **PVLDB'24**

- *Proceedings of the VLDB Endowment*
- Authors: *Hongru Gao, ***Runyu Lu**, Zhiyuan Shao, Hai Jin
- *denotes joint first authors

ACADEMIC EXPERIENCE

Scheduling the Streaming multiprocessors to accelerate LLM Serving University of California San Diego 

- Role: Research Intern advised by **Prof. Hao Zhang** **LMSYS Lab**, Aug. 2023 — Present
- Profiled the bottleneck of current SOTA LLM Serving framework(e.g., vllm, ppl.llm).
- Improve the GPU SM utilization to accelerate the serving throughput of LLMs.

WhiteFox: White-box Compiler Fuzzing via LLMs University of Illinois Urbana-Champaign 

- Research Intern advised by **Prof. Lingming Zhang** **ISE Lab**, June. 2023 — Sept. 2023
- Test optimization in compilers(LLVM IR) with white-box fuzzing technique by leveraging LLMs
- Detect 96 bugs of Pytorch, TensorFlow XLA, TensorFlowLite, LLVM based on the optimization source code

Efficient Paged Dynamic Graph Reconstruction Huazhong University of Science and Technology 


- Research Intern advised by **Prof. Hai Jin, Prof. Zhiyuan Shao** **CGCL Lab**, Oct. 2022 — June 2023
- Remap the PageTable of Linux Kernel to accelerate the dynamic graph reconstruction.
- Speed up existing SOTA algorithms by more than **15x** times.

INDUSTRIAL EXPERIENCE


Optimize the LLVM Backend of SenseTime GPU, GPU Compiler Sensetime  Shanghai.China 

- Role: LLVM Backend Developer **April 2023 — Sept.2023**
- Mentor: Wenqiang Yin
- 4000+ line LLVM GPU Backend Optimization Codes
- GPU Compiler Optimization and MLIR Triton, Instruction Selection, Instruction Pattern Match, CodeGen Emitter

Develop High Performance Neural Network Inference Engine Tencent  Shenzhen.China 

- Role: **Top 20** committer of 302 **July 2022 — Nov. 2022**
- Mentor: nihui, with **6k+** followers in Github
- Optimize high performance neural network operators and math library for NCNN , **18k+** stars in Github, handcraftly optimized for X86/ARM/RISCV/GPU platforms.

MORE INFO

- If you want to get the papers listed above, please contact me by email(lry89757@gamil.com, runyulu@umich.edu, runyulu@hust.edu.cn). I will response very quickly :)
- For better reading experience and more detailed information, please feel free to visit my  website :)