Yang Yang

EDUCATION

University of Virginia, Charlottesville, USA *Aug. 2023 – Present*
Ph.D. in Computer Science
GPA: 3.91/4.0
Topics: GPU × {Cryptography, Trusted-Computing, Memory, CXL}
Advisor: Prof. Adwait Jog

Jilin University, Changchun, China *Sept. 2019 – Jul. 2023*
B.S. in Computer Science
GPA: 3.69/4.0
Thesis: The Design and Implementation of Binary Code Analysis Framework for NVIDIA GPU.
Advisor: Prof. Jingweijia Tan

PUBLICATIONS

[C2] [Under Submission (On Multi-GPU Network Systems)]

[C1] Dissecting Performance Overheads of Confidential Computing on GPU-based Systems (ISPASS'25)
Yang Yang, Mohammad Sonji, Adwait Jog
In the Proceedings of IEEE International Symposium on Performance Analysis of Systems and Software (ISPASS), Ghent, Belgium, May 2025

[P1] Facilitating Profile Guided Compiler Optimization with Machine Learning (Poster, SRC@CGO'23, Pre-PhD)
Yang Yang, Xueying Wang, Guangli Li

RESEARCH EXPERIENCE

Insight Computer Architecture Lab *Aug. 2023 – Present*
University of Virginia, Charlottesville, Virginia, USA
Advisor: Prof. Adwait Jog
Focus:

- GPU memory and storage system (e.g., UVM, CXL and GPU controlled communication).
- TDX-based confidential computing on GPUs.
- Advanced cryptography (e.g. FHE, PIR and MPC) with GPUs.
- Counter-mode encryption for GPU systems.

Emerging Technology Enabled Computer Architecture Lab *Feb. 2022 – Jul. 2023*
Jilin University, Changchun, Jilin, P.R.China
Advisor: Prof. Jingweijia Tan
Topics: GPU × {PTX/SASS, Reliability, Energy Efficiency}
Focus:

- Process variation of FinFET and chiplet based MCM-GPUs.
- SASS level analysing and modeling framework for NVIDIA Ampere GPUs.
- Learning techniques for GPU power modeling.
- Instruction level under-voltage reliability of GPUs

State Key Laboratory of Processor *Jul. 2022 – Sept. 2023*
Institute of Computing Technology, Chinese Academy of Science, Beijing, P.R.China
Advisor: Prof. Guangli Li
Topics: Compiler & Programming Systems
Focus: Facilitating Profile-Guided Compiler Optimization with Graph Neural Networks

- Proposed a branch predictor using XGBoost based on static features at compile time.
- Utilize GNNs to build predictive profile-guided optimization framework and integrated it into LLVM.
- Released a new dataset for graph-related static analysis tasks.

TEACHING EXPERIENCE

24 Fall @ UVA, TA for CS: 6354 Computer Architecture

SKILLS

Languages C/C++ · Assembly · Python · Go
Frameworks CUDA · Pytorch · LLVM · TDX
Software LINUX · LaTeX · Markdown · GNU compiler (gcc, *etc.*) · GPGPU-Sim · Varius-TC · Z3 Solver

RELEVANT COURSEWORK

CS6354 Computer Architecture Digital computer organization.

CS6501 Program Analysis and ML Formally verify properties of NNs using Z3 solver.

CS6501 Software-Defined Networking P4 and programmable switch, implemented an NN-based packet classification inside OvS.

CS6501 Modern Computer Architectures GPU, quantum and superconducting architectures.

CS6501 Cloud System Reliability Explored remote in-memory object integrity when bit-flip happens.