


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 Optimizing Multi-GPU Network Systems](#))

[C1] ([ISPASS'25, To Appear](#))

Dissecting Performance Overheads of Confidential Computing on GPU-based Systems

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] ([Poster, SRC@CGO'23, Pre-PhD](#))

Facilitating Profile Guided Compiler Optimization with Machine Learning

Yang Yang, Xueying Wang, Guangli Li

Student Research Competition of IEEE/ACM International Symposium on Code Generation and Optimization (CGO), Montreal, Canada, February 2023

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 ·  L^AT_EX · 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.