Yang Yang

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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] (ISCA'25, To Appear)
NetCrafter: Tailoring Network Traffic for Non-Uniform Bandwidth Multi-GPU Systems
Amel Fatima, **Yang Yang**, Yifan Sun, Rachata Ausavarungnirun, Adwait Jog
In the Proceedings of ACM International Symposium on Computer Architecture (ISCA), Tokyo, Japen, June 2025

[C1] (ISPASS'25)
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

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.

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 Learning

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

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

TEACHING EXPERIENCE

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

SKILLS

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