Shaopeng Lin

825-986-0658 | shaopenglin@cs.toronto.edu | in/shaopeng-lin/ | github.com/ShaopengLin | Pickering, Canada

Education

Ph.D. Student in Computer Science — Toronto, Canada
University of Toronto — *Sep. 2024 – Present*

Bachelor of Science: Computer Science — Scarborough, Canada
University of Toronto Scarborough — *Sept. 2019 – Sept. 2024*

- **CGPA**: 3.97/4.0
- **Dean's List**: Fall 2020 - Fall 2024
- **Awards**: UTEA Summer 2024 ($7500)

Publications

Chris S. Lin, Joyce Qu, Gururaj Saileshwar
GPUHammer: Rowhammer Attacks on GPU Memories are Practical

- The 34th USENIX Security Symposium

Jeonghyun Woo, Chris S. Lin, Prashant J. Nair, Aamer Jaleel, Gururaj Saileshwar
QPRAC: Towards secure and practical prac-based rowhammer mitigation using priority queues

- 2025 IEEE International Symposium on High Performance Computer Architecture (HPCA)
- **Distinguished Artifact Award**

Workshops

Chris S. Lin, Jeonghyun Woo, Prashant J. Nair, Gururaj Saileshwar
CnC-PRAC: Coalesce, not Cache, Per Row Activation Counts for an Efficient in-DRAM Rowhammer Mitigation

- Fifth Workshop on DRAM Security (DRAMSec)

Experience

Open Source Developer: Google Summer of Code — May. 2024 – Sep. 2024
Kiwix — *Remote*

- Resolved 17 long-standing issues in the Kiwix-Desktop repository, leading to the successful completion of a 350+ hour GSOC project.
- Addressed two major issues persisting for 4+ years: (1) implemented a table of contents for Kiwix-Desktop web pages using the Javascript-QT Webchannel API, and (2) enhanced search suggestion display by refactoring the QT MVC framework.

GPU Compiler Engineer Co-op — Sep. 2023 – Dec. 2023
Huawei Technologies Co., Ltd. — *Markham, Canada*

- Achieved 50+% decrease in encoding time by refactoring 200+ lines of 3 major instruction sets lowering code from run-time to compile-time through auto-generated C++ by leveraging LLVM TableGen.
- Researched and presented to the team a solution to incorporate Inline Assembly into our backend optimization pipeline, which is now a part of the team milestone.

Software Developer Co-op — May. 2022 – Sep. 2022
Safe Software Inc. — *Surrey, Canada*

- Lowered client misuse of the FME language IDE by 60%, by developing a self-proposed core error-logging and notification feature.
- Led development for 1/3 of the translation GUI in the JSON to FME's domain-specific language IDE, leveraging the QT MVC framework on Windows.

Software Developer Co-op — May. 2021 – Dec. 2021
DataOcean AI — *Beijing, China*

- Developed an NLP regex transcription tagging module with 97% accuracy, by collaborating with Spanish experts to produce the pipeline with C++ and Python.
- Led a code redesign achieving a decrease of 60% in compilation time and 30% in storage space on mobile devices, by merging multiple language translation executables into a single instance.

Teaching

Teaching Assistant Sep. 2022 - Present

University of Toronto Scarborough

- Experienced in delivering lectures and interactive tutorials to groups ranging from approximately 30 to 300 students.
- Consistently recognized in student feedback for conducting engaging tutorials and being a valuable member of the teaching team.
- Courses: Computer and Network Security, Operating systems, Computer Organization, Introduction to Computer Science, Discrete Mathematics

Technical Skills

Languages: C/C++, CUDA, Python, Assembly, Bash, JavaScript, HTML/CSS, SQL, Java, Kotlin
Frameworks: Qt, LLVM, React, Node.js, NextJS, Google Test
Developer Tools: Linux, Git, Docker, CMake, MongoDB, Postgres, Redis
Libraries: Pytorch, Pandas, NumPy, Matplotlib