

Robin Li 李瑞斌

☎ 647-864-1798 | ✉ robinlr.li@mail.utoronto.ca | 🏠 robinli.ca | 📄 <https://github.com/robinlee09201> | 🌐 <https://www.linkedin.com/in/robin-li-1bb259b8/>

Personal Profile

I'm a Ph.D. student in the Department of Electrical and Computer Engineering at the University of Toronto. My research focuses on file system designs for emerging storage technologies, specifically byte-addressable persistent memories. I enjoy kernel hacking and performance tweaking. My hobbies also include photography, electronics, and travelling.

Education

University of Toronto

Toronto, Canada

Doctor of Philosophy in Computer Engineering

Sept 2021 - Current

- **Research area:** persistent memory, storage systems.
- **Advisor:** Prof. Ding Yuan

University of Toronto

Toronto, Canada

Master of Applied Science in Computer Engineering

Sept 2019 - Aug 2021

- **Thesis:** ctFS: Replacing File Indexing with Hardware Memory Translation through Contiguous File Allocation for Persistent Memory
- **Advisor:** Prof. Ding Yuan

University of Toronto

Toronto, Canada

Bachelor of Computer Engineering

Sept 2014 - Apr 2019

- **With Two Minors:** Business & Robotics And Mechatronics
- Including a 16-month “Professional Experience Year” internship at AMD Inc.
- **Courses:** Operating System, System Control, Database, Digital Electronics, Artificial Intelligence, Probability, Networks, Compiler, Computer System Programming, Computer Architecture, Robot Modeling and Control, Intelligent Image Processing

Publications

CONFERENCE PROCEEDINGS

ctFS: Replacing File Indexing with Hardware Memory Translation through Contiguous File Allocation for Persistent Memory

Ruibin Li, Xiang Ren, Xu Zhao, Siwei He, Michael Stumm, Ding Yuan

20th USENIX Conference on File and Storage Technologies (FAST 22), 2022, Santa Clara, CA

JOURNAL ARTICLES

ctFS: Replacing file indexing with hardware memory translation through contiguous file allocation for persistent memory

Ruibin Li, Xiang Ren, Xu Zhao, Siwei He, Michael Stumm, Ding Yuan

ACM Transactions on Storage 18.4 (2022) pp. 1–24. ACM New York, NY, 2022

Work Experience

Advanced Micro Devices

Markham, Canada

Intern: Application Engineer

May 2017 - Aug 2018

- Provide professional support for big customers, e.g. Dell, HP, Lenovo, Google
- Diagnose and triage the reported issues
- Build environment for issue reproducing
- The work involves a variety of Linux kernel and VM hypervisors

University of Toronto

Toronto, Canada

Teaching Assistant

Jan 2018 - Now

- Teaching assistant for ECE344, CSC384, ECE467, ECE454, CSC369
- Answer students' questions
- Teach tutorials and Mark exams
- Head TA for ECE344 and CSC369, Developed and maintained the course assignments

Digital Media Academy

Vancouver, Canada

Technical Manager

Jun 2016 - Aug 2016

- Manage the electronic devices for the summer camp at University of British Columbia
- Take responsibility for all technical issues and equipment logistics

University Projects

CLP integration in SeaweedFS

Toronto, Canada

University of Toronto

Sept 2022 - Now

- Extend the distributed and fault-tolerance capabilities of CLP (an efficient log compressor and browser) by rebuilding it into SeaweedFS
- **Language:** GO
- **Skill and Knowledge:** Distributed Computing and Storage; Fault-Tolerance and QOS

ctFS

Toronto, Canada

University of Toronto

Sept 2019 - Feb 2022

- Design and implement a dedicated file system for persistent memory
- **Language:** C
- **Skill and Knowledge:** Linux Kernel, virtual memory system, file system, consistency, X86-64 Architecture and Assembly

OS161

Toronto, Canada

University of Toronto

Jan 2017 - Apr 2017

- Build a MIPS kernel from a minimal code base.
- In addition to the course requirements, explore to enable the address space tag in TLB and conduct a study on the performance influence
- Receive full marks
- **Language:** C
- **Skill and Knowledge:** Kernel Design, Synchronization and Concurrency, Low-Level Optimization, Assembly

Skills

Programming C/C++, Python, Java, SQL, GO, Shell Scripts, LaTeX

OS Kernel Kernel Module Development, Virtual Memory System, File System

Achievements

2022	Scholarship , Queen Elizabeth II Scholarship In Science And Technology	Canada
2020	Scholarship , Ontario Graduate Scholarship	Canada
2019	Award , NSERC Undergraduate Student Research Awards	Canada
2016	Second Place , IEEE Hardware Hackathon	Canada

Interests and Other Skills

Photography	I have 8-year photography experience. Welcome My Photo Gallery for selected works.
Electrical and Electronics	Arduino, Embedded Systems, soldering iron, rework, oscilloscope
Drone Pilot	Transport Canada certified Small Remotely Piloted Aircraft System Pilot: Advanced Operations
First Aid	Emergency First Aid & CPR/AED certified
Accounting and Finance	Hold a business minor during undergraduate study. Rich knowledge in Accounting and Finance

Languages

English	Professional proficiency
Chinese Mandarin	Native proficiency