Yi-Chi Lee

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Education

The University of Texas at Austin Austin, TX, USA
Master of Science in Computer Science May 2026 (Expected)
- Relevant Coursework: Advanced Operating Systems, Advanced Systems and GenAI, Compilers, Algorithms

National Yang Ming Chiao Tung University (National Chiao Tung University) Hsinchu, Taiwan
Bachelor of Science in Computer Science Jun 2023
- GPA: **4.1/4.3** (**Dean's List** x2)
- Relevant Coursework: Compiler Design, Operating Systems Design and Implementation

Experience

Advanced Micro Devices, Inc. (AMD) Austin, TX, USA
GPU Compiler Engineer Intern May 2025 - Aug 2025
- Designed a custom **instruction scheduling** strategy in **LLVM AMDGPU backend** to integrate ML-based decision-making.
- Developed a proof-of-concept reinforcement learning training pipeline, allowing models to learn from compiler heuristics.

SiFive Inc. Hsinchu, Taiwan
Software Engineering Intern at Compiler Team Sep 2022 - Sep 2023
- Developed tools with **LLVM** to extract hot paths from broad benchmarks, accelerating compiler optimization development.
- Designed micro-benchmarks for evaluating the profitability of vectorization across diverse compiler versions and options.
- Created a workflow for benchmarking on FPGA and RTL simulator for precise performance comparison.

Kapito Inc. Hsinchu, Taiwan
Software Engineering Intern Jul 2022 - Aug 2022
- Built automatic CI/CD workflows with Drone CI, improving the efficiency of servers managing inference requests.
- Designed an AI training and inference pipeline, pioneering a shift to NVIDIA's TAO Toolkit and Triton Inference Server.
- Constructed a **Kubernetes** cluster for Triton, effectively processing real-time object detection from mobile camera inputs.

National Yang Ming Chiao Tung University Hsinchu, Taiwan
Research Assistant Jul 2021 - May 2024
- Developed an intelligent notification system on **Android** with **100+ downloads** and researched how AI affects/enhances user interaction with notifications through user interviews and quantitative analysis.
- **Publications:** 4 papers published at the top conferences in HCI (CHI and Ubicomp-ISWC). **[Google Scholar]**

Projects

Rowhammer-Sim || C, Linux Kernel, QEMU Fall 2024
- Developed a **kernel module** that registers a character device, simulating bit-flip in physical memory.
- Exploited bit-flips in page tables to trigger the Rowhammer attack, leading to arbitrary memory access.

RPI-OS || C, Arm Assembly, CMake Spring 2023
- Implemented an operating system with features such as interrupts, context-switching, virtual memory, and process fork.
- Utilized **QEMU** and **GDB/LLDB** for efficient pre-deployment debugging, ensuring smooth operation on Raspberry Pi 3b.

FFrusT || Rust Fall 2022
- Implemented Cooley-Tukey algorithm using diverse parallel strategies, including **multi-threading** and **SIMD**.
- Analyzed assembly code and utilized performance tools to identify efficiency determinants in various implementations.

PLang Compiler || C++, Lex, Yacc Spring 2022
- Designed a compiler for **RISC-V architectures**, handling lexical/syntax parsing, semantic analysis, and code generation.
- Applied Visitor Design Pattern for structured code traversal and integrated unit testing for enhanced reliability.

Languages & Technology

Programming Languages: C, C++, Python, Rust, Shell Script, JavaScript, Lisp, Kotlin, OCaml
Tools & Frameworks: Linux, LLVM, GDB, Git, CMake, PyTorch, MongoDB, QEMU, CUDA, OpenCL, MLIR

Leadership & Extracurricular Activities

- **President** of *HSNU & ZSGH Alumni Association at NYCU*
- **Senior Member & Podcaster** of *Late Night Film Festival* & *Free Screening Room Podcast*