

Chia-Lun (Charles) Tsai

☎ (447)301-4476 | ✉ chialun2@illinois.edu | 🌐 Chia-Lun Tsai

EDUCATION

University of Illinois, Urbana-Champaign

Master of Computer Science

Champaign, IL

Aug. 2024 – Dec. 2025 (Projected)

- **Planned Courses:** Distributed Systems, Applied Parallel Programming

National Yang Ming Chiao Tung University (NYCU)

Bachelor of Science in Computer Science

Hsinchu, Taiwan

Sep. 2019 – Jun. 2023

- **GPA:** Overall **4.11/4.3**
- Received excellent entrance scholarship each semester, awarded to only **10 out of 200** students, with a requirement to maintain a GPA in the top 25%
- **Relevant Coursework:** Operating Systems Capstone | Parallel programming | Advanced Programming in the UNIX Environment | Architecture for Scale-out Systems | Intro. to Computer Networks | Intro. to Algorithms

WORK EXPERIENCE

NVIDIA Corporation

Software Security Intern

Taipei, Taiwan

Jun. 2022 – Dec. 2022

- Enhanced test coverage **from 40% to 80%** by implementing over 20 Python and Bash penetration tests on unreleased firmware
- Increased fuzzing test **from 0 to 15** by initiating fuzzing tests on unreleased chips and simulating them on FPGAs
- Accelerated error analysis for all errors from **several hours to 10 minutes** over several months by developing an automated program to identify error-prone modules in the GitLab pipeline

PROJECTS

Self-Studied MIT 6.5840 (Distributed Systems) | Go

Jun. 2024

- * Completed all labs, including implementing a fault-tolerant Raft consensus algorithm, a distributed database, and a scalable architecture using sharding
- * Deepened understanding of distributed systems concepts such as fault tolerance, replication, consistency, and scalability

Bare Metal Programming in C | C, ARM assembly

Jun. 2022

- * Developed a basic operating system from scratch on bare-metal Raspberry Pi 3b+
- * Implemented a simple shell, bootloader, interrupt service routine, context switch, virtual memory, and file system supports FAT32 format

UNIX Programming course programs | C++

Feb. 2022

- * Created an "ls-of-like" tool, replicating most functionalities of the Linux "ls" command
- * Designed a system call monitor, with capabilities to display call logs in-terminal or save to a file
- * Built a mini libc library and a toy debugger for hands-on experience with system utilities

BBS chatting room | C++

Sep. 2021

- * Built a BBS-like chatting system that supports account creation and multi-user interaction using C, C++ and Linux socket interfaces

HONORS AND AWARDS

Scholarship for Exchange Program to Chalmers University of Technology

Jan. 2023

Bronze Award, ICPC Asia Taipei Regional Programming Contest

Nov. 2021

3rd Place, National Traffic Management Creative Competition

Aug. 2021

PROGRAMMING SKILLS

Advanced : C, C++

Intermediate : JavaScript, Python, Go, Rust

Other Tools / Frameworks / Platforms : Vim, Git, GDB, Linux, Ubuntu, FreeBSD