

Ethan M. Chan

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Education

Northwestern University, Evanston, IL

Expected June 2024

B.S in **Computer Science**, Minor in **Data Science**

Courses: Operating Systems, Data Structures and Algorithms, AI, & Intro Systems | **Planned:** Networking, Databases, & NLP

Experience

Client Side App, NUDM Tech and Analytics Team

November 2022 - Present

- Developing a mobile app serving thousands of students which allows for creating and updating events, viewing fundraising goals, and competing in fundraising leaderboards
- Working with **React Native** and **Firebase** in an agile environment

Research Assistant, TIILT Lab

October 2022 - Present

- Designing a web application to transform spotify songs into a visualization of musical properties for teaching music theory in a more interactive and accessible way
- Researching rhythm identification with librosa and madmom

DAQ Motion Board, Northwestern Formula Racing

September 2022 - Present

- Wrote ESP32 firmware sending dimensionalized GPS and accelerometer data to CAN bus in **C++**

Big Marsh, Design Thinking and Communication (DTC)

March 2022 - June 2022

- Recommended best air quality sensor for Big Marsh's needs by interviewing experts/stakeholders to clarify understanding of project requirements and comparing 7 different sensors through research and user/performance testing
- Ensured weekly objectives were well met by discussing goals, delegating tasks, and leading by example
- Facilitated weekly discussions and initiated one-on-one conversations to fill communication gaps

Shirley Ryan Ability Lab, DTC

March 2021 - June 2021

- Ideated, designed, and prototyped crochet aid to assist people with lower arm disabilities
- Created mockups, presented design reviews, and co-authored a 40 page final report

Projects

Nautilus Kernel Parallel Port and Virtio GPU Driver

November 2022

- Devised request and response fragments to load pixels into a framebuffer for a DMA GPU device
- Developed middle layer bit blitting functions to apply operations from source to destination boxes with enforced clipping regions and tiling
- Interfaced with port mapped IO to develop a parallel port driver and wrote an interrupt handler to signal other requests

Kanbooks, Ebook app prototype for language learning

July 2022 - September 2022

- Extended Radium's E-reading framework written in **Swift** by adding a script to automatically highlight unknown words on epub renderings
- Designed a new overlay for highlighted words, allowing users to translate in one less step with Google Translate's API

SETI Lab

March 2022

- Leveraged multithreading to increase speed by 200% for a "search for extraterrestrial life" program using **C's** pthread library

Flappy Bird

November 2021

- Programmed Flappy Bird from scratch in **C++** with GE211, a simple 2D game engine

Extracurriculars

- Northwestern Formula Racing, NU Dance Marathon Tech & Analytics Team, and Philharmonia Orchestra

Skills

Proficient: C | **Familiar:** Java, Python, C+, JavaScript, Swift, SQL | **Frameworks:** React, React Native, UIKit, SwiftUI |

Tech: Firebase & Git | **Foreign Languages:** Mandarin (intermediate), Spanish (basic)