

Ethan Tan Jun Wei

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EDUCATION

Carnegie Mellon University

Pittsburgh, PA

Bachelor of Science in Information Systems and Computer Science (3.7/4.0 GPA)

Expected June 2025

Relevant Coursework: Data Structures and Algorithms (C), Computer Systems (C), Functional Programming (SML), Artificial Intelligence (Python), Application Development (Javascript), Database Development (SQL), Methods for Data Science (R)

WORK EXPERIENCE

Coinhako

Singapore, SG

Software Engineering Intern

May 2023 - Aug 2023

- Built technical tools for the firm's proprietary trading system using Python frameworks, Dash and AWS Timestream
- Scaffolded API endpoints, ensuring seamless communication of trading data between the frontend and backend
- Developed API with HTTP methods using a RESTful architecture and implemented Docker containers across projects
- Proactively identified and implemented time and space optimizations to the trading system based on employee feedback
- Refactored code using object-oriented design principles to encapsulate data and enable inheritance between classes

ZUZ Lab

Pittsburgh, PA

Undergraduate Researcher

Sep 2022 - Present

- Assisting Professor Seth Goldstein on ZUZ, a platform that aims to promote equitable access to capital for businesses
- Conducting user and technical research to how currencies on public ledgers can promote trust within local communities
- Educating merchants in Sharpsburg, PA on the functionalities of the platform to facilitate a seamless user experience
- Contributing to the product roadmap by investigating user requirements and deriving how blockchain can support them

Carnegie Mellon University

Pittsburgh, PA

Teaching Assistant

Jan 2024- Present

- Teaching Assistant for Information Systems course that covers full-stack web development and database development
- Assisting students with understanding the client-server architecture model and debugging SQL and Javascript code
- Conduct weekly recitations and host office hours to clarify key concepts taught in lecture to a group of 30 students

TECHNICAL EXPERIENCE AND PROJECTS

Spotitector (<https://github.com/ethantanjw/Spotitector>)

Python Application

- Developed an application that recognizes an emotion using computer vision and recommends a song from Spotify's API
- Utilized the OpenCV library to deploy computer vision from a trained dataset to generate output of a person's emotion
- Parsed data in JSON files from Spotify's API and linked songs with facial expressions using OOP and data structures
- Implemented CRUD commands to establish connection within the fullstack and update songs data to be displayed

112 Racer (<https://github.com/ethantanjw/112-racer>)

Game Application

- Conceptualized and developed an interactive multimodal motorsport racing game written using over 1500 lines of code
- Implemented dynamic side-scrolling, realistic vehicle physics and a functional game AI to enhance the user experience
- Utilized the model-view controller framework to divide the logic of the application and increase code reusability
- Held user testing sessions to validate and iterate on the initial MVP to improve the user interface and experience

Dynamic Memory Allocator

Computer Systems

- Implemented a dynamic memory allocator in the heap in C consisting of the Malloc, Calloc, Realloc and Free functions
- Optimized throughput to 11900 Kops/Sec and memory utilization to 75% using various data structures and algorithms
- Wrote a heap checker to ensure consistency of the heap, utilized gdb operations to debug and maintain memory safety

SKILLS AND TECHNOLOGIES

Languages: Python, C, Javascript, HTML, CSS, SQL, R, SML

Frameworks and Tools: React.js, Flask, TailwindCSS, Bootstrap, Git, Docker, AWS, Postman, Figma

Interests: Technology, Software Development, Entrepreneurship, Artificial Intelligence, Web 3.0, Motorsport