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),
Application Development (Javascript), Database Development (SQL), Artificial Intelligence (Python), Data Science (R)
Activities and Societies: Singapore Students Association, Venture Capital Club, Blockchain Club

WORK EXPERIENCE

Coinhako   Singapore, SG
Software Engineering Intern   May 2023 - Aug 2023
- Built technical tools for the firm's proprietary trading system using Dash and AWS Timestream to parse live market data
- Developed internal API using a RESTful architecture to process market data for use in quantitative trading formulas
- Implemented Docker containers to reduce the amount of dependencies required for traders to access various projects
- Proactively identified and implemented time and space optimizations to the trading system based on employee feedback
- Utilized AWS Timestream as a time-series database, wrote SQL queries to obtain relevant market data for the backend

ZUZ Lab   Pittsburgh, PA
Product Management Intern   Sep 2022 - Sep 2023
- Assisted 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

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 key-value pairs and linked songs with facial expressions using OOP and data structures
- Implemented HTTP methods 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 path-finding algorithms 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 from scratch 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, Ruby, HTML, CSS, SQL, R, SML
Frameworks and Tools: React.js, Flask, Rails, MongoDB, TailwindCSS, Bootstrap, Git, Docker, AWS, Postman, Figma
Interests: Technology, Software Development, Entrepreneurship, Artificial Intelligence, Web 3.0, Motorsport