

Ethan Tan

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EDUCATION

Carnegie Mellon University

BS in Information Systems and Computer Science (3.67 GPA)

Pittsburgh, PA

2022 – Spring 2026

Relevant Coursework: Parallel Algorithms, Computer Systems, Data Structures and Algorithms, Functional Programming, Software Engineering, Application and Database Development, Artificial Intelligence, Data Science

EXPERIENCE

DBS Bank

Software Engineer Intern

Singapore, SG

May 2024 – Aug 2024

- Developed trade pricing engine that **speeds up interfacing of market data** with quantitative models by **30x** to provide market data insights to over **500 traders**
- Containerized** applications distributed on **AWS EC2** to support **millions of trade requests per day**
- Integrated asynchronous message **queue** with in-memory **caching** to **improve throughput by over 30%** and **reduced costs by 15%** using **Redis**
- Reduced latency by 20%** from monitoring AWS console logs and scaling the capacity of **Docker Containers**

Coinhako

Software Engineer Intern

Singapore, SG

May 2023 – Aug 2023

- Spearheaded internal **RESTful API** to process **millions** of market data points daily used in quantitative models
- Implemented **5 trading dashboards** that analyzed data from over **10 million data points** provided by market exchanges using **Python, Dash and SQL**
- Containerized** applications using Docker and used AWS Timestream as a time-series database to provide live market data to over **1 million active users**

Vincar Group

Software Engineer Intern

Singapore, SG

Aug 2024 – Sep 2024

- Designed a vehicular inventory management system using **NextJS, TailwindCSS, GraphQL and Apollo Client** with over 100 database schemas of manufacturer data
- Improved vehicular sorting and querying tools that decreased lookup time by over **30%** for salesmen

Carnegie Mellon University

Research Assistant, Software and Societal Systems Department

Pittsburgh, PA

June 2024 – Present

- Analyzing over **1 million** tweets to classify social media bots in a computational manner across all platforms
- Implementing **bot detection algorithms** to produce a binary classification of social media accounts using **Python and Pandas**

Teaching Assistant, Information Systems Milieux

Jan 2024 – June 2024

- Mentored over 50+ students on the client-server architecture and developing applications in **Javascript and SQL**

PROJECTS

Computer Systems Simulator | C, GDB, Linux

2023

- Designed and implemented a dynamic memory allocator using segregated lists, improving throughput by over **25%**
- Developed a **Unix shell** using advanced techniques including **concurrency**, signal handling, and process control
- Constructed a **multi-threaded** web proxy, increasing efficiency by **30%** with usage of **cache** locality principles

Spotitector | Python, OpenCV, Spotify API, Tkinter, Git

2022

- Devised a **computer vision** application that detects an emotion and recommends a song from Spotify's API
- Integrated the **OpenCV** library on a dataset of facial expressions to detect a person's emotion with **90%** accuracy

TECHNICAL SKILLS

Languages: Python, C, C#, JavaScript, Typescript, Ruby, Java, HTML, CSS, SQL, R, SML

Frameworks: React, Flask, .Net, Pandas, GraphQL, Rails, MongoDB, PostgreSQL, Tailwind, Bootstrap

Tools: Docker, Amazon Web Services, Git, Redis, Postman, Jenkins, Figma,

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