Ethan Tan

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EDUCATION

Carnegie Mellon University Pittsburgh, PA

B.S. in Computer Science and Information Systems (3.6 / 4.0 GPA) 2022 – Spring 2026

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

EXPERIENCE

DBS Bank — Singapore, SG
Software Engineer Intern — *May 2024 – Aug 2024*
- Developed trade pricing engine that **speeds up interfacing of market data** with quantitative models by **10%** to provide market data insights to over **500 traders** using **C# and .Net**
- **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 20%** and reduced costs by 15% using **Redis**
- **Reduced latency** by over 10% from monitoring AWS console logs and scaling the capacity of Docker Containers

Coinhako — Singapore, SG
Software Engineer Intern — *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 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 — Singapore, SG
Software Engineer Intern — *Aug 2024 – Sep 2024*
- Designed a vehicular inventory management system with over 100 database schemas of manufacturer data using **NextJS, TailwindCSS and GraphQL**
- Improved vehicular sorting and querying tools that decreased lookup time by over **25%** for salesmen

Carnegie Mellon University — Pittsburgh, PA
Research Assistant, Software and Societal Systems Department — *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 classify 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 **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, Next.js, 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