Hoang Chu

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EDUCATION

Pitzer College Claremont, CA
Bachelor's Degree, Joint Computer Science and Mathematics (Honors) Expected May 2024

- **GPA: 3.7 / 4.0** (Major GPA: 3.9 -- Cross-registered Math and CS classes at **Harvey Mudd College**)
- **Coursework**: Data Structures & Algorithms, Machine Learning, Web Development, Operating Systems, Database Systems, Computer Network, Computer Science Insights, Computer Theory and Logic, Mathematics of Data Science.
- **Awards:** Round 3: Google Code Jam (did in C++), Winner: SIG Challenge, Winner: Citadel Invitational Datathon.

SKILLS

- **Programming Languages**: Java, Python, C++, JavaScript, TypeScript, React, Golang, SQL, OCaml, Racket, Prolog
- **Technologies**: Linux, Flask, Kafka, Hadoop, Kubernetes, AWS, MySQL, gRPC, Beautiful Soup, Git

WORK EXPERIENCE

Periwinkle Trading August 2023 - Present
Quantitative Developer Contract - Harvey Mudd Clinic Project *C++, Java, ReactJS*

- Worked across C++ codebases to allow traders and quants to analyze data generated by existing mathematical models.
- Implemented an order book simulation for real-time data streaming and persistence with Java's Kafka and Hadoop.
- Developed frontend application in React to add new visualizations for live and historical stock buy / sell data.
- Discussed system design enhancement weekly with company CEO Scott Smallwood, former partner at PDT Partners.

University of Southern California June 2023 - August 2023
Undergraduate Research Intern - Topic: *"Last-mile Delivery Optimization with Recurrent Neural Network"* *C++*

- Developed a pair-wise Recurrent Neural Network with a customized attention-based mechanism to predict the path deviation from the theoretical shortest-distance path a human driver would follow under external circumstances.
- Designed an iterative Genetic Algorithm in C++ to identify the first stop of a route that yields the optimal operational cost, achieving the global efficiency of all routes under 120 different simulations after ML model training.

Meta May 2022 - August 2022
Engineering Intern *C++, SQL, Hack*

- Worked on a dataflow tracking service in C++ to comply with privacy regulations and avoid **billions dollars** in fines.
- Built end-to-end Meta Login flow in C++ to integrate 3rd party developers into Facebook's data sharing ecosystem.
- Designed and implemented **20 microservices** to facilitate **300000+ data ingestion** and data dependency management.
- Contributed new scalable MySQL schema sharding strategy that supports 5x current workload of big data stream.

Cohost.ai (cohost.ai) June 2021 - August 2021
Engineering Intern *Python, Java, Golang, HTML, CSS, JavaScript, ReactJS*

- Developed full-stack the company's Conversational chatbot for real estate leasing agents, serving **2000+ daily users**.
- Collaborated cross-team to develop from scratch a multi-threaded Message Queue which prevents message losses with Java Spring API and Inter-Thread Communication method.
- Developed Golang microservices to process interaction metrics from **over 1.5 million messages**, visualize user interaction timeline with ReactJS, and store for metrics analysis with AWS.

Harvey Mudd College January 2022 - Present
Teaching Assistant and Grader Lead (Grutors) - Data Structures and Algorithms *C++, Python, Java*

- Lead consulting hours with 4 other TAs to assist 50 students on average weekly on OOP and Data Structures concepts.
- Collaborated with Professors to add optional topics in Data Structures such as Tries and Binary Indexed Tree.

PROJECTS

ClaremontCourses | Independent *Python, React, TypeScript, Golang, Flask, Node.js, AWS*

- Built a class searching website serving 2000+ users and **solved a decade-long problem** at Claremont Colleges.
- Optimized the search engine's querying performance from 25 to 0.8 seconds, **a 97% decrease** using bitwise operation.
- Constructed algorithms scraping 4500+ courses an hour, matching equivalent courses with **100% accuracy** across 5 different colleges, and self-designed data structures and regular expressions to build full-depth prerequisite trees.