Viet 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 (**TA 1 year**), Machine Learning, Neural Network, Computer Systems, Operating Systems, Database Systems, Computer Network, Statistical Linear Models, Web Development, Logic.
- **Awards:** USACO Platinum, Codeforces Master, 1st Place: Citadel Datathon, Round 3: Google Code Jam

SKILLS

- **Programming Languages**: TypeScript, React, Golang, C++, Python, Java, JavaScript, SQL, OCaml, Racket
- **Technologies**: GraphQL, Linux, MongoDB, SQLAlchemy, gRPC, Kubernetes, GCP, AWS, Beautiful Soup, Git

WORK EXPERIENCE

Periwinkle Trading August 2023 - Present
Quantitative Developer - HMC Clinic Project: *"Innovative API Layer for Fixed-income Algorithmic Trading"* *C++*

- Contributed performant OOP design to build 5+ novel API components that help refactor the company's orderbook.
- Implemented robust error handling, fallback behavior, and interactive graphical interfaces for Options quoting logic.
- 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 - Operation Research and Data Science *Python, MATLAB*
Topic: *"Last-mile Delivery Optimization with Recurrent Neural Network"*

- 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 Sequence Generation Algorithm used after model training to identify the first stop of a route that yields the optimal operational cost and achieve the global efficiency of all routes under 120 different simulations.
- Prediction accuracy from this model **improved by 15%** compared to LSTM encoder–decoder and pointer network.

Meta May 2022 - August 2022
Engineering Intern (received return offer) *C++, Python*

- Shipped ML infrastructure and labeling models in Python, improving labeling accuracy in Meta's Marketplace **by 2%**.
- Developed internal logging infrastructure using C++ for performance metrics, logging filtering, and crash reports, providing support for multiple product entities (accounts, comments, etc.) on approx. **200,000 requests** per day.
- Optimized scheduled cache refresh in C++ by user activity prediction resulted in a **30% decrease** in CPU cycles.

CoHost.ai (Seed-stage Startup) June 2021 - August 2021
Engineering Intern (only intern in the company) *C++, TypeScript, React*

- Deployed a multi-threaded Message Queue with Inter-Thread Communication method which prevents message losses.
- Designed Database ORM and built the company's Chatbot full-stack with test suites reaching 100% code coverage.

PROJECTS

ClaremontCourses | Independent *Python, React, TypeScript, Golang*

- Built a full-stack (featured) course search UI and with a customized HTTP handler fetching 4500+ courses an hour.
- Designed tree serialization algorithms optimizing the website's PageSpeed **from 30 secs to a consistent 0.8 second**.

Do Regional Differences Impact Sentiment Analysis? | Independent *Natural Language Processing*

- Built from scratch in Python and trained Naive Bayes classifiers on Yelp review data, reserving specific location groups for testing, to test the hypothesis that regional differences do NOT significantly impact sentiment outcomes.

Secured P2P File Sharing System | Independent *C++, Distributed Systems*

- Developed a distributed file sharing server that detects malicious attackers while preserving shared file contents.
- Implemented a multi-core x86-64 operating system that supports syscalls, multithreading and caches synchronization objects such as spinlocks and futexes, a virtual file system, and an on-disk file system with directory trees.