Peter Wu

peterlingwu@gmail.com https://peterlwu.com (609) 508-7717 peterlingwu ptwu

Education

Cornell University Aug. 2019 - May 2023

Bachelor of Science in Computer Science

Specialization in Mathematics. (Relevant Coursework): Data Structures, Discrete Structures, Functional Programming, Linear Algebra, Analysis of Algorithms, Machine Learning, Probability & Statistics, Computer Organization & Systems Programming, Computer Vision, Advanced Machine Learning Systems (graduate), Operating Systems, Applied Complex Analysis, Cloud Computing (graduate)

Experience

YouTube, *Software Engineering Intern - YouTube Live TV Infra*, Mountain View, CA May 2022 - Aug. 2022

- Significantly improved video quality for **over 5 million** YouTube TV subscribers by developing a data processing pipeline in **modern C++** to sample and process videos for internal quality verification.
- Optimized for low latency and delivered **highly tested** code when implementing two new RPC-based microservices.
- Prevented technical debt through extensive design documentation and presented working project results as a tech talk to the overarching team of over 40 engineers.

Citadel, *Software Engineering Intern - Treasury Execution*, New York, NY Jan. 2022 - Apr. 2022

- Improved reference data accuracy for a core financing service in **C++**, while helping migrate code to **C++17** standards.
- Implemented and took full ownership of an API for swap data in **Java**, achieving latency speedups of up to **20x** on queries through multithreading optimizations and high-performance indexed caching using **CQEngine**.
- Deployed the new data service using **Kubernetes**, mindful of scalability and disaster recovery, helping the firm move towards cloud business goals.

Google, *Software Engineering Intern - Ads Advanced Solutions* June 2021 - Aug. 2021

- Provided more actionable intelligence to users of Ads custom bidding by discovering unvisited code in **Python** bidding strategies, which interface with machine learning models to optimize marketing objectives.
- Instrumented script execution and model parsing pipelines in the **C++** and **Java** backend, while supporting a backwards-compatible server migration in the process.
- Implemented frontend data visualization in **Angular**, iterating on mockups with a UX team, to give a more holistic view of impressions to over 66% of custom bidding users.

Cornell University, *Teaching Assistant*, Ithaca, NY Jan. 2020 - Dec. 2021

- Fall 2021: Machine Learning for Intelligent Systems (300+ students)
- Fall 2020 - Spring 2021: Functional Programming (400+ students)
- Was the **instructor** of the student-taught Trends in Modern Web Development (30+ students) course in Spring 2021.

Projects

Distributed Texas Hold 'Em Poker | Node.js, socket.io, Express Apr. 2020

Webapp allowing for players across multiple devices and networks to join rooms and play Texas Hold 'Em poker during the pandemic. Implemented using **Node.js** and **websockets** (socket.io) for real-time gameplay. The app is open-sourced and has over 30 stars on GitHub.

fitme | TypeScript, Python, React, MongoDB, Flask, Docker, PyTorch Dec. 2020

Platform and social network for fashion using computer vision to segment outfit images, powered by a pretrained Mask-RCNN model deployed as a Docker microservice and accessed through a responsive React UI. Demo Video.

Election County Prediction | TensorFlow, NumPy, Pandas, scikit-learn Dec. 2020

Comparing effectiveness of ML algorithms such as SVMs with deep neural networks to classify counties in the U.S. presidential election. Placed 5th out of 173 in the class overall in CS 4780 - Machine Learning for Intelligent Systems.

Skills / Awards

Languages: C++, Java, Python, JavaScript, TypeScript, OCaml, Go, R

Technologies: Functional Programming, CI/CD, Docker, Kubernetes, NumPy, Pandas, scikit-learn, PyTorch, SQL (PostgreSQL, SQL Server), NoSQL Databases (Firebase, MongoDB), React, Redux, Git, Node.js, Spring (Boot)

Awards: USA Computing Olympiad Gold Division, Cornell Math Contest in Modeling Runner-Up Winner, Dean's List (all possible semesters), USA Biology Olympiad Semifinalist, Best Webapp Award at HackMHS IV