Samyok Nepal

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Education

University of Minnesota, Honors (B.S. in CompSci & Math, 3.93 GPA)   [expected] Sep 2022 - May 2025

Stanford University (Visiting Student)   Summer 2023
- Machine Learning (CS 229) and Artificial Intelligence (CS 221)

Skills, Technologies, and Awards

Skills: Python, Typescript, C++, Go, JavaScript, React, React Native, NodeJS, HTML/CSS

Technologies: MongoDB, MySQL, Firebase/Firestore, Figma, Google Cloud Platform, Kubernetes, Docker, Git/Github, Vim

Awards: MLH Top 50 Hackers (2023), 1st Education @ HackMIT, US Congressional App Challenge Winner, USACO Gold Division

Experience

Robinhood, Software Engineering Intern   May 2023 - Aug 2023
- Currently working on the Options Platform team to build a new feature for Robinhood's 22 million users using Python and Go.

Art of Problem Solving, Curriculum Developer (Part Time)   Apr 2023 - Present
- Developing engaging and challenging problem sets, practice exams, and handouts for AoPS's premier online competitive coding training program, CodeWOOT. Curriculum in C++.
- Assist twice a week in teaching online classes of 20-50 students answering questions, guiding students, and helping debug.

Fiveable, Software Engineer (Full Time/Gap Year)   Sep 2021 - Aug 2022
- Architected and implemented low-level WebRTC voice and video calling functionality. Started as a proof-of-concept and then scaled to general availability on Google Kubernetes Engine.
- Reduced application load times by 20x on high-traffic pages by optimizing database queries, network requests, and re-renders.
- Designed and built user-facing features using Typescript, Next.js, React, Redux, Material UI, and MongoDB.

Scioly.org, Developer (Part Time)   Sep 2019 - Aug 2022
- Developed custom PHP image gallery and file storage server to be used by more than 68,000 registered users.
- Implemented an image optimization service to reduce image file sizes by up to 80% and serve at the edge.

Technical Projects

GopherGrades, Lead Developer (umn.lol)   Nov 2022 - Present
- Developed a grade transparency tool designed to provide students with past grade distributions for classes and professors.
- Serving 2M+ queries, 30k+ unique users, 1.2k+ browser extension downloads. Tech: SQLAlchemy, Pandas, NextJS, React, ChakraUI

HearShot (github)   2nd @ LAHacks 2023
- Developed a hardware hack with a low-latency radio receiver using a Raspberry Pi for real-time monitoring of police dispatch radio.
- Implemented a transcription pipeline using Whisper for live transcription of audio and location identification using Claude and the Places API.
- Built a NodeJS messaging server for push notifications and a React Native frontend with custom components for displaying alerts, transcriptions, and notifications.

GreyDuck (github)   1st (Education), Top 5 @ HackMIT 2022
- Implemented an ensemble model that rewrites problematic code segments and provides justifications to facilitate learning.
- Built a VSCode extension connected to a platform-agnostic REST microservice for real-time code analysis and suggestions.
- Utilized a generate-then-motivate pipeline, ingesting code as an abstract syntax tree (AST), computing risk measures, parallelizing suggestions across Codex and GPT-3, and diffing the new ASTs for significant changes.

Anony.news (github)   3rd @ Hack for Humanity 2022
- Used OpenCV, OpenFace, and ffmpeg to detect, identify, and selectively blur all unrecognized faces in real time.
- Automated deployments to DigitalOcean droplets using Docker Compose and GitHub Actions.
- Implemented the frontend to connect to a RTMP proxy server with integrated streaming to Youtube (or any other RTMP endpoint).