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WORK EXPERIENCE

Tower Research Capital - Software Engineer II, Developer Tools

New York, United States | from July 2021 to Present

Rust, Python, Kubernetes, Helm, CMake, Bazel, Google Cloud, Postgres, MongoDB, Conda

- Developed the internal release and CI system in **rust**, which utilized containers to run jobs on **GKE** with auto-scaled workers. Improved the time for release and tests jobs by up to 10x. Developed features to allow developers to run their jobs locally using **Docker**.
 - Helped execute a migration to a monorepo model of development. Onboard developers to the new build tool - **buck2** (Facebook's alternative to **bazel**) from **cmake**.
 - Built a serverless **Airflow** clone in **Python** so developers won't have to manage infrastructure deployments, over a span of 1 year, onboard 100+ developers on it.
 - Moved the aging development infrastructure (such as **Gerrit** cluster) from bare-metal machines to the **Kubernetes** on Google cloud. Held complete responsibility to keep them up updated, responsive, and highly available.
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Gojek Tech - Software Engineering Intern, Ad Tech

Bangalore, India | from Jan 2021 to July 2021

Elixir, Phoenix Web Framework, Open API

- Worked with a senior engineer to deliver a new ad inventory type targeting FMCG brands. Providing them the option to run banners on the GoFood homepage. Following the delivery, 5000+ global and local brands were onboarded on it.
 - Used internal tools & infrastructure to automate the invoice delivery for merchants.
 - Utilized **Open API** spec to document the Ads System API, automating the generation of API clients (SDKs), stubs, and mocks for it in 50+ languages.
 - Built the instrumentation pipeline for recording the metrics around the events (views/clicks) received by campaigns past their limit. I created a **Grafana** dashboard for the same.
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Google Summer of Code - Student Developer (PSF) Intern

Remote

Python, Tox, Scrapy, Travis CI

- Implemented an interface for robots.txt parsers in Scrapy (a web-scraping framework), allowing its 270k+ users to substitute a more spec compliant parser than the default one.
- Developed a pure-Python robots.txt parser compatible with Google's newly proposed revision of robots.txt specification. Over 2.6k+ Github projects depend on it.

SKILLS

Python, Rust, Kubernetes, Helm, Google Cloud, CMake, Buck, Bazel, Postgres, MongoDB, Elixir, Conda.

EDUCATION

Indian Institute of Information Technology, Kalyani - West Bengal, India

Bachelors in Technology (B. Tech.) - Computer Science and Engineering

Graduated **July 2021**

Cumulative GPA: 9.68 | **Department Rank 1**

PROJECTS

CodeChef Practice Tool - [Link](#)

PHP, React, MySQL, Relational Database Design, Web Scraping

- Built a web app to help competitive programmers search problems on CodeChef using problem tags. Deployed the app online with the help of Azure and Heroku.
- Scraped the CodeChef website, downloading problems and their tags. Stored them in a MySQL database to overcome the lack of a public API.

Full-Text Search and Indexing Server - [Link](#)

Golang, Mux

- Created a service to search for words, inside a large quantity of text spread across multiple documents using an inverted index.
- Utilized it to create a service for searching inside a large number of research papers on my college's local network.

URL Shortening Service - [Link](#)

Python, Redis, Postgresql, SQLAlchemy, Flask, Docker

- Created a URL shortening microservice built on top of Redis and Flask, and utilized Postgresql as a persistent store to mitigate data loss due to failures.
- Utilized docker to containerize the service and allow for easy deployment.

Linux's Ping Command Clone - [Link](#)

C++, Linux System Calls, Computer Networks

- Created a Linux ping command clone supporting both IPv4 and IPv6 protocols with the goal to enhance my understanding of ICMP protocol and Linux kernel internals.

Virtual Reality Playground - [Link](#)

A-frame, Google Cardboard, JavaScript, HTML, CSS

- Created a virtual reality-based visual programming language (similar to [Scratch](#)) for creating 3D stories, animations, and games, with the primary objective to help children in learning the fundamentals of computer programming.

ACHIEVEMENTS

- Ranked **122, 256, 291** in **Google Kickstart** rounds globally.
- **Candidate Master on Codeforces** and **5 stars rated user on Codechef**.

PUBLICATIONS

- [Vision-based Object Classification using Deep Learning for Inventory Tracking in Automated Warehouse Environment](#) - 2020 20th International Conference on Control, Automation and Systems (ICCAS) | **Best Student Paper Finalist**