Aditya Agrawal

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Work Experience

Software Development Engineer - Amazon **January 2024 - Present**
Bengaluru, KA **10 months**

- **Cerulean - Data privacy solutions for Amazon Devices**:
  - Project was initiated to cryptographically protect user data access.
  - Developed functionalities in C SDK related to cryptography operations, to facilitate content encryption in cloud services and devices, like Kindle, FireTV.
  - Built JNA wrappers to use the C SDK across cloud services to preserve business logic at one place.
  - Implemented various platform modules for various AWS Services and device implementations for the C library.
  - Worked with AWS Nitro Enclaves and proto bufs to provide trusted code execution for elevated crypto operations.
  - Worked with Amazon wide service to service communication and Authentication methods.
- **PaCT - Privacy and Consent Tooling for Amazon Devices**:
  - Project was initiated to streamline privacy settings and customer consent management across all Amazon Devices.
  - Developed OS native components such as IPC handlers, Turbo Module interface (for UI applications) for upcoming OS for Amazon Devices.
  - Implemented various features like push messages, unicasting & broadcasting, and task scheduling to manage application lifecycle.
- **Tech stack**: C, C++, Rust, Java

Software Engineer - Quicko **June 2023 - December 2023**
Ahmedabad, GJ **7 months**
Quicko is a tax platform for individuals and businesses, offering D2C, B2B, integration-based, and service models to simplify taxes for everyone at scale.

- **MEET by Quicko**:
  - Conducted **2,000+** meets for individuals tax filing in July month with **<40 tax experts** across India during the 2023 tax filing season.
  - Developed features around **bookings, orders** and **plans** management.
- **Tax P&L APIs by Sandbox**:
  - Developed **multi-threaded** Tax P&L APIs with **asynchronous** workflows to have resilient architecture for Domestic and Foreign assets trading data.
  - These APIs provided calculation engines for multiple kind of assets (equity, MFs, ETFs, etc.)
  - Target of integrations with **13+ brokers**, **SDK** based, **report** based and **B2B** integrations with **>60%** pitch success rate.
- Advocated for development and coding practices and helped in adopting and creating POCs for multiple technologies like **Terraform**, **Go**, **Code Bundler**, as better alternatives.
- **Tech stack**: Java - Spring Boot, Typescript, Flutter, NodeJS

Technical Skills

Languages	JavaScript, GoLang, Java, Python, C++, C, Rust, CUDA Programming
Databases	DynamoDB, Postgres, Mongo DB, Redis, TimescaleDB
Frameworks	Next JS, Express JS, Spring Boot
Systems	Linux, AWS, Digital Ocean, Heroku
Tools	Postman, Terraform, Listmonk

Education

Bachelor of Technology - Computer Science and Engineering, **July 2019 — June 2023**
Indian Institute of Information Technology, Raichur
CGPA (Current): 8.58/10.00

Projects

TNP Portal **Project | Gitlab**

- Common portal for students and companies to manage placements in the institute
- **Rate limiting** (Authentication token based - fallback to IP) backed by **Redis**
- **Horizontally Scalable** application.
- Automatic expiry of incomplete user profiles using **Redis Pub/Sub**
- **Tech Stack:** Front-end ⟶ NextJS, MaterialUI | DB ⟶ Postgres, Redis | Backend ⟶ NodeJS, Firebase Storage | Others ⟶ Redis Pub/Sub, Helmet.js

status-cron **Github**

- A **multi-threaded cron** service to keep track of health of your services.
- Supports multiple service types (HTTP, Redis, SQL [Postgres, MySQL, Oracle], MongoDB)
- Helpful for tracking multiple services in a minimal form with flexibility to use the data acquired as wanted.
- **Tech Stack:** Golang

Contrast Stretching Improvements **Github**

- Implemented multiple methods to improve performance of Contrast Stretching Operation
- Compared CPU, and multiple GPU implementations with different approaches and shared memory usage to find a better way.
- **Tech Stack:** CUDA, C++

Work Stealing Dequeues, Pull based work balancing **Sup.: Dr. Sathya Peri, Professor, CSE-IITH** **Github**

- Understand and Implement a work stealing dequeue to balance work among idle and loaded threads
- Implementation of the model in a multi-core environment
- Explore possible improvements and implementation in a distributed environment (balance multi-region load, etc.)
- **Tech Stack:** C++