ROHAN DOSHI

Final Year Student at Pune Institute of Computer Technology

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EXPERIENCE

Software Engineering Intern

Golain   🗓 March 2024 - Present

- **Implemented WebRTC using the Pion stack in Go**, ensuring secure communications via **DTLS** through mutual TLS (mTLS) certificate exchange.
- **Set up Change Data Capture (CDC) using PostgreSQL Write-Ahead Logging (WAL)**, avoiding the use of triggers and `pg_notify`.
- **Integrated RabbitMQ for asynchronous programming and employed Server-Sent Events (SSE)**, architecting the flow with appropriate **exchanges** and **routing keys** to provide real-time events to users at each system step.

Software Engineering Intern

Tracelink   🗓 June 2023 - July 2023

- Optimized overhead time required by **SageMaker**, by splitting scripts and invoking **Lambdas** for parallel processing on smaller chunks.
- Architected performance dashboard backend to use an in-memory cache, **Redis**, instead of fetching report files from **S3** every time.
- **Selenium** UI automation, using **Page Object Model** (POM) pattern for Opus platform, using **TestNG** and **Java**.

Project Intern

NICE Systems Ltd   🗓 January 2023 - May 2023

- Integrated **ElasticCache** to enhance user and text search performance for questions and answers.
- Implemented **Role-Based Access Control (RBAC)** for secure route management in the API, and employed **Rate Limiting** techniques to prevent resource abuse.
- Utilized **AWS S3 buckets** for efficient storage and retrieval of images.

Flutter Developer Intern

Azodha Systems Pvt Ltd   🗓 November 2022 – May 2023

- Implemented the **BLOC pattern** for state management and adopted **Clean Architecture** principles in the development of the **Practice Journal** project, using dependency injection.
- Integrated support for the **VendorModel** in the **Bluetooth Mesh** plugin of Flutter, enabling support for **Protocol Buffer** on **ESP-32**. Leveraged **Event Channels** and **Method Channels** in **Flutter** to facilitate communication.
- Utilized **protocol buffers** for efficient **data serialization**, enabling seamless communication with **ESP** devices over **Wi-Fi** or **BLE-Mesh** networks.

EDUCATION

B.E in Computer Engineering

Pune Institute of Computer Technology

🗓 July 2020 – May 2024   CGPA:9.47

Class XII

Dr. Kalmadi Shamarao Junior College

🗓 June 2020   93.54%

Class X

Dr. Kalmadi Shamarao High School

🗓 June 2018   90.20%

SKILLS

Flutter   NodeJs   Go   Postgres
C++   Linux   Docker   Java
Javascript   Firebase   Aws   SQL
MongoDb   Git/Github   React

ORGANIZATION

- **GDSC Cloud\DevOps Head**: Took SIGs on different GCP functionalities, Linux fundamentals, & Git/Github
- **PASC Android and Web Team**: Contributed towards development of platforms of Pulzion'23 (EMS, App, Crypto Server). Took SIGs on Flutter and trained a team of 12 people.
- **PISB Android Team**: Leaded Flutter App Development during Credenz 21-22.

COURSEWORK

- Distributed Systems
- Computer Networks
- Data Structures and Algorithms
- Operating Systems
- Database Management Systems

PROJECTS

Distributed MQTT Broker

Go | Redis | Raft   📅 August 2023 – Present

- Memberlist, a **gossip protocol**-based implementation for **Node Discovery**, as well as for **Health Checks** of the broker nodes.
- Custom **load-balancer**, which forwards all **TCP packets**, in a **Round-Robin** manner to respective Broker Nodes.
- Client State **Synchronization** using **ETCD (Raft)**, so that each broker knows to which broker the client is connected for a specific topic.
- **Packet forwarding** to intended broker node using **gRPC**, ensuring reliable data communication between nodes.
- **Redis streams** are used to decouple the connections between the brokers, ensuring a **fan-out delivery**. Redis is used as a **shared memory** for storing system state information.

Pulzion '22 & '23 WebApp[Deployment]

Flutter | Node.js | PostgreSQL   📅 February 2022 – April 2023

- Developed a sophisticated event management application, Pulzion '22 & '23, offering comprehensive features such as event booking and slot booking, interactive quizzes, and detailed event exploration.
- Demonstrated exceptional results with **3000+ overall** registrations and **400+ PlayStore** downloads, reflecting the widespread adoption and positive user reception.
- Implemented advanced state management techniques utilizing both **Provider** and **Bloc** patterns, resulting in a highly efficient and maintainable codebase.
- Seamlessly integrated **FCM (Firebase Cloud Messaging)** for real-time user engagement, leveraging personalized notifications and reminders for registered participants.
- Employed cutting-edge **Dependency Injection** techniques to optimize the performance and scalability of Bloc components.
- Facilitated secure and hassle-free payment transactions by integrating the **RazorPay** gateway into the application.
- Ensured robustness and efficiency by employing the **MVC pattern** and utilizing raw **SQL queries** to interact with the **PostgreSQL** database.

Cloud Accounting [Source Code]

Flutter | Node.js | Firebase | PostgreSQL   📅 September 2021 – May 2023

- Developed a professional application catering to the needs of Chartered Accountants for efficient client management and streamlined financial data handling.
- Implemented the utilization of **Firebase** as a powerful Backend-as-a-Service (BaaS) platform, employing **OAuth2 Google Sign-In Authorization** to ensure robust user authentication and data security.
- Incorporated secure file storage, chat functionality, document storage, and appointment booking features by effectively integrating various APIs and cloud storage services.
- Employed the Repository Pattern in **Node.js** to create resilient APIs, leveraging **TypeScript** and **Prisma** (PostgreSQL) for seamless data management and improved performance.
- Integrated **web sockets** to facilitate **real-time chat**, enabling seamless communication between users.

ACHIEVEMENTS

- Winner at Nice Systems Ltd Project Competition
- 2nd Runner Up at PICT InC, Concepts (CN Domain)
- Runner up PICT v/s VIIT Development Battle (Hackathon) 🌐
- Runner Up "Hackspiration" Hackathon conducted by MLSC, VIT
- Contributed towards the development of 4 apps on the Play Store 🌐
- Paper Publication: "Blockchain based solution design for Energy Exchange Platform" 🌐