Gokul Kannan R

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Education

Indian Institute of Technology, Hyderabad   July. 2019 – May 2023
Bachelor of Technology in Computer Science and Engineering   *Hyderabad, Telengana*

Experience

BlueStone Jewellery and Lifestyle   June 2023 – Present
Software Engineer   *Bengaluru, Karnataka*

- Working on migrating the **Billing software** used in the stores to **React** which will improve the **user experience** at stores and reduce the workload on salesperson simultaneously. The goal is to increase the sales by **30-40 percent**.
- Contributed to a microservice to get similar jewellery designs based on image uploaded using **Machine Learning** .
- Developed a project that aims to improve customer experience in stores by using **RFID** for scanning products.
- Wrote build and deploy bash scripts for the project and deployed it to the **AWS** and working on **CI/CD** using Jenkins.

Samsung R&D Institute, India   June 2022 – July 2022
Software Engineer Intern   *Noida, Uttar Pradesh*

- Developed **socket programming** solutions in **python** to transfer machine learning models from the server to clients.
- Split the ML model into packets in the server side, assigned packet IDs and reconstructed back the model in client side
- Identified and resolved **packet loss** issues by implementing an **acknowledgment**-based protocol, ensuring reliable data transmission. Verified that there wasn't any packet loss using the **diff command**.

Projects

Expense Tracker App | *Next.JS, Typescript, Tailwind CSS, tRPC, PostgreSQL*

- Developed an expense tracking app using the **T3 stack** enabling users to manage expenses by adding categories, recording transactions, and tracking financial trends using the modern features of Next JS like **SSR** and **SSG**
- Used **discord oauth** for authentication providing a secure experience for users and implemented visual analytics for spending patterns, allowing users to view and analyze their expenditures through **interactive charts**.
- Deployed and optimized the application for web, ensuring **fast load times** and a **responsive design** across devices. The live version of the project can be accessed at expenses.gokulkannanr.in.

Implementing Better RDT over UDP than TCP | *UDP, Computer Networks, Python*

- Developed a custom Reliable Data Transfer (RDT) protocol over **UDP** with advanced features, including **packet loss detection, acknowledgment, checksum-based corruption detection, and packet retransmission**.
- Achieved up to **3.4x higher throughput** than TCP under simulated network delay and packet loss, demonstrating significantly improved reliability and performance. Verified there was no packet loss using the **diff** command.
- Implemented **multithreaded** data handling for parallel data transmission and acknowledgment, enhancing overall data transfer efficiency. And used network analysis tools such as **Wireshark** and **tc** to simulate network conditions and validate data transfer accuracy, providing comprehensive performance insights.

Grievance Management System | *Django, ReactJS, PostgreSQL, Python, JavaScript, Firebase*

- Developed a user-friendly web application for users to **view and post grievances** and for authorities to manage and resolve them, featuring **image uploads**, **department-specific grievance categorization**
- Implemented secure user authentication and authorization using **Firebase** for sign-in, with a custom **Django JWT**-based authentication class and **role-based access control**, dynamically adjusting the UI based on user roles.
- Created an automated notification and escalation system using cron jobs, ensuring authorities receive timely reminders for pending grievances and **escalating unresolved issues** to higher authorities after defined time windows.
- Designed a **responsive UI** in React with **Sass CSS** for styling, supporting both **light and dark** themes to enhance user experience across devices and accommodate user preferences.

Relevant Coursework

- Data Structures
- Algorithms
- Database Management
- Operating Systems
- Computer Networks
- Computer Architecture
- Artificial Intelligence
- UI/UX course by Google

Technical Skills

Languages: JavaScript, Python, Go, C, C++, Java, SQL, HTML/CSS
Frameworks: Next.JS, React, React Native, HTMX, Spring Boot, Django, Tailwind CSS
Technologies: AWS, Firebase, Supabase, Raspberry Pi, Mongo DB