Mohammad Kaamil Mirza

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Education

Jawaharlal Nehru Technological University | **Aug. 2020 – Apr. 2024**
Bachelor of Technology in Computer Science and Engineering | *Hyderabad, India*

Relevant Coursework

- Data Structures
- Operating Systems
- Cloud Computing
- Artificial Intelligence
- Computer Networking
- Database Management Systems
- Deep Learning
- Linux

Experience

Xelpmoc Design & Tech. | **Jan 2025 – Present**
Software Engineer | *Hyderabad, India*

- Architected a high-throughput data ingestion pipeline for **CSV datasets with 1M+ records**, using **streamed parsing**, **parallel batching**, and **MongoDB bulk operations**. Optimized for **low memory** and **CPU usage** under heavy load by leveraging **asynchronous I/O** and **non-blocking data flows**. Reduced ingestion time by over **40%** while ensuring high write throughput, showcasing expertise in **NoSQL performance tuning**, **scalable system design**, and **data pipeline optimization**.
- Developed a **secure real-time dashboard** using **Next.js** and **shadcn/ui** for **LLM interaction**, including **PDF upload**, **version control**, and **streamed chat**. Integrated **RBAC**, **encrypted file storage**, and **OpenAI-compatible API streaming** for **data security** and **performance**.
- Engineered a **bank reconciliation system** for real estate finance, processing financial data. Developed **modular pipelines** for **layout-aware parsing**, **transformer-based document analysis**, and statement normalization. Implemented **rule-based logic**, **pattern recognition**, and **fuzzy matching** for **92%+ accuracy** in transaction reconciliation. Automated workflows with **Python**, **AWS Lambda**, **Pandas**, and **parallel processing**.
- Designed and implemented **distributed job queues** for scalable **document processing** and **agentic workflows** using **BullMQ** and **Redis**. Engineered **standardized task orchestration**, **idempotent workers**, and **auto-scaling job consumers**, enhancing **system performance**, **reliability**, and **throughput** by **3x** while ensuring **fault tolerance** and **efficient resource utilization**.
- Developed an internal **no-code RAG experimentation platform** using **LangChain**, enabling configurable **document loaders**, **embedding models**, **vector databases** (e.g., Pinecone, FAISS, Qdrant, Weaviate, Milvus), and **LLMs** (e.g., OpenAI, Cohere, Hugging Face Transformers). Implemented **local and cloud-based benchmarking** with metrics for **latency**, **token usage**, **retrieval precision**, and **context window efficiency**, supporting **rapid prototyping**, **fine-tuning**, and **deployment** of diverse RAG pipelines.

Lumara Jewels | **Aug 2024 - Dec 2024**
SDE-1 (Fullstack Developer) | *Hyderabad, India*

- Architected a **Server-Driven UI (SDUI)** system for dynamic home screen rendering using backend-controlled layout schemas and content modules. Developed a **template engine** enabling flexible composition of UI components like banners, carousels, and dynamic slots, supporting **real-time updates** without client-side redeployments. Improved **iteration cycles by 50%**, aligning with industry standards at platforms like Airbnb and Swiggy.
- Engineered a **real-time product filtering system** using **Elasticsearch aggregations** to generate dynamic, category-aware faceted filters across **categories, subcategories, occasions, and collections**. Developed resilient **sync pipelines** between **MongoDB and Elasticsearch** using **change streams**, **bulk indexing**, and **retry strategies** to ensure consistent, up-to-date product data under high throughput.
- Integrated for **scalable, secure payment gateway** for **ecommerce transaction processing**, supporting **captures, refunds**, and **payment links**. Designed **RESTful APIs** with **idempotent handling**, **S2S callbacks**, and **webhook verification** to ensure **data security** and **integrity**. Architected an **event-driven architecture** for **asynchronous payment events** and implemented a **fault-tolerant reconciliation layer** to manage **transaction failures** and **concurrency issues**, enhancing **system reliability** and **performance**.
- Engineered **high-performance Redis caching** for product filters, implementing **fine-grained cache invalidation** and **key-based expiry policies** to enhance **system scalability**. Optimized for **high-concurrency environments**, achieving a **60% reduction in cold start latency** and improving **filter load times** during **traffic spikes** for better **user experience**.

Lumara Jewels | **Sept 2023 - Aug 2024**
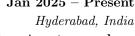*SDE Intern (Fullstack Developer)* | *Hyderabad, India*

- Engineered **advanced SEO architecture** for an **e-commerce platform** using **Next.js** (a **React framework**) with **server-side rendering (SSR)**, **dynamic metadata generation**, and **self-healing canonical URLs** to enhance **search engine visibility**. Integrated **Schema.org JSON-LD** structured data to optimize product pages, achieving **rich search results** and boosting **organic CTR** for improved **user experience**.

- Engineered a **scalable third-party service integration** for an **e-commerce logistics backend system**, using secure, idempotent **webhook endpoints** to manage **order lifecycle events** (e.g., dispatch, delivery, returns). Developed **finite state machines** and **event deduplication** to ensure **data consistency** and **reliable synchronization** across **distributed systems**, improving **system reliability** and **performance optimization**.
- Developed a **pricing engine** using the **Adapter Pattern** for **multi-context pricing logic** across **product pages**, **cart**, and **checkout**, improving **system extensibility** and **performance** in **e-commerce backend**.
- Engineered a **custom order invoicing** and **transactional email system** for an **e-commerce platform**, integrating secure **AWS S3** uploads via **pre-signed URLs** and **React-Email** with **Resend** for dynamic **email delivery**, achieving **98%+ delivery success** and enhancing **backend development**.
- Engineered a configurable **offers and coupon engine** supporting **rule stacking**, **usage thresholds**, **time-based activations**, and **targeted applicability** (**cart-level** and **product-level** logic). Implemented **admin dashboard configuration**, integrated **API-driven rule evaluation logic**, and ensured seamless **promotional control**. Enabled **discount optimization**, **customer segmentation**, and **real-time reporting** to drive **conversion rates** and **user engagement**.

Projects

Companion - Mobile Application for Sharing Notes Across University [click here] |
Javascript, MongoDB, Flutter, Amazon Web Services AWS, Firebase   **August 2023**
- Developed a campus student app with 2000+ Play Store downloads and 200 daily active users.
- Enabled sharing of 500+ digital notes and real-time chat interactions, fostering academic collaboration.
- Implemented CI/CD pipelines and automated testing, ensuring smooth deployment and high-quality releases.
- Demonstrated technical expertise, Dev-ops practices, and market research skills, delivering a successful and impactful project.
- Utilized AWS S3 to store the documents and EC2 Instance with Elastic IP to host the backend service

Razorpay-MCP Server NPM Package (Click Here)
Node.js, Express.js, TypeScript, Razorpay   **April 2024**
- Developed an **open-source NPM package** called razorpay-mcp, a Model Context Protocol (MCP) (Anthropic) server enabling AI assistants like Cursor, Claude, and Copilot to access Razorpay payment gateway data.
- Implemented tools for fetching Razorpay data, including payments, orders, settlements, and more, with pagination support for large datasets.
- Ensured compatibility with multiple transport methods like stdio, SSE, and Docker, facilitating various deployment scenarios.
- Used **TypeScript** for strict type safety, authoring modular, testable code for easy extension.

Technical Skills

Languages: Javascript, Typescript, Go, Dart, Python, Java, C, HTML/CSS, SQL, Lua, Bash

Developer Tools: Git, Amazon Web Services (AWS), VS Code, Google Cloud Platform (GCP), Android Studio

Technologies/Frameworks: Langchain, Android, iOS, Notifications, IOT , Microsoft Excel, Linux/Unix, GitHub, Ansible, Flutter, Docker, Express.js, Node.js, Tableau, Redux, Tanstack Query, React Query, GetX, Kafka, Service Bus, Grafana, Ubuntu, Windows, Posthog, Qdrant, Pinecone, Razorpay

Database: MongoDB, MYSQL, POSTGRESQL, Redis, Firestore, Simple DB

Cloud Technologies: EC2, ELB, Elastic IP's, S3, AMI, Cloud Front

Achievements

- **Google Hack4Change - Winner [Click Here]** (Aug 2023, T-Hub, Google India, Indian School of Business (ISB)): Developed an AI-based crop monitoring application using Convolutional Neural Networks (CNN). The solution drastically reduced the costs of nitrogen and water content monitoring in agricultural fields to pennies, providing an affordable tool for farmers to optimize crop yield.
- **Dark Pattern Buster Hackathon** (Aug 2023, IIT BHU, Ministry of Consumer Affairs): Designed and developed an AI-powered solution to identify and track dark patterns in online interfaces. The project aimed to enhance consumer protection by highlighting deceptive design practices in digital products.
- **App Fiesta - Winner** (2023): Secured 1st place for engineering a full-stack **campus-connect mobile application** using **Flutter**, **Firebase**, and **MongoDB**. Delivered features including real-time messaging, event announcements, and resource sharing, and student engagement. Integrated **Material UI** for consistent design and cross-platform responsiveness.
- **Muffakham Jah Hackathon - Winner also Major League Hacking (MLH) [Click Here]** (2023): Won 2nd prize for building a novel and impactful solution that addressed a pressing challenge, showcasing both technical prowess and creativity.

Publications

- **A Mobile Application for Crop Optmisation using Satellite Imagery and Disease Detection using AI** IJRASET, ISSN: 2321-9653; Volume 12 Issue IV Apr 2024 [**Click here**]