

Maanas Singh

+91 9900632800 | maanasmsingh@gmail.com | [LinkedIn](#) | [GitHub](#) | [Codeforces](#)

EDUCATION

BITS Pilani

B.E. Electronics and Communications, M.Sc. Mathematics (Dual Degree)

Pilani, Rajasthan

2021 – 2026

EXPERIENCE

Uber

Software Engineering Intern

Bengaluru, Karnataka

May 2025 – July 2025

- Developed a **LangGraph-based RAG assistant** in **Python** to answer complex compliance queries, designing a **multi-agent architecture** with tools for structured data retrieval from a normalized **MySQL** database.
- Built and deployed an automated **data synchronization pipeline** to keep the assistant's knowledge **up-to-date**, updating the **MySQL** database with recent compliance data, and integrating active alerting and monitoring.
- Created a critical **data change detection pipeline** sourcing sub-merchant data from various **Hive** sources and triggering downstream compliance workflows by publishing to a **Kafka** topic with a **Golang** consumer.

TrueFoundry

Software Engineering Intern

Remote

Oct 2024 – April 2025

- Worked on the **Autopilot module** of TrueFoundry's **NestJS backend**, enabling dynamic scaling of **CPU/memory requests and limits** for Kubernetes workloads using various metrics.
- Contributed to **KubeElasti**, a **Go-based** open-source system for **scale-to-zero**, composed of a **Kubernetes operator** and a reverse proxy resolver.
- Implemented the **scale-to-zero logic from scratch**, designing an extensible scaler interface and building a **Prometheus-based scaler** to trigger scale-down based on metric thresholds and comparison operators.

GPlan

Software Development Intern

Pilani, Rajasthan

Aug 2023 – Aug 2024

- Developed **backend infrastructure** and **REST APIs** for automated floorplan generation (**Django**, **PostgreSQL**), integrating core graph algorithms and Stripe payments; deployed robust, scalable systems with **Docker**, **Nginx**, and CI/CD pipelines.
- Built the web backend for the GPlan game using **Go (Gin)** and **PostgreSQL**, enabling real-time gameplay and seamless integration with existing services.

BITS Pilani

Backend Developer & Teaching Assistant

Pilani, Rajasthan

April 2023 – June 2023, May 2024 – Dec 2024

- Hostel Allocation Portal:** Architected and deployed the hostel allocation portal (**Express.js**, **Node.js**, **MongoDB**, **Kubernetes**) serving **3500+** students with **98.9%** accuracy and **zero-downtime**.
- Teaching Assistant — Web Programming:** Mentored hundreds of students and created and evaluated assignments in web technologies: (**HTML**, **CSS**, **JS**, **PHP**)

PROJECTS

- BITS Fest Backend Infrastructure:** Developed **REST APIs** and async wallet system (**Django**, **PostgreSQL**, **Docker**) processing **INR 2.5Cr+** for **5,000+** users (**1,600+** peak concurrent); ensured **99.9% uptime** with Dockerized, load-balanced deployment.
- Minimal Relational Database in Go:** Built a **relational database from scratch** in **Go**, starting with a **B+tree** for efficient data querying and manipulation. Implemented **durability features**, a **copy-on-write KV store** supporting **concurrent transactions**, and a custom SQL-like query language.

COMPETITIONS

- Candidate Master, Codeforces** (Rating: 1966, Rank: 156 in India)
- ICPC Regionalist, Amritapuri 2024-25**

TECHNICAL SKILLS

Languages: Go, Python, JavaScript, Lua, C, C++, Java, SQL

Frameworks: Django, Django REST Framework, Node.js, Express.js, NestJS

DevOps: Docker, Kubernetes, Nginx, Gunicorn, Github Actions, Linux

Data: PostgreSQL, MongoDB, MySQL, SQLite, Hive, Kafka, LangGraph