

# Geetansh Agrawal

☎ (+91) 94793 94820 | ✉ geetansh810@gmail.com | 📱 geetansh810 | 💻 geetansh810 | 📖 LeetCode: geetansh810

Software Engineer with a deep interest in how systems behave at scale. I care about clarity in design, correctness in implementation, and consistency in execution. Motivated by learning, improving, and building technology that is robust, efficient, and meaningful. I approach engineering with ownership, curiosity, and the drive to create lasting impact.

## Experience

### Tata Consultancy Services (TCS) – TCS iON Digital Assessment Platform

Bengaluru, India

PRODUCT ENGINEER

Aug 2023 – Present

- **Enabled the platform to reliably support 5M+ daily assessment transactions** by decomposing the monolithic evaluation engine into **domain-driven microservices**, defining clear service boundaries and implementing idempotent REST interfaces predictable request handling.
- **Improved system throughput by 35% and removed workflow bottlenecks** by transitioning core evaluation flows to a **distributed event-driven architecture**, using Kafka/RabbitMQ with asynchronous message queues, consumer groups, and dead-letter handling.
- **Reduced database query latency by 40% and improved data throughput for 1M+ candidate records** by restructuring workloads across **MySQL (transactional)** and **MongoDB (document storage)**, applying index tuning, read/write separation, and Redis-based hot-cache layers for high-frequency.
- **Increased deployment reliability and minimized environment drift** by adopting **immutable Docker image builds**, maintaining environment parity, and enabling zero-downtime rolling deployments on **AWS EC2** via automated CI/CD pipelines.
- **Reduced response time by 25% and strengthened operational security** by refactoring core modules using scalable design patterns and implementing **RSA/AES encrypted logging** with key rotation.

## Technical Skills

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|--|---|
| • <b>Backend &amp; Distributed Systems</b> | Java, Spring Boot, Node.js, Microservices, Kafka, RabbitMQ  |
| • <b>Databases &amp; Caching</b>           | MySQL, MongoDB, Redis                                       |
| • <b>Cloud &amp; DevOps</b>                | AWS (EC2, S3, Lambda), Docker, CI/CD                        |
| • <b>Frontend</b>                          | React, Next.js, JavaScript                                  |
| • <b>Core CS</b>                           | Data Structures, Algorithms, System Design, Design Patterns |

## Projects

### ByteBox - Cloud File Storage App

[gbytebox.vercel.app](#)

NEXT.JS, NODE.JS, MONGODB, TELEGRAM API, AWS

- Served **100+ users** with secure personal storage by using the **Telegram Bot API** for encrypted uploads and instant notifications.
- Achieved a **90% cost reduction** by replacing S3-style storage with **Telegram's persistent file backend** as a low-cost alternative.
- Enabled fast folder browsing by designing a **tree-based directory model** with lightweight recursive lookups.
- Built a system **different from traditional cloud file managers** through a novel Telegram-driven storage workflow.

### Vibe - Real-Time Chat App

[vibe-chat-app.com](#)

REACTJS, NODE.JS, SOCKET.IO, WEBRTC, MONGODB

- Handled **50+ concurrent users** by building a **Socket.io WebSocket layer** for low-latency message delivery.
- Delivered secure video calls by integrating **WebRTC** with TURN/STUN signalling for peer connectivity.
- Improved chat history load time by refining **MongoDB indexes** and caching frequent message batches.

## Achievements

- Built a **real-time visitor analytics system** using an **event-driven streaming architecture**, securing **2nd Place at the GreenDeck Hackathon**.
- **Lead App Developer at Google Developer Student Club (GDSC)** — Conducted **5+ hands-on bootcamps** and mentored **100+ students** in full-stack development and project implementation.

## Education

### University Institute of Technology RGPV

Bhopal, India

B.TECH — COMPUTER SCIENCE & ENGINEERING; CGPA: 8.23

May 2019 – Jun 2023