



# Kiran S

Roll No.: B22CS100

B.Tech in Computer Science & Engineering

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GitHub

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## Summary

Computer Science student with practical experience in backend development and RESTful API design. Built scalable, production-ready web applications using Python, FastAPI, Java, and Spring Boot. Skilled in writing clean, testable code with strong debugging, data modeling, and performance optimization skills.

## Education

Degree	Institute	CGPA	Year
B.Tech(CSE)	Indian Institute of Technology, Jodhpur	8.35	2022-Present
Senior Secondary	CBSE Board	93.0%	2022
Secondary	CBSE Board	93.2%	2020

## Projects

- **Artificial Swarm Based Decision Making and Opinion Gathering** GitHub  
*Java, Spring Boot, Rest API, JavaScript, Thymeleaf, Microservices, WebSocket, Python (PSO), MySQL*
  - Designed and built a full-stack real-time platform that enables group decision-making using Swarm Intelligence, with over 7,000 lines of code written solo.
  - Integrated Particle Swarm Optimization (PSO) via a FastAPI microservice to compute group consensus across 1,000+ inputs per session, updated dynamically every 5 seconds.
  - Developed a modular question engine supporting 20 options per question, with multi-round flows, real-time fitness score tracking, and convergence-based decisions.
  - Created an organizer dashboard with session control, live monitoring, and PDF report export, enhancing usability for moderators.
  - Wrote JUnit and integration tests covering 70% of service and controller layers. Maintained API response time <150ms and CPU usage <35% under simulated load.
  - Followed RESTful principles, modular MVC structure, and MySQL indexing for performance.
- **SmartScribe – AI-Powered Media Understanding Platform** GitHub  
*Python, Fast API, Node.js, React, Tailwind CSS, Whisper, Appwrite, Docker, Hugging Face, Ollama LLM*
  - Built a full-stack tool that transcribes YouTube/audio/video content and enables interactive Q&A using context-aware retrieval.
  - Used OpenAI Whisper for transcription and local LLMs (Mistral via Ollama) for question answering, achieving 70–90% accuracy on 15+ videos of 5–20 minutes.
  - Integrated Retrieval-Augmented Generation (RAG) using Hugging Face embeddings and chunked vector search for fast, relevant responses.
  - Optimized performance to deliver full responses under 90 seconds, with chat replies in under 5 seconds on CPU-based systems.
  - Engineered scalable architecture using modular FastAPI, Appwrite for session management, and Docker for containerized deployment.
- **API Rate Limiting Gateway** GitHub  
*Rate Limiting Algorithms, Middleware, Spring Boot, Redis, React*
  - Developed a robust API gateway to prevent overuse and ensure fair client access, handling 3,200+ requests/min with sub-10ms decision latency.
  - Implemented Fixed Window and Token Bucket algorithms, with plug-and-play support for custom strategies.
  - Created a real-time Admin Dashboard using Redis for tracking and Chart.js for visualization, allowing live control of rate limits.
  - Designed the system with middleware-based modular architecture, persistent logs, and Redis-backed counters to support future auth and analytics features.

## Skills

- **Languages:** Python, Java, JavaScript, SQL
- **Frameworks:** Spring Boot, FastAPI, React, Node.js
- **Databases:** MySQL, Redis
- **Tools & Practices:** Git, Docker, Postman, IntelliJ, VS Code, Appwrite, CI/CD, RESTful APIs, WebSocket
- **Software Engineering Concepts:** System Design, Concurrency, Unit Testing, Microservices, Modular Architecture, Code Versioning, API Design, Performance Tuning

## Key Courses

- Computer Networks: A
- Database Management Systems: A-
- Cybersecurity
- Operating Systems: A-
- Data Structures and Algorithms: A
- Software Engineering