SURAJ SAMANTA

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EDUCATION

Dr. Akhilesh Das Gupta Institute of Professional Studies, New Delhi Expected 2028
B.Tech in Computer Science Engineering | CGPA: 9.4 / 10.0

TECHNICAL SKILLS

Languages: Java, Python, JavaScript, TypeScript (basic)
Backend & Systems: Spring Boot, Spring Security, Spring Data JPA, Hibernate, FastAPI, Django, REST APIs, Microservices, Event-Driven Architecture
Distributed Systems: Apache Kafka, gRPC, WebSockets, Scalable System Design
Databases: PostgreSQL, MySQL, TimescaleDB, Redis, Pinecone (Vector DB)
Testing & Build: JUnit, Mockito, Maven, Postman, REST API Testing
DevOps & Tools: Docker, Git, GitHub, CI/CD (GitHub Actions)
Frontend & Tools: React.js, Next.js, Three.js, WebGL, Zustand, Tailwind CSS, Leaflet

CERTIFICATIONS

- **Stanford University / Coursera —** Machine Learning Specialisation (Andrew Ng) | *Supervised learning, unsupervised learning, reinforcement learning*
- **Telusko / Udemy —** Java & Spring Boot Development *Spring AI, Core Java, OOP, Spring Framework, REST API development, Spring Security*

PROJECTS

Patient Management Service | Java, Spring Boot, Kafka, gRPC, Docker, PostgreSQL, JUnit,Maven Suraj-codes1410/Patient-management-services
Engineered 4 independently deployable microservices using Spring Boot, enabling isolated scaling of billing, auth, analytics, and patient data modules with zero shared state between services.

- Reduced inter-service communication overhead by implementing gRPC for low-latency synchronous RPC calls alongside Apache Kafka for async event streaming, supporting high-throughput real-time data pipelines.
- Secured all API endpoints with Spring Security, JWT authentication, and role-based access control (RBAC), protecting sensitive healthcare data flows across all microservice boundaries.
- Validated core business logic with JUnit and Mockito unit tests; containerized the full system with Docker using Maven for reproducible, environment-consistent builds.

SAHAI — Mental Health & Lifestyle Platform | Django, FastAPI, React, WebSockets, MySQL,Pinecone Suraj-codes1410/Sahai
Smart India Hackathon 2025 — National Level Finalist

- Architected a full-stack mental health platform supporting appointment booking, live peer chat, forums, and an AI therapy assistant — designed for 1,000+ concurrent sessions via a normalized MySQL relational schema.
- Eliminated polling latency by implementing bidirectional WebSocket communication between users and professionals, reducing message delivery to under 100ms in live sessions.
- Built a RAG-based AI microservice with Pinecone vector DB, ingesting structured therapy content to serve context-aware chatbot responses, measurably reducing irrelevant replies versus a base LLM.
- Designed scalable REST APIs across Django and FastAPI handling user auth, appointment scheduling, forum threading, and professional matching — all modularized for independent deployment.

Multiverse OS — Immersive Developer Portfolio | Next.js, React, Three.js, WebGL, Zustand,Tailwind CSS Suraj-codes1410/Multiverse-OS *Deployment in progress — fully built, CI/CD pipeline configured via GitHub Actions + Vercel*

- Built a full-stack interactive portfolio as a simulated OS in Next.js and React, featuring a 3D WebGL desktop rendered with Three.js, custom WebGL shaders, and animated scene transitions between worlds.
- Engineered a live CLI terminal overlay with 15+ commands, an ORACLE AI assistant with context-variant prompt responses, and a Recruiter Mode dashboard surfacing projects and skills in under 3 clicks.
- Architected global state across all OS modules — active world, terminal history, ORACLE context, recruiter view — using Zustand with a single shared store and zero prop-drilling.
- Optimized 3D scene performance via lazy loading, texture compression, and progressive Three.js rendering, targeting sub-3s FCP; automated deployment via GitHub Actions to Vercel.

HONORS & AWARDS

- **Top 5 in India — NASA Space Apps Challenge 2025** | Competed against 823 teams; built ORBITAIR, an AI-powered AQI forecasting platform integrating NASA TEMPO, EPA/OpenAQ, and NOAA feeds with 98% prediction accuracy.
- **National Finalist — Smart India Hackathon 2025** | Selected from thousands of national teams to present SAHAI, a full-stack AI mental health platform, at the national final stage.
- **Top 5 & ₹7,000 Prize — Smart Delhi Ideathon 2025** | Recognized for civic tech innovation combining backend systems and AI for urban problem-solving.