

VIBHOR MISHRA

SOFTWARE ENGINEER | FULL-STACK DEVELOPER | AI/ML ENGINEER

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PROFESSIONAL SUMMARY

Software Engineer and AI/ML Engineer with hands-on experience building full-stack web applications, REST APIs, real-time systems, computer vision pipelines, and multi-agent platforms. Proficient in Python, JavaScript, TypeScript, React, Node.js, FastAPI, SQL, MongoDB, Firebase, Docker, and cloud deployment. Strong foundation in data structures and algorithms, system design, distributed systems, machine learning, and secure authentication.

TECHNICAL SKILLS

Programming Languages: Python, Java, JavaScript ES6+, TypeScript, SQL, HTML5, CSS3, Dart

Web Development: React, Next.js, Node.js, Express.js, FastAPI, Vite, REST APIs, WebSockets, responsive design

AI and Machine Learning: PyTorch, scikit-learn, OpenCV, LangChain, RAG, Gemini API, DeepFace, DenseNet201, CNN, ANN, RNN, LSTM

Databases and Caching: MongoDB, PostgreSQL, MySQL, Firebase Realtime Database, Firestore, Redis, H2

Cloud and Tools: Git, Docker, AWS, Google Cloud, Railway, JWT, MQTT, Kafka, CI/CD concepts

Core Concepts: Multi-agent systems, neurosymbolic AI, system design, data structures and algorithms, OOP, distributed systems, route optimization

PROFESSIONAL EXPERIENCE

RineX.AI | *Artificial Intelligence Intern* Bhopal, India | Nov 2023 - Dec 2023

- Developed supervised, unsupervised, and deep learning pipelines using Python, PyTorch, and scikit-learn, including regression, classification, SVM, decision trees, K-Means clustering, ANN, CNN, RNN, and LSTM models.
- Built end-to-end AI projects covering data ingestion, preprocessing, feature engineering, model training, evaluation, and performance analysis for weather classification, recommendation systems, and predictive modeling.
- Implemented computer vision and NLP workflows with OpenCV and explored generative AI architectures including GANs, autoencoders, and transformers.

Saksham Digital Technology | *Web Design Intern* Bhopal, India | Jul 2024

- Built responsive multi-page websites with HTML5, CSS3, and JavaScript, including accessible UI patterns, DOM interactions, client-side form validation, and dynamic content loading.
- Improved layout consistency, front-end performance, and cross-browser compatibility while collaborating with designers on UI/UX implementation.

SELECTED PROJECTS

Kachra Seth | *AI-Powered Urban Waste Management Platform* React, Node.js, MongoDB, DenseNet201, Dijkstra, Genetic Algorithm

- Architected a three-layer SaaS platform for citizen engagement, AI waste classification, and municipal operations, training a DenseNet201 CNN on 50,000+ Indian waste images across seven waste categories.
- Implemented QR-code bin tracking, vehicle GPS tracking, live fill-level monitoring, complaint management, and offline-capable municipal workflows.
- Combined Dijkstra shortest-path routing with a Genetic Algorithm for vehicle routing, delivering reported results of 30% fuel savings, 40% faster collection cycles, and 80% fewer bin overflows.
- Awarded 3rd Place at Anveshana 2025 Tech Fest. Live demo: kachra-seth.vercel.app | GitHub: github.com/akshayvarma121/kachra-seth

MARG | *Multi-Agent Crisis Response Platform* | *Google Solution Challenge 2026* Python, FastAPI, Firebase RTDB, React, TypeScript, Gemini 2.0 Flash, Docker, Railway

- Built a neurosymbolic multi-agent orchestration system with logistics, medical, relief, and coordination agents operating through a shared Firebase real-time state machine.
- Designed an asynchronous FastAPI backend with background job processing and REST APIs, then deployed a containerized service on Railway with rolling updates.
- Developed a React and TypeScript command dashboard with WebSocket live state streams, decision logging, real-time monitoring, and crisis intervention controls.

IRIS | *AI-Powered Attendance System with LLM Interface* Python, DeepFace, FastAPI, Firebase, React, JWT

- Developed a biometric attendance platform using DeepFace facial recognition and rotating JWT-signed QR-code fallback authentication for deployment across 500+ students.
- Built IRIS-LLM, a natural-language query layer that enables faculty to retrieve attendance records, generate reports, and perform analytics through an LLM pipeline.
- Implemented 30-second token rotation and RS256 asymmetric JWT signing to reduce screenshot and replay-attack risks. GitHub: github.com/vibhormishra1/IRIS-LLM

VEDA | *Multi-Agent Career Simulation Platform* Python, FastAPI, LangChain, Firebase, React, OpenAI Agent SDK

- Built a multi-agent simulation platform where AI personas representing product managers, senior developers, clients, and junior developers simulate software engineering workflows.
- Implemented sprint planning, code reviews, standups, agent memory persistence, inter-agent messaging, persona consistency through system-prompt chaining, and application state management.

SkillBridge | *Voice-First Internship Portal for Rural India* React, Vite, FastAPI, MongoDB, Redis, Web Speech API

- Developed a progressive web app connecting rural youth with internships through a multilingual voice-first interface supporting English, Hindi, and Tamil.
- Implemented conversational onboarding, real-time validation, and a profile-to-internship matching algorithm with Redis caching for faster opportunity retrieval.
- Live demo: skill-bridge-ten-dusky.vercel.app | GitHub: github.com/akshayvarma121/skill-bridge

DHARA | *Gamified Environmental Platform* React, Vite, TypeScript

- Built an environmental impact platform with interactive challenges, progress tracking, rewards, and React-based Entity-Relationship and Use Case diagrams for architecture and data-model validation.
- Live demo: eco-rise.vercel.app

EDUCATION

Sagar Institute of Research & Technology, RGPV University | *B.Tech in Computer Science and Engineering* Bhopal | Aug 2023 - May 2027

Relevant Coursework: Data Structures and Algorithms, Operating Systems, Computer Networks, Database Management Systems, Software Engineering, Object-Oriented Programming

IIT Mandi x NSDC x Masai School | *Minor in Computer Science and Engineering and Advanced Technologies* Oct 2024 - 2025

Completed 3 of 3 courses | ID: IITMCS_24093012

CERTIFICATIONS

Oracle Certified Foundations Associate - Agentic AI (Jul 2026) | NPTEL Elite - Java, 83%, IIT Kharagpur (Jul-Oct 2025) | RAG for Enhanced AI Outputs, IBM SkillsBuild (Jul 2026) | NPTEL Database Management Systems, IIT Kharagpur (Jan-Mar 2026) | Gemini Certified, Google (2025) | Data Analyst, OneRoadmap (Jul 2026) | DSA with Java, Apna College (2025)

ACHIEVEMENTS

- 3rd Place - Kachra Seth, Anveshana 2025 Tech Fest
- 6th Rank - SolveExpo 2026 Startup Innovation Challenge, JNCT Bhopal, selected among 100+ startups
- 4th Rank - Tech-Sageathon 2K26, National Level Hackathon, SIRT
- Participant - Google Solution Challenge 2026 with MARG crisis response platform
- Participant - Dawn of Code Hackathon, VIT Bhopal, Sep 2025
- Participant - Mood Indigo 2024, IIT Bombay, Humour Us and Speak Up initiative