

KARTIK VERMA

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EDUCATION

K. J. Somaiya Institute of Technology, Affiliated with the University of Mumbai
Bachelor of Technology in Computer Engineering (Honors - AIML)

May 2023 – July 2027

Average CGPA – 9.04 (Semester VI)

Courses: DSA, Object Oriented Programming, Database Management Systems, Operating Systems, Computer Networks.

WORK EXPERIENCE

[\[Link\]](#)

Software Developer Intern | JSW Steel (On-site)

June 2025 - July 2025

- Engineered a Flask + Oracle Database system spanning **16 modules and 42 REST routes** to digitize the full industrial-asset lifecycle (inventory, grinding, inspection, assembly) across a **17-state roll-status workflow** tracked over **12 relational tables**.
- Built an Excel ingestion pipeline enforcing **40-column schema validation and 26 required-field checks**, with transactional rollback and full audit-trail backups on every submission, plus business-rule validation (6-roll/stand capacity limits, duplicate-type position checks) for stand assignment.

Machine Learning Intern | Claidroid Technologies (Remote)

June 2025 – July 2025 & Dec 2025 – Jan 2026

- Built and deployed an NLP-based college FAQ chatbot (Flask, scikit-learn, NLTK) covering **75 intents**, using WordNet-based augmentation to expand training data to **3,200+ examples**; benchmarked **5 classifier families** with GridSearchCV, achieving **92.7% test accuracy** with tuned Random Forest.
- Built a hospital readmission risk prediction system (Streamlit, XGBoost, SHAP) trained on **100K+ patient records** and **13 clinical features**, achieving **85.2% accuracy and 88.9% AUC-ROC**, with SHAP-based explainability and an interactive analytics dashboard.

Technical Intern | Central Railway (On-site)

July 2024 – August 2024

- Studied Mumbai's EMU railway operations, maintenance workflows, and safety protocols alongside engineering teams, building working knowledge of large-scale industrial systems.

PROJECTS

GeoSwipe – World At Your Fingertips

[\[Link\]](#)

- Built a full-stack heritage-exploration platform (React 19, Express 5, MongoDB, Three.js, Socket.IO) integrating **9 external REST APIs** across **126 heritage sites (36 UNESCO)** with **780 quiz questions**, plus a Groq-hosted LLM assistant for heritage Q&A, safety guidance, and structured AI trip planning.
- Engineered a fully client-side MediaPipe gesture-recognition pipeline (**9 gesture classes at 20 FPS**), validated against the original implementation across **20,000 test poses with zero mismatches** — replacing a legacy server relay that cost ~3.2GB/hour per user.
- Designed a two-tier (in-memory + MongoDB) caching architecture with per-resource TTLs and API-key pooling, cutting a live lookup's response time **from 8.7s to 2ms**, and built a real-time 1v1 quiz-duel mode (4 modes, 10 rounds) over Socket.IO.

Atomix – Your Personal Laboratory with AI

[\[Link\]](#)

- Built a Unity 6 (C#) VR/desktop chemistry-lab simulator (~**110 scripts**, ~**40,000 LOC**) featuring **8 simulated inorganic reactions** with a custom free-hand quantity-validation engine that detects overdose, underdose, wrong-order, and heating-duration errors in real time.
- Developed an in-lab AI chemistry assistant (Convai API, voice + text) grounded in live experiment measurements, with an offline rule-based fallback for uninterrupted use, plus live in-engine 3D molecular animations (bond breaking/forming, electron transfer) for all 8 reactions.
- Built a separate assessment mode with **18 timed tasks** (8 practical, 10 theoretical) and a coin-economy ranking system; validated the full simulation with **226/226 passing automated tests**.

Hospital Operations Sync Platform

[\[Link\]](#)

- Engineered a full-stack hospital operations platform (Django REST Framework, React, MySQL) with **11 feature modules** across a **33-table schema**, serving **4 role-based dashboards** (Doctor, Nurse, Admin, Receptionist) for real-time bed occupancy, OPD queue management, and inter-hospital capacity sharing.
- Trained and deployed **6 scikit-learn models across 3 prediction domains** — OPD wait-time regression, inventory stockout classification + demand-depletion regression, and billing profit/loss prediction — plus a rule-based engine linking live OpenWeatherMap/AQI data to medicine-demand forecasting.
- Integrated a secure Razorpay payment gateway (order creation, HMAC-SHA256 webhook signature verification) for end-to-end billing and payment confirmation.

TECHNICAL SKILLS

[\[Link\]](#)

Programming Languages: C, Java, Python, JavaScript

Framework & Libraries: HTML5, CSS3, Bootstrap, Tailwind, React.js, Node.js, Express.js, Flask, Django

ML/Data: scikit-learn, XGBoost, SHAP, NLTK, Pandas, NumPy

Databases : MySQL, MongoDB, Oracle Database , Supabase

Tools & Platforms: Git, GitHub, Unity, MongoDB Atlas , Redis, Render, AWS , Docker

ACHIEVEMENTS & CERTIFICATIONS

- **National-Level Innovation Showcase** at CIIA-5 , Nehru Science Centre , Mumbai (2025-26) - GeoSwipe
- **Winner** – IET Intech 2k26 (National Level) (2025-26) - Atomix
- **Runner-up** - AI-Robo Festival (2026) - GeoSwipe
- **Letter's of appreciation** from Somaiya college for CIIA-5 and AIU-Squash
- **Amazon AWS Academy Graduate** - Cloud Foundations
- **Represented KJSIT & Mumbai University** in All India University Matches 2025-26

HOBBIES

Squash, Chess, Badminton, Travelling