

SAUD SATOPAY

FULL-STACK DEVELOPER · AI/ML ENGINEER

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SUMMARY

Full-stack developer with **2+ years of production experience** shipping AI-powered systems end-to-end — from PDF ingestion and hybrid retrieval to React dashboards and Flutter mobile apps. **Hackathon winner at Nirman 2026** (Amity University Mumbai). Comfortable owning a feature from data pipeline → ML model → API → UI. B.Tech in Computer Engineering (2023–2027).

TECHNICAL SKILLS

Languages	Python, TypeScript, JavaScript, Dart, SQL, Java, C++
AI / ML	PyTorch, Transformers, FlagEmbedding (bge-m3, bge-reranker-v2), Sentence-Transformers, FAISS, BM25, Cross-Encoder Reranking, RAG, Scikit-learn, XGBoost, Isolation Forest, SMOTE, YOLOv8
LLM Integrations	Google Gemini (gemini-2.0-flash), Groq (Llama 3.3 70B), HuggingFace Hub, prompt engineering, structured outputs, fallback chains
Frontend	React 19, Next.js 16 (App Router), TypeScript, Tailwind CSS v4, Framer Motion, shadcn/ui, Vite, Recharts, Leaflet, PWAs
Backend	FastAPI, Uvicorn, Node.js, Express, REST APIs, Pydantic, async I/O
Mobile	Flutter 3.x, Riverpod, GoRouter, Hive, Firebase (Auth · Firestore · Storage)
Cloud & Tools	Vercel, Google Cloud, Twilio, Google Maps Platform, Git/GitHub, pytest, OAuth, CORS hardening

EXPERIENCE

Junior Software Developer (Full-Stack) · **Orbits India**

Oct 2023 – May 2025

- Built and shipped responsive web applications using **React, TypeScript, and REST API integrations**, collaborating with backend teams on end-to-end features.
- Proposed and implemented technical alternatives that **improved UI performance** and user experience on production projects.
- Owned cross-browser testing, resolved critical UI/logic bugs, and **reduced post-release defects**, shortening delivery time.
- Translated client requirements from meetings into shipped functional features within tight project timelines.

HACKATHONS & ACHIEVEMENTS

- 🏆 Winner** — Nirman 2026 Hackathon, Amity University Mumbai (April 2026) — *CrackWatch*
- Solo participant — Sigma Squad × Bureau of Indian Standards Hackathon (April 2026) — *BIS Compass*, built single-handed in 7 days
- Top 5 Finalist** — TECH SAGAR FinTech Fraud Detection Hackathon, YTIET Bhivpuri (March 2026) — *FraudShield*

PROJECTS

BIS Compass — AI-Powered BIS Standard Recommender

Apr 2026

Python · FastAPI · Next.js 16 · bge-m3 · FAISS · BM25 · Gemini · Groq · github.com/SaudSatopay/BIS-COMPASS

- Hybrid retrieval RAG engine over a 929-page regulation corpus returning top-5 Bureau of Indian Standards in **under 1s per query** on consumer GPUs.
- Achieved **100% Hit@3** and **0.9333 MRR@5** on the public test set — beating all three rulebook targets by 2×–11×.
- Designed pipeline: PDF ingestion → 559 structured records → BM25 + dense retrieval → Reciprocal Rank Fusion → cross-encoder rerank → IS-code whitelist guard (zero hallucinated codes by construction).
- Shipped Next.js 16 demo UI with optional Gemini/Groq keys (localStorage), confidence bands, and an animated architecture walkthrough.

CrackWatch — Smart Infrastructure Command Center 🏆

Apr 2026

Python · FastAPI · React 19 · YOLOv8 · OpenCV · Twilio · Leaflet · github.com/SaudSatopay/CrackWatch-NirmanHackathon

- **Won Nirman 2026 Hackathon** at Amity University Mumbai — built in 48 hours.
- Three-surface ecosystem: govt dashboard + citizen PWA + **WhatsApp bot** (zero install — addresses 500M Indian WhatsApp users).
- Triple-model AI pipeline (YOLOv8s-RDD + CrackSeg + OpenCV) running **fully offline at 757 ms per image**; monsoon-adjusted predictive engine estimates road-failure timeline.
- 5-layer fraud detection (image authenticity, GPS, relevance, duplicates, rate limiting) and a public "Wall of Shame" contractor accountability ranking.

FraudShield — FinTech Fraud Detection System

Mar 2026

Python · scikit-learn · XGBoost · Isolation Forest · React 19 · TypeScript · Vite · github.com/SaudSatopay/FraudShield

- End-to-end fraud detection pipeline over **100K+ unlabelled transaction records**; achieved **AUC-ROC 0.953** and surfaced 7 distinct fraud patterns.
- 5-stage Python pipeline: data cleaning (5 amount + 7 timestamp formats, 70+ city normalisations) → EDA → 12-feature engineering (velocity, z-scores, device fingerprint) → Isolation Forest + XGBoost with SMOTE → explainability.
- React 19 + TypeScript dashboard with 7 analytical tabs (Overview, Data Quality, EDA, Feature Importance, Model Performance, Fraud Patterns, Transaction Explorer), deployed on Vercel.

InterviewPro AI — Voice-Driven Mock Interview Platform

Mar 2026

React · TypeScript · Vite · Express · Groq Llama 3.3 70B · Web Speech API · github.com/SaudSatopay/InterviewPro_AI

- Full-stack platform that ingests a job description + resume and generates **role-tailored interview questions** answered by voice (Web Speech API) or code.
- Real-time scoring via **Groq/Llama 3.3 70B** with personalised week-by-week study roadmaps and session playback.

Ride-A-Go — Group Motorcycle Riding App

Mar 2026

Flutter · Riverpod · Firebase · Google Maps · OpenWeatherMap · github.com/SaudSatopay/ride-a-go

- Mobile app for Indian biker groups: live group tracking, turn-by-turn nav, ride replay (1×–10× speed), in-ride chat, 8-badge gamification.
- **Safety stack**: one-tap SOS with auto-SMS, accelerometer-based crash detection, bike-tilt fall detection, fatigue alerts, fuel-range estimation across 100+ bike models.
- **Bilingual voice commands** (English + Hindi: "madad", "bachao", "report police"), crowdsourced hazard markers, pothole-aware OSRM routing.

NS BAKES — Premium Home Bakery Website

May 2026

Next.js 14 (App Router) · TypeScript · Tailwind CSS · Framer Motion · Lenis · next-themes · github.com/SaudSatopay/NS-BAKES · nsbakes.vercel.app

- Highly interactive, fully responsive Next.js marketing site — cinematic hero (animated word-by-word headline, parallax desserts), Framer Motion scroll-reveals, magnetic buttons, and Lenis-powered smooth scrolling with light/dark themes.
- **Cart-to-WhatsApp checkout**: a cart drawer composes a pre-filled WhatsApp order from selected menu items — a complete ordering flow with zero backend.
- Production-grade SEO and accessibility — JSON-LD *Bakery* schema, dynamic Open Graph image, sitemap/robots/manifest, and *prefers-reduced-motion* + a keyboard-accessible gallery lightbox.

EDUCATION

B.Tech, Computer Engineering

NHITM College of Engineering

2023 – 2027

HSC (Higher Secondary)

Matoshree Prabodhini Junior College

2021 – 2023

CERTIFICATIONS & TRAINING

- Machine Learning with Python — Simplilearn / Skillup (2025)
- Gemini for Google Workspace — Google Cloud (2025)
- Blockchain Developer Training — Simplilearn (2024)
- React & Modern JavaScript Certification
- API Integration & REST Architecture Workshop
- Web Performance & Optimization Seminar
- Responsive Web Design Masterclass
- Version Control with Git & GitHub Training
- Problem Solving with Data Structures Program
- Cybersecurity Awareness Certified