

GAURAV SINGH

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EDUCATION

International Institute of Information Technology, Naya Raipur
B.Tech in Computer Science and Engineering

Naya Raipur, India
Aug 2024 – May 2028

EXPERIENCE

Research Intern

Jun 2025 – Present

Université Polytechnique Hauts-de-France (LAMIH CNRS) — Prof. Alaa Daoud

Remote

- Built an XGBoost hurdle model (**binary:logistic** classifier × **reg:tweedie** regressor, 500 trees each, 50 features) to nowcast EV charging load across Île-de-France, beating a persistence baseline by ~35–40% on MAE.
- Shipped a live FastAPI + MapLibre simulation on a real IGN basemap with OpenStreetMap-based street routing (~10ms/route via a cached junction graph), backed by a parity test asserting streamed features match the offline pipeline to 1e-9 across 38 features.

Software Engineer Intern

Jan 2026 – Apr 2026

AFTR Labs

Remote — App Store | Play Store

- Designed and integrated a RESTful API layer of 60+ endpoints spanning auth, AI-assessment workflows, computer-vision jobs, media upload, and admin analytics for BharatCare, a health-assistant app live on the App Store and Play Store.
- Built the backend workflows powering symptom-assessment and report-explainer features, connecting user input to ML-generated insights across 14 production feature modules.
- Shipped multilingual support for 3 languages, secure session refresh, and cached feature flags; added automated test coverage across 10 test files to cut manual QA overhead.
- Managed the Android (APK/AAB) and iOS build configuration and release pipeline for both platforms.

PROJECTS

Phodex | *FastAPI, PostgreSQL, Redis, SQLAlchemy, Flutter, Firebase Cloud Messaging*

Live | GitHub

- Built a remote-development platform that lets a developer dispatch coding tasks from their phone to a pluggable AI worker (Claude Code / OpenAI Codex), gated by an approval workflow before any commit reaches the repo.
- Architected a FastAPI + PostgreSQL backend of 34 REST endpoints across 11 API modules, 16 service-layer modules, and 14 SQLAlchemy models, covered by 15 test files; added real-time task streaming over Server-Sent Events and Prometheus/Grafana/Jaeger monitoring.

CodeCall | *JavaScript, npm, Claude Code / Codex plugin architecture*

Live | GitHub

- Built an agent-skill npm package that generates concept-focused quiz questions from AI-generated code to reinforce understanding, installable directly inside Claude Code and Codex; 1,147 users.

writeupsc | *RAG pipeline, FastAPI, PostgreSQL, Vision-model OCR*

Live

- Designed a retrieval-augmented evaluation pipeline — OpenAI **text-embedding-3-small** embeddings, vectorized cosine-similarity search, top-20 candidate retrieval reranked to a top-5 evidence bundle — to ground every evaluation in a corpus of 4,552 real topper answers instead of generic AI rewrites.
- Used a vision model to extract question, structure, and content length directly from photographed handwritten answer sheets.

TECHNICAL SKILLS

AI/ML: XGBoost, Gradient-Boosted Trees, Tweedie Regression, Time-Series Nowcasting, Feature Engineering, Gemini API
Backend & Infra: FastAPI, Node.js, Express.js, REST APIs, PostgreSQL, MySQL, Redis, SQLAlchemy, Firebase (Auth, Firestore, Realtime DB), Prometheus, Grafana, Jaeger
Languages: Python, JavaScript, TypeScript, Dart, C/C++, SQL, HTML/CSS
Tools: Git, Google Cloud Platform, Android Studio, VS Code

ACHIEVEMENTS

Hackathons: **1st Prize**, E-Summit 2026 (IIIT Naya Raipur) — CSC AI Copilot, an OCR/Gemini-based validator for govt. service applications

Academic: AIR 11,485 (99.26 percentile) JEE Main and AIR 11,908 JEE Advanced, among 1.4M+ candidates