

ADITYA GAIKWAD

Nagpur, Maharashtra

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Summary

Final-year **Computer Science** student with proven experience building and shipping **production-grade applications** end-to-end, from **UI design** to **REST API development**, **database modeling**, and **cloud deployment**. Proficient in **TypeScript**, **JavaScript**, **React**, **Next.js**, **Node.js**, and **Flask**, with strong fundamentals in **application architecture**, **third-party API integration**, and **secure authentication flows**. Comfortable across the full application lifecycle including **feature development**, **testing**, **debugging**, and **deployment**.

Education

Shri Ramdeobaba College of Engineering and Management, Nagpur 2023 – 2026
B.Tech in Computer Science And Engineering | **CGPA: 8.11 / 10**

Government Polytechnic, Nagpur 2020 – 2023
Diploma in Computer Science | **93%**

Work Experience

Research & Development Intern, RCOEM Nagpur (6 Weeks) May 2025 – Jun 2025

- Collaborated with **Western Coalfields Limited (WCL)** on a data-intensive project; designed **data flow diagrams**, wrote **technical documentation**, and produced a structured **test plan** covering unit, integration, and regression scenarios.
- Built **end-to-end data pipelines** for preprocessing hyperspectral datasets; trained and validated models on an **NVIDIA DGX Station**, achieving **96%+ regression accuracy** on Moisture, Ash, and GCV quality parameters.

Projects

Atelier: Agentic Video Editor | *Next.js, TypeScript, FastAPI, Python, FFmpeg, Docker* [Live Demo](#) | [Code](#) 2026

- Built and deployed a **full-stack web video editor** (Next.js + FastAPI) driven by an **LLM agent**: natural-language commands are translated via **function calling** (Gemini/Claude APIs) into **10 schema-validated editing operations** with error-feedback self-correction and all-or-nothing timeline persistence.
- Engineered a **server-side FFmpeg rendering pipeline** (trim, speed, volume, text overlays, multi-clip concat) with an **async job queue**, real-time progress tracking, and crash recovery; verified by **53 automated tests** (pytest + vitest) including real-render assertions.
- Shipped with **Docker Compose** and **GitHub Actions CI**; **split cloud deployment** (Vercel frontend proxying to a Render Docker API); authored architecture docs, a decision log, and **18 documented failure modes** with fixes (subprocess pipe deadlocks, FFmpeg filter-graph quoting, codec version quirks).

Nexus: AI Agent Command Center | *Next.js, TypeScript, Node.js, Auth0, REST APIs* [Live Demo](#) 2026

- Built and deployed a **production-grade full-stack application** (Next.js + TypeScript) integrating **4 third-party REST APIs** (Gmail, GitHub, Slack, Discord) via **Auth0 Token Vault** for secure, zero-exposure credential management.
- Designed a **centralized backend risk engine** classifying **12 API operations across 4 services** into risk tiers; medium-risk write actions trigger **step-up authentication** before execution, demonstrating secure application design.
- Implemented **real-time audit logging** with **persistent JSON-based storage** and crash recovery; applied structured error handling and defensive coding patterns across all API flows.

Image-Based Forest Analysis & Optimal Path Computation | *Python, OpenCV, ML* [Link](#) Aug 2025 – Dec 2025

- Accepted at IEEE International Conference**; engineered an end-to-end **ML data pipeline** covering annotation, augmentation, and preprocessing; trained and benchmarked a **YOLOv8** model with balanced precision-recall metrics.
- Authored **architecture documentation**, preprocessing pipeline specs, and a structured **test plan**; delivered stakeholder-ready progress reports at each milestone.

Technical Skills

- Languages:** JavaScript (ES6+), TypeScript, Python, C++, SQL, HTML/CSS
- Application Development:** React.js, Next.js, Node.js, Flask, Django, REST API Design & Integration, Auth0, OAuth 2.0, Tailwind CSS
- Databases & Storage:** MySQL, PostgreSQL, MongoDB, Firebase, SQLAlchemy ORM
- Testing & Quality:** Functional Testing, Integration Testing, Regression Testing, Test Case Design, Defect Tracking
- DevOps & Tooling:** Git, GitHub, Docker, Vercel, VS Code, GitHub Copilot
- AI/ML (Supporting):** TensorFlow, PyTorch, OpenCV, YOLOv8, LangChain, OpenAI API, Hugging Face