

Vatsal Gupta

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SUMMARY

Applied AI/ML and backend engineer in training (B.Tech CSE), with strengths in scalable systems, reproducible machine learning research, and robust cloud integration. Experienced in competitive data science (Kaggle), LLM-driven RAG deployments, Spring Boot fintech backend, and open-source collaboration. Recognized for attention to detail, model evaluation skills, and impactful team contributions on high-visibility technical projects.

TECHNICAL SKILLS

Programming: Python, Java, C/C++, SQL

Backend: Spring Boot, REST APIs, Batch Processing, Data Engineering, Secure Integration

AI/ML: Retrieval-Augmented Generation, LLMs (LLaMA, Generative AI), NLP, Vision (OpenCV), Model Evaluation

Tools: LangChain, FAISS, llama.cpp, OpenCV, FastAPI, Streamlit, pdfplumber, Whisper, Weights & Biases, Git/GitHub

Database: PostgreSQL, Query Optimization

Cloud: Oracle Cloud Infrastructure, Google Cloud Skills Boost, hands-on deployment

EXPERIENCE

uTest

Remote | Nov 2025 – Present

Freelance Software Tester

- Provided QA for web, mobile, and desktop platforms; identified critical usability and functional issues in client projects.
- Authored precise bug reports, using industry tools to improve workflows and reduce time to resolution.
- Collaborated in global distributed teams, continuously adapting to new testing methodologies and platforms.
- Used exploratory and manual testing to uncover unique edge cases and enhance product reliability.

Kaggle

Remote | Oct 2025 – Present

Competition Contributor

- Tackled real-world ML challenges with advanced feature engineering, thorough EDA, and leaderboard optimization strategies.
- Built, tuned, and validated multiple ensemble models; documented best practices and reproducibility for the community.
- Leveraged leaderboard feedback for iterative improvements and technical blog posts.

Outlier

Remote | Feb 2024 – Present

Freelance AI Contributor

- Annotated NLP and CV datasets; improved prompt engineering and annotation QA using proprietary tools.
- Delivered high-quality data for large-scale machine learning model training targeting generative and vision AI.

Pay10 India

India | May 2025 – Jul 2025

Java Payment Gateway Intern

- Developed scalable Spring Boot batch systems for automated large dataset ingestion, directly impacting transaction reliability.
- Engineered REST API endpoints enabling dynamic data uploads and real-time reporting for financial analytics.
- Participated in code reviews, technical documentation, and troubleshooting with the core engineering team.

Internship Trainee

- Led awareness and education campaigns in underprivileged areas; produced detailed outreach documentation and analytics.
- Generated and analyzed impact reports for donor relationships and program transparency.

SELECTED PROJECTS**Offline RAG: Smart Document QA (LLaMA + FAISS)** Jul 2025 – Present

- Document question-answering system using local LLaMA 3.2 and FAISS; integrated semantic retrieval, custom embeddings, and quantitative evaluation (Python, LangChain).
- Used GGUF models and BGE/E5 sentence encoders for fast, privacy-first inference deployments.

Deep Learning Optimizer Benchmarking Framework Jul – Aug 2025

- Benchmarked multiple optimizers (SGD, Adam, RMSProp) on CIFAR-10/100 and ResNet/MobileNetV2 architectures.
- Automated logging, resource profiling, and reproducibility with Weights & Biases and LaTeX-based report templates.

Intrusion Detection System (UNSW-NB15) Aug 2025

- Developed RandomForest-based IDS with hyperparameter tuning; employed LIME for explainability and visual evaluation.
- Output precision, recall, F1, and confusion matrix for reproducible research.

Harry Potter Invisibility Cloak (CV Demo) Aug 2025

- Created real-time OpenCV-based color segmentation and background replacement application with optimized HSV masks.

PATENT**AI-Enabled Skin Disease Diagnosis Robot**

Registered Design #454778-001, Issued Jul 18, 2025 (India, Class 24-01). Innovative robotics and ML skin analysis for diagnostic support.

EDUCATION**Amity University, Noida** Sep 2022 – Oct 2026

B.Tech, Computer Science and Engineering | CGPA: **8.66**

- Relevant coursework: Machine Learning, Data Science, Cloud Computing, Software Design, Algorithm Engineering.

CERTIFICATIONS & COURSES

- Oracle AI Vector Search Certified Professional (Oct 2025–27)
- OCI Data Science, Generative AI, AI Foundations Associate (Oct 2025–27)
- Columbia+ Machine Learning I (Sep 2025)
- NVIDIA Deep Learning, Google GenAI Jams, Simplilearn PostgreSQL (2025)
- NPTEL Python/Data Science (2024)
- Kaggle Community Competitor; IBM AI Agents; Nestlé Resilience (2025)

LEADERSHIP, VOLUNTEERING & ACHIEVEMENTS

- Hacktoberfest 2025: Contributed to AI, algorithms, accessibility and documentation through open-source teamwork.
- Tree-Nation: Planted tree for code-based sustainability in Hacktoberfest collaboration.
- Hospitality Volunteer (Confluence 2025): Supported logistics and coordination for delegates from 20+ countries.
- Prashraya Welfare: Led educational outreach and generated actionable campaign reports.
- HaBuild Yoga Camp: Participated in world-record online wellness event (7.52 lakh participants).