

# Ekaansh Sawaria

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## Education

Manipal University Jaipur

B.Tech in Computer Science - GPA: 8.44/10

August 2023 – Present

## Projects

### Arogaya AI (HackerzStreet - Finalist)

[demo](#) — [github](#)

Built an open-source multilingual RAG system for healthcare and insurance, enabling real-time, privacy-focused voice/text interaction in 4 Indian languages and optimizing retrieval to cut response latency by 30 percent.

- Engineered FastAPI backend integrated with FastText embeddings, Deep Translate, and LLaMA 3 via Ollama.
- Processed **5,000+ pages** to generate embeddings, achieving **93% retrieval accuracy** across domains.
- Optimized deployment pipelines for cloud-agnostic accessibility in underserved healthcare communities.
- Implemented real-time voice/text query handling, achieving an average latency of **12s**.
- Tech Stack: Python 3.13, FastAPI, React, FastText, Deep Translate, Ollama (LLaMA 3).

### VisionSat

[deployed](#) — [github](#)

Developed a satellite image classification system with EuroSAT Sentinel-2, applying deep learning and explainable AI to analyze land-use patterns, improve interpretability, and reduce manual labeling efforts.

- Trained CNN and ResNet on **50K+ images** for terrain classification, achieving **97.2% accuracy**.
- Applied Grad-CAM to generate heatmaps, improving explainability for end-users and stakeholders.
- Deployed backend on Hugging Face Spaces and frontend on Vercel, supporting **100+ concurrent users**.
- Implemented Docker containerization, enabling reproducible deployment and scalability.
- Reduced training time by **20%** through optimized data pipelines and augmentation strategies.

### SustainBridge – (Sparkathon 2025)

[demo](#) — [github](#)

Developed an AI-powered platform to forecast demand, optimize inventory, and recommend redistribution strategies for sustainable supply chains. Improved efficiency and reduced waste across distribution centers by **25%**.

- Fine-tuned a Random Forest model with **95.6% accuracy** and **0.92 F1-score** using **5-fold cross-validation**.
- Automated redistribution, cutting excess stock by **30%** and boosting order fulfillment by **15%**.
- Optimized data pipelines with Pandas and NumPy, improving runtime efficiency by **40%**.
- Built responsive admin dashboard for **500+ Walmart stores**; integrated CSV visualizations, filters, modals, and interactive UI, cutting lookup time by **40%**.

## Skills

**Languages:** Python, C, Java, SQL, TypeScript

**Technologies:** Machine Learning, Deep Learning (CNN, ResNet, RNN, LSTM), GNN, RAG, Grad-CAM, recommendation systems, model evaluation

**Libraries & Tools:** scikit-learn, PyTorch, TensorFlow, PyTorch Geometric, FastAPI, Flask, Streamlit, Pandas, NumPy, FastText, Deep Translate, Ollama, NetworkX, Folium, Tableau

## Certificates

- Neural Networks and Deep Learning** — DeepLearning.AI (Coursera)
- Hyperparameter Tuning, Regularization and Optimization** — DeepLearning.AI (Coursera)
- Convolutional Neural Networks** — DeepLearning.AI (Coursera)
- Deep Learning Badge** — DeepLearning.AI (Coursera)