

ARKAPRABHA BANERJEE

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Profile Summary:

Computer Science student specializing in AI/ML Engineering with 10+ hands-on projects in deep learning and computer vision. Built end-to-end ML systems using PyTorch and TensorFlow, showcasing 2 flagship projects including KRishak and RAG-powered chatbots. Experienced in full-stack development with Django/FastAPI for scalable AI applications.

Education :

HERITAGE INSTITUTE OF TECHNOLOGY CSE (DATA SCIENCE) CGPA : 8.576(2022-26)

D.A.V PUBLIC SCHOOL RNP 10TH : 88.8% (2020) 12TH : 90.6% (2022)

Projects :

RAG-Powered Multi-Agent Q&A Assistant :

1. Built multi-agent system combining RAG and FAISS for efficient query routing, document retrieval, and response generation using Groq API and Llama 3 models.
2. Created Streamlit web interface for seamless user interaction, reducing response time by 30%
3. Implemented LangChain document loaders and E5 embeddings for efficient document processing and semantic search.

Krishak :

1. Developed production-grade Agricultural AI system using FastAPI, RAG, and Twilio with dual LLM integration (Google Gemini Pro, Groq Qwen)
 2. Engineered RAG pipeline with Qdrant vector database and Sentence Transformers, achieving 85%+ recommendation accuracy .
 3. Reduced farmer decision-making time by 70% through efficient AI-driven recommendation engine
 4. Built cost-effective SMS gateway with Twilio webhook integration for keypad phones, reducing communication costs by 80% via optimized coded input format with 3-second response time
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Achievements:

Status Code 2 Hackathon - Winner

Created SMS-based agricultural AI platform serving farmers with basic phones, integrating satellite climate data and carbon credit marketplace for enhanced farmer income and environmental impact

Experiences :

1. **Data Science Intern at Tata Consultancy Services (TCS)(Presently working)**
Gained hands on experience in data analytics, machine learning workflows, and enterprise-level data processing systems.
 2. **DSA Mentor at Noobuild Community** (Sept 2024 - June 2025)
Guided aspiring developers through Data Structures and Algorithms concepts, providing personalized learning support over 10-month commitment.
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Technical Skills:

- Programming: Python, C++ , C , JAVA , R
 - ML/AI Frameworks: TensorFlow, PyTorch, Scikit-learn
 - Cloud & Databases: MongoDB , Qdrant, PostgreSQL
 - Web Development: FastAPI, Django, Streamlit , Flask
 - Tools: LangChain , Vector DBs , Haystack , Botpress etc.
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