Akash Debnath

+91-78726-00387 | debnath2004akash@gmail.com | linkedin.com/in/akash-debnath
Kolkata, West Bengal, India

Education

Heritage Institute of Technology — Kolkata, India
Bachelor of Technology in Computer Science (Data Science), CGPA: 9.37/10.0 — *Sept. 2023 – July 2027*

Habra High School (H.S.) — West Bengal, India
Higher Secondary (Class 12), Percentage: 90.2% — *2022*

Habra High School (H.S.) — West Bengal, India
Secondary (Class 10), Percentage: 94.84% — *2020*

Technical Skills

Languages: Python, C, C++
Machine Learning & AI: TensorFlow, PyTorch, Scikit-learn, Natural Language Processing (NLP), Deep Learning
Generative AI: LangChain, HuggingFace Transformers, Large Language Models (LLMs), Prompt Engineering
Databases: Oracle DBMS, MongoDB
Tools & Technologies: Git, Jupyter, Google Colab
Data Science: Pandas, NumPy, Matplotlib, Seaborn, Data Analysis, Statistical Modeling

Experience

AI Intern — June 2025 – July 2025
AI Wallah — *Remote*

- Engineered and deployed a production-grade Generative AI Chatbot with PDF summarization capabilities, leveraging advanced NLP techniques and LLMs to extract and synthesize insights from unstructured documents with 90%+ accuracy
- Architected an interactive AI-powered Weather Application with conversational interface, integrating real-time APIs and implementing natural language query processing to deliver seamless user experiences
- Optimized LLM prompt engineering strategies and implemented RAG (Retrieval-Augmented Generation) architecture to enhance response accuracy and reduce hallucinations by 40%
- Collaborated with cross-functional teams to design scalable backend systems using Python, FastAPI, and cloud deployment strategies for AI-powered applications

Projects

RAG-Based Medical Chatbot — Python, LangChain, HuggingFace, Pinecone
Personal Project

- Developed an intelligent medical consultation chatbot using Retrieval-Augmented Generation (RAG) architecture, processing 10,000+ medical documents to provide accurate health information and preliminary diagnosis suggestions
- Implemented vector embeddings and semantic search with 92% accuracy, reducing response latency to under 2 seconds while maintaining HIPAA-compliant data handling practices

YouTube RAG Chatbot — Python, LangChain, YouTube API, ChromaDB
Personal Project

- Built an AI-powered chatbot that extracts transcripts from YouTube videos and enables conversational Q&A using RAG pipeline, processing 100+ videos with 85% query relevance score
- Engineered automatic transcript chunking and indexing system with temporal awareness for precise video segment retrieval

Retinal Disease Detection System — Python, TensorFlow, CNNs, OpenCV
Academic Project

- Designed and trained deep convolutional neural network achieving 94% accuracy in detecting diabetic retinopathy and other retinal diseases from fundus images across 5 disease categories
- Implemented data augmentation and transfer learning techniques using ResNet50 architecture, reducing training time by 40% while improving model generalization

Certifications

Complete Generative AI Course with LangChain and HuggingFace

Deep Learning Specialization (Udemy)

Backend Development with Node.js

Achievements & Leadership

Published research paper "An Offline-Ready Disaster Relief System Using Hybrid Path Planning, Secure Logistics, and LoRa Communication" at ICCTE 2025, North Bengal University

Qualified Visteon Scholar Examination 2025