

Malothu Akash

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SUMMARY

AI Engineer and Graduated from Electronics and Electrical Engineering (IIT Guwahati) specializing in **Generative AI, LLM applications, and RAG systems**. Built and deployed **multi-agent AI systems, RAG pipelines, and deep learning models** using **Docker, and CI/CD** on **Vercel/AWS**, with measurable accuracy, latency, and reliability gains.

EDUCATION

Indian Institute of Technology, Guwahati

Bachelor of Technology - Electronics and Electrical Engineering

Guwahati, India

Aug 2022 – May 2026

PROJECTS

AI Job Agent (Demo)

May 2026 – July 2026

- * Designed and built a **production-ready multi-agent AI Job Agent** using **Python, LangGraph, LangChain, and LLMs** to automate job discovery, resume matching, and personalized application workflows.
- * Built a full-stack app with a **React/TypeScript frontend and FastAPI (Python) REST backend**, integrating **JWT** authentication with email-OTP verification and **PostgreSQL persistence via SQLAlchemy**.
- * Built a **RAG pipeline over vector databases** to retrieve relevant job postings and generate context-aware recommendations, significantly reducing hallucinations.
- * Engineered **stateful multi-agent orchestration** with LangGraph, enabling autonomous reasoning, tool routing, and multi-step decision-making.
- * Containerized with **Docker** and cloud deployment on **vercel for frontend and Render for Backend** infrastructure for secure, scalable hosting.
- * Automated testing and deployment via **CI/CD (GitHub Actions)**; integrated **REST APIs** and LLM providers with retry logic and error handling for production reliability.

Enterprise AI Chatbot (Demo)

Jan 2026 – May 2026

- * Built an **enterprise-grade conversational AI assistant** using **LLMs, LangChain, and LangGraph**, with **RAG** powering domain-specific Q&A with **92% response accuracy**.
- * Developed a **multi-format document ingestion pipeline** (PDF, DOCX, TXT) with intelligent chunking and semantic embeddings.
- * Implemented **ChromaDB / FAISS vector search** for sub-second semantic retrieval, applying advanced **prompt engineering** to reduce hallucinations.
- * Containerized with **Docker** and cloud deployed on **AWS**; automated releases via **CI/CD (GitHub Actions)**.
- * Exposed functionality through **REST APIs (FastAPI)** with secure authentication for external integrations.

EXPERIENCE

Generative AI Research

May 2025 – Jul 2025

Under Prof. Anirban Das Gupta, IIT Guwahati

(Certificate)

- * Architected and trained **GAN-based deep learning models (Pix2Pix, CycleGAN)** for real-time image dehazing of foggy road scenes, targeting autonomous-driving perception use cases.
- * Trained on **6,000+ paired and unpaired images**, boosting image clarity by **32% (PSNR)** and **28% (SSIM)** over baseline models.
- * Built and optimized **GPU-accelerated training pipelines** in **TensorFlow** with custom loss functions on **Google Colab**, cutting experimentation turnaround time.
- * Benchmarked model performance and visual fidelity through rigorous quantitative and qualitative evaluation, ensuring deployment readiness.
- * Authored full technical documentation of the workflow and codebase, enabling reproducibility for future research.

Data Science

May 2025 – Jun 2025

Zidio Development Company

(Certificate)

- * Designed and shipped a **Speech Emotion Recognition (SER) system** in **PyTorch**, trained on **5,500 audio samples** from the **CREMA-D** dataset.
- * Engineered **40-dimensional MFCC feature extraction** pipelines using **Librosa** and trained hybrid **CNN + LSTM** architectures to classify emotional states.
- * Achieved **82.4% accuracy** and **0.80 F1-score** across multiple emotion classes (anger, happiness, and others).
- * Delivered a fully automated **end-to-end ML pipeline** covering preprocessing, feature extraction, training, and evaluation.

TECHNICAL SKILLS

Programming: Python, SQL

AI & Machine Learning: Machine Learning, Deep Learning, NLP, Computer Vision, TensorFlow, PyTorch, Scikit-learn, CNN, LSTM, GANs (Pix2Pix, CycleGAN)

Generative AI & LLMs: LangChain, LangGraph, RAG, LLMs, Prompt Engineering, AI Agents, Vector Databases, FAISS, ChromaDB, Google Gemini API, Groq LLMs, HuggingFace

Cloud: AWS, Azure

DevOps & Deployment: Docker, Vercel/Render, Git, GitHub, GitHub Actions (CI/CD), FastAPI, Streamlit

Databases: PostgreSQL, MySQL, MongoDB, VectorDB