MD. Akash Miah

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Professional Summary

AI Engineer with hands-on experience in Large Language Models, RAG systems, predictive modelling, Agent Building and building end-to-end AI solutions. Skilled in developing knowledge bases, optimizing ML/LLM performance, collaborating with analysts and domain experts, and deploying production-grade AI workflows using best software engineering practices. Passionate about AI applications in finance, automation, and analytics.

Skills

LLMs & NLP: Transformer Models, Fine-tuning, Prompt Engineering, LangChain, RAG Pipelines
ML & Predictive Modelling: Scikit-learn, Credit/Predictive Modeling, Model Evaluation, Feature Engineering
RAG & Agent Building: Vector Databases (FAISS, Pinecone, Chroma), Document Indexing, Semantic Search, LangChain, LangGraph N8n, Agentic RAG
MLOps & Engineering: Docker, Version Control, API Development, CI/CD, Model Optimization
Frameworks & Tools: PyTorch, TensorFlow, Pandas, NumPy, OpenCV, SQL, Seaborn
GenAI Ecosystem: OpenAI, Google AI Studio, Hugging Face, Ollama, Gemini/GROQ/OPENAI API

Experience

Junior AI Developer **2025 – Present**
Betopia Group, Dhaka

- Designed and deployed scalable **RAG pipelines** integrating LLMs with enterprise datasets, enabling knowledge retrieval and automated business insight generation.
- Fine-tuned transformer-based models and optimized LLM inference, improving accuracy and reducing latency in production systems.
- Built domain-specific **knowledge bases** and vector search systems for internal business automation tools.
- Containerized ML and LLM services using Docker, improving reliability and reducing environment inconsistencies across teams.
- Collaborated with analysts and software teams to translate analytical requirements into AI-driven solutions.
- Applied software engineering good practices including version control, modular code structure, documentation, and testing.

Education

B.Sc. in Computer Science and Engineering **2025**
North South University, Dhaka

Professional Courses

Short Course on Data Science Feb 2024
Prof. Jennifer Widom, Stanford University (NSU Campus)

Selected Projects

Autonomous Chemical Spraying Robot YOLOv8, IoT

AI-Based Grocery Checkout System Python, OpenCV, YOLOv8

- Developed an automated computer vision checkout system with a high validation accuracy of **0.995 mAP@50**.
- Optimized inference time to **696 ms/frame**, making the system viable for real-time commercial deployment.
- Designed system logic to simulate barcode scanning behavior for seamless integration with Point-of-Sale (POS) systems.

Autonomous Chemical Spraying Robot YOLOv8, NodeMCU

- Engineered the full perception-action pipeline by deploying a **YOLOv8** model on an Edge device (NodeMCU) for real-time weed/crop identification.
- Demonstrated end-to-end integration of the ML model with actuators for automated and precision chemical spraying.

RAGbot - Knowledge Assistant LangChain, FAISS, Gemini

- Built an LLM-powered assistant (using the Gemini API) combining document embeddings and semantic search via **FAISS**.
- Developed a GUI for the system, making it a ready-to-use knowledge-intensive application for business support.

Social Media Post Maker Whisper, Gemini API

- Automated a multimodal pipeline: video/audio transcription (Whisper) $\rightarrow$ summarization $\rightarrow$ publish-ready posts (Gemini API).
- Showcased practical application of state-of-the-art NLP and multimodal AI for content generation.

Interests

LLMs, RAG Systems, Predictive Analytics, Applied Machine Learning, Financial AI, Robotics, Edge AI, AI In Agriculture