MD. AKASH MIAH

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Professional Summary

AI/ML Engineer with hands-on experience in machine learning model development, deployment, and optimization. Proven ability to build end-to-end AI solutions using Python, PyTorch, and TensorFlow. Strong foundation in data preprocessing, model training, and translating business requirements into production-ready systems.

Technical Skills

Programming & ML: Python, Machine Learning, Deep Learning, Model Training & Evaluation, Optimization
Frameworks: PyTorch, TensorFlow, Scikit-learn, Pandas, NumPy, OpenCV
AI Techniques: Computer Vision, NLP, Transformers, Fine-tuning
Data Science: EDA, Statistical Analysis, Regression, Model Validation
Tools: Docker, Git, SQL, Google Colab, Python socket programming, Fast API
LLMs & GenAI: LangChain, RAG, FAISS, Pinecone, Chroma, OpenAI/Gemini/GROQ APIs

Professional Experience

Junior AI Engineer   Jul 2025 – Present
Join Venture AI   *Dhaka, Bangladesh*

- Developed and deployed **multiple AI/ML models** into production, supporting real-world business workflows
- Designed **end-to-end ML pipelines** including data preprocessing, training, evaluation, and inference
- Fine-tuned transformer-based models, improving task-specific performance by **15–25%**
- Reduced inference latency through model optimization and efficient preprocessing techniques
- Containerized ML services using Docker, enabling **consistent deployment across environments**
- Collaborated with product and engineering teams to convert requirements into deployable AI solutions

Education

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

Professional Development: Short Course on Data Science — Prof. Jennifer Widom, Stanford University (Feb 2024)

Key Projects

AI-Based Grocery Checkout System   Python, OpenCV, YOLO, RT-DETR

- Built an AI-powered checkout system that detects and classifies **10 grocery product classes** from a single image
- Trained YOLOv8 on a custom dataset, achieving **0.995 mAP@50** on the validation set
- Optimized inference pipeline to **696 ms/frame**, enabling near real-time performance
- Designed the system to simulate barcode scanning by mapping detections to **GTIN-based product IDs**
- Engineered the solution for seamless **POS software integration**

Autonomous Chemical Spraying Robot   YOLOv8, IoT, Edge AI

- Developed an autonomous agricultural robot combining **computer vision, IoT, and robotics**
- Deployed YOLOv8 on edge hardware for real-time crop and weed classification
- Integrated perception outputs with robotic actuation to enable **targeted chemical spraying**
- Improved spraying efficiency by minimizing unnecessary chemical usage

RAGbot — AI Knowledge Assistant   LangChain, FAISS, Gemini API

- Implemented a **Retrieval-Augmented Generation (RAG)** pipeline for document-based question answering
- Used FAISS for semantic search over embedded knowledge bases
- Integrated Gemini API to generate accurate, context-aware responses
- Built a desktop GUI to support **enterprise knowledge retrieval and internal documentation search**