Abdullah Al Muhit

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LinkedIn | GitHub | Portfolio Website

Objective

Backend Software Engineer with experience building production AI systems and scalable APIs. Skilled in Python, FastAPI, Django, and PostgreSQL, with hands-on experience shipping ML-backed features and data pipelines. Seeking to contribute to AI agent infrastructure and enterprise automation platforms.

Technical Skills

Backend/APIs: FastAPI, Django REST Framework, Flask, PostgreSQL, Supabase, SQLite, REST APIs, Microservices, JWT Auth, Alembic, Celery, Redis
Programming: Python (Pandas, NumPy, Scikit-learn, TensorFlow, PyTorch), Java, JavaScript, HTML/CSS, SQL
Machine Learning: Supervised/Unsupervised Learning, Feature Engineering, Model Evaluation, Ensemble Methods, Computer Vision, Fine-tuning, PyTorch, TensorFlow
NLP/LLMs: Text preprocessing, Embeddings, Transformers, Prompt Engineering, LLM-based analysis, Explainability
Cloud/DevOps: Docker, Docker Compose, AWS (EC2, S3), Git, Linux, CI/CD basics, Vercel
Data: ETL Pipelines, Data Modeling, Database Design, Query Optimization, Data Visualization

Education

Virginia Tech — Arlington, VA
Master of Engineering in Computer Science — *Expected May 2026*
- GPA: 3.61/4.0
- Relevant Coursework: Machine Learning, Deep Learning, NLP, Cloud Computing, Software Engineering

BRAC University — Dhaka, Bangladesh
Bachelor of Science in Computer Science and Engineering — *2018 – 2023*
- GPA: 3.18/4.0

Experience

AI/ML Engineer Intern — Sep 2023 – Oct 2023
Inflexion Point Technologies — *Dhaka, Bangladesh*
- Built production ML pipeline using Python and Scikit-learn to optimize ad targeting system, improving precision by 15% and recall by 12% across 50K+ daily ad impressions
- Developed automated preprocessing pipeline reducing model training time by 20% through parallel processing, feature caching, and batch optimization
- Integrated ML model predictions into production dashboard via Flask REST API, enabling real-time ad targeting for marketing team
- Collaborated with backend engineers to deploy models to staging/production environments, implementing error handling, logging, and performance monitoring

Projects

MedGemma Clinical Suite – Production Medical AI Platform | *FastAPI, Supabase, TensorFlow, PostgreSQL, JWT* 2026
- Architected and deployed full-stack medical application with FastAPI backend handling patient management, vital signs tracking, clinical documentation, and AI-powered medical imaging analysis
- Integrated fine-tuned MedGemma 1.5 computer vision model for real-time diagnostic imaging analysis with 87% accuracy on validation dataset of 5K+ medical images
- Built RESTful API with 15+ endpoints supporting CRUD operations, file uploads, and AI inference, with JWT authentication and role-based access control
- Designed Supabase/PostgreSQL database schema with 8 normalized tables handling patient records, consultations, imaging data, and audit logs
- Implemented cloud storage integration for DICOM medical images with secure access patterns, metadata indexing, and automated backup strategies

Intelligent Log Analyzer & Incident Assistant | *FastAPI, PostgreSQL, Docker, Alembic, LLM APIs, Redis* 2026
- Architected production-grade backend system for AI-powered log analysis which can handle 10K+ log entries/day with FastAPI REST API (12 endpoints) and PostgreSQL database

- Built real-time log ingestion pipeline parsing heterogeneous formats (JSON, syslog, custom) with 99.5% parsing accuracy and automatic schema detection
- Developed modular microservice architecture supporting ML-based anomaly detection, incident correlation, and LLM-powered root cause analysis
- Implemented database schema with 8 tables (logs, incidents, patterns, alerts) managed via Alembic migrations with full version control
- Containerized services with Docker Compose and integrated Redis caching layer reducing query latency by 60% for frequently accessed log patterns

Generator-Guided Deepfake Speech Detection | *Python, PyTorch, RawNet2, ASVspoof datasets* 2025

- Implemented RawNet2-based deepfake detection system achieving 94% accuracy on ASVspoof 2019 dataset with 100K+ audio samples and cross-dataset generalization testing
- Performed inference and error analysis across 15+ synthetic speech generators to study model robustness and cross-generator consistency
- Developed explainability pipeline using LLM-based reasoning to generate interpretable explanations for 1000+ spoof classification decisions
- Built end-to-end experimentation framework in PyTorch including data preprocessing, model evaluation, result analysis, and automated reporting

TajahatEcom – E-commerce Backend Platform | *Django REST Framework, PostgreSQL, Celery, Redis* 2023

- Engineered scalable REST API backend supporting product catalog, order processing, and inventory management for fresh produce marketplace
- Designed PostgreSQL database schema with 10 normalized tables handling products, orders, users, payments, and delivery tracking
- Implemented asynchronous task queue using Celery for order processing and email notifications, improving checkout flow efficiency by 35%
- Built admin dashboard with real-time inventory analytics and low-stock alerts using Django templating and Chart.js

Leadership & Activities

General Secretary, BRAC University Soccer Club | Captain, High School Soccer Team (2 years)
Runner-up: BRAC University Chess and Soccer Tournaments