

Farhan Abid Ahmed

f.dipto5@gmail.com | [LinkedIn](#) | [GitHub](#) | [+8801682866367](tel:+8801682866367) | [Uttara, Dhaka-1230](#)

ML Engineer and Full-Stack Developer with a track record of building production AI systems from research prototypes. Expert in federated learning, distributed architectures, and deploying privacy-preserving ML solutions across edge and cloud environments.

EDUCATION

Ahsanullah University of Science & Technology

Bachelor of Science | Computer Science & Engineering | CGPA: 3.17

07/2019 – 09/2024

WORK EXPERIENCE

AISIP Lab

Machine Learning Engineer

06/2024 – Present

- Architect **end-to-end ML pipelines** for collaborative learning systems, implementing distributed training across multiple edge devices while ensuring data privacy and system scalability.
- Lead development of **production-ready biometric authentication frameworks** using YOLOv5 and custom distributed learning algorithms, conducting comprehensive performance analysis across centralized, distributed, and cloud architectures.
- Design and implement **microservices architectures for AI model deployment**, integrating WebSocket communication for real-time authentication and optimizing latency for distributed systems.
- Engineer custom **federated learning** frameworks with and without proximal regularization for **network intrusion detection**, leveraging DNN and LSTM models on real-world datasets.
- Develop **intelligent document processing and retrieval systems using Retrieval-Augmented Generation (RAG) architectures**, implementing vector databases and semantic search for enhanced information extraction and query processing.
- Build **NLP-powered applications for text analysis and natural language understanding**, integrating large language models with custom prompt engineering and fine-tuning for domain-specific tasks.
- Implement **Model Context Protocol (MCP)** integrations for seamless AI model communication and orchestration across distributed systems and multi-modal applications.
- Optimize ML model performance through **advanced hyperparameter tuning and transfer learning techniques** for medical imaging applications, achieving improved diagnostic accuracy in brain tumor and pneumonia detection.
- Collaborate on interdisciplinary research projects spanning **IoT integration, cloud computing, and cybersecurity applications** while maintaining production-quality code standards and documentation.

DynaZen Media

Full-Stack Engineer

06/2023 – 06/2024

- Architected and developed **high-performance OTT streaming platform** using **Go microservices architecture with Redis caching, PostgreSQL, and Kafka** for real-time content delivery and user engagement.
- Built scalable backend services **handling concurrent streaming requests**, implementing distributed content management system with optimized database queries and efficient resource utilization.
- Designed responsive frontend interfaces using **React, integrated with Go REST APIs**, ensuring seamless user experience across devices for content discovery and streaming.
- Implemented **robust authentication and payment systems with secure API endpoints, user session management, and subscription-based content access controls**.
- Optimized system performance for startup scalability achieving cost-efficient infrastructure through **containerized deployments, load balancing, and automated scaling strategies**.
- Collaborated in **agile development environment** rapidly iterating through multiple technology stacks (**evaluated .NET MVC, Laravel, Spring Boot**) before converging on Go-based solution for optimal performance.

BASCAP Project

Full-Stack Engineer

10/2022 – 04/2023

- Collaborated with international research institutions (Bangladesh University of Health Science & University of Southern Denmark) for **requirements gathering and technical specification development**.
- Engineered dynamic research collaboration platform using **Core PHP with REST-style routing**, and real-time data synchronization for multi-institutional access.
- Implemented **secure database architecture with optimized MySQL queries**, ensuring data integrity and system reliability for sensitive research data handling.
- Developed **responsive web interface** facilitating seamless collaboration between international research teams with role-based access controls and **document management systems**.

TECHNICAL SKILLS

ML Engineering: PyTorch, TensorFlow, FLWR, Hugging Face, LangChain, OpenAI APIs, Gemini APIs, MLOps, Collaborative Learning, Distributed Learning.

System Design: Go, Microservices, Distributed Systems, Kafka, REST APIs, Caching, Performance Optimization.

Full-Stack Development: React, JavaScript (ES6+), Node.js, SSR, Flask, FastAPI, HTML/CSS.

Languages: Python, Go, Java, C++, JavaScript, PHP.

Databases & Caching: PostgreSQL, MySQL, Redis, MongoDB.

DevOps & Cloud: Docker, Kubernetes, CI/CD, Git, AWS/GCP.

REFERENCES

Dr. Md. Shamim Akhter

Professor & Head, Department of Computer Science & Engineering
Ahsanullah University of Science and Technology
Email: shamimakhter.cse@aust.edu

Shahriar Elahi Dhruvo

Software Engineer, ComboKid
Email: shahriardhruvo119@gmail.com
Phone: [+8801590058656](tel:+8801590058656)