Istiaque Ahmed

istiaque.inbox@gmail.com | +8801853380267 | Dhaka, Bangladesh.

EXPERIENCE

DATA SCIENTIST Join Venture AI

- Developed and deployed multiple **AI applications** end-to-end, including **NLP pipelines**, **chatbots**, **recommendation systems**, and **Voice AI** solutions.
- Built **scalable backend systems** using **FastAPI**, **MongoDB**, and **WebSockets**, enabling real-time AI agent interaction and orchestration.
- Implemented **transformer-based models** with **vector databases** for document embeddings, retrieval, and summarization.
- Integrated external APIs (**Twilio**, **Meta**, **Dropbox**, **Google Trends**) to enable data ingestion and real-world automation within AI workflows.
- Designed **reusable components and pipelines** that improved the speed and reliability of developing new AI products.

PROJECTS

AI CONSULTANT API Github

Python | FastAPI | OpenAI API | ChromaDB | REST API | Audio Retrieval

- Developed an **agentic AI system** capable of switching autonomously between consultant and resource-provider roles, enabling grounded and personalized guidance.
- Integrated **semantic audio search** via **ChromaDB** with REST endpoints for real-time audio-informed sessions, memory reset, and audio management.

COUPLE COUNSELOR BOT Github

Python | FastAPI | Gemini API | ChromaDB | WebSocket | MongoDB

- Built a **multi-agent counseling system** that communicates with partners individually while maintaining shared **vector-based contextual memory**.
- Implemented **real-time encrypted chat** with **WebSocket**, Gemini-based dialogue reasoning, and persistent session data in MongoDB.

SERVICE PROVIDER AUTOMATION PLATFORM Github

Python | FastAPI | LLM | Postgres | Full Agentic System

- Developed an **end-to-end AI-powered automation system** that handles **scheduling**, **inventory lookup**, **resource assignment**, and **customer updates** autonomously.
- Implemented **automated email notifications**, **task tracking**, and **intelligent job routing** to reduce human workload and increase operational efficiency.

RESEARCH

LIGHTWEIGHT DUAL-STREAM CNN FOR MODULATION CLASSIFICATION | Signal Processing | Deep Learning

- Developed a dual-stream CNN achieving **98% accuracy** with only **30k parameters**, proving **100–400× smaller** than SqueezeNet and EfficientNet while being similar in performance.
- Utilized CWT scalograms to classify signals under realistic impairments (AWGN, Rician fading), enabling **real-time inference** on edge devices.

EDUCATION

BRAC UNIVERSITY

Bachelor of Science in Computer Science
Graduated June 2025
Cum. GPA: 3.6 / 4.0

SKILLS

AGENTIC AI & LLMS

Frameworks: LangChain • LangGraph PydanticAI • LlamaIndex • AutoGen
Orchestration: RAG Pipelines • CoT Function Calling • ReAct Agents
Vector Stores: ChromaDB • Pinecone
APIs: OpenAI • Gemini • Anthropic

DEEP LEARNING & RESEARCH

Core: PyTorch • Transformers (HF)
Scientific: NumPy • Pandas • SciPy
Signal/Audio: Librosa • Torchaudio
Vision: OpenCV • CNN Architectures
Model Distillation • Fine-tuning

BACKEND ENGINEERING

API Design: FastAPI • Pydantic
Protocols: WebSockets • REST • AsyncIO
Databases: MongoDB • PostgreSQL
Auth: JWT • OAuth2

DEVOPS & TOOLS

Docker • Git/GitHub Actions
Linux (Bash Scripting) • RegEx
Jupyter Notebooks • VS Code

COURSEWORK

UNDERGRADUATE

Data Structures and Algorithms • Artificial Intelligence • Machine Learning • Neural Networks • Image Processing • Probability and Statistics• Linear Algebra & Calculus

REFERENCE

MD. ASHRAFUL ALAM, PHD

Associate Professor
Dept. of Computer Science and Engineering | Brac University

LINKS

Github:// **IstiaqueAhmd**
LinkedIn:// **istiaque-ahmd**