Istiaque Ahmed

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EXPERIENCE

TRAINEE DATA SCIENTIST Join Venture Ai

- Built multiple AI-powered applications from scratch, including NLP pipelines, chatbots, recommendation engines, and slide generator. Applied transformer models and vector databases (ChromaDB) for document embedding, retrieval, and summarization tasks.
- Used FastAPI, MongoDB, and WebSockets to develop real-time chat interfaces, backend services, and pipeline orchestration for AI agents.
- Collaborated with various APIs (Twilio, Meta, Google Trends, Dropbox) to integrate real-world data into ML workflows.

PROJECTS

SLIDEGEN APP – AI-POWERED SLIDE GENERATOR Github
Python | FastAPI | OpenAI API | ChromaDB

- Developed an AI-powered slide generator that converts a topic and description into structured, visually-rich HTML slides.
- Integrated OpenAI and LangChain to generate slide outlines, content, and fun facts; used ChromaDB for semantic memory and context management.
- Designed a simple UI to preview and navigate slides, with rich formatting using Tailwind CSS and HTML5.

COUPLE COUNSELOR BOT Github
Python | FastAPI | Gemini API | ChromaDB | WebSocket | MongoDB

- Built a multi-agent counseling bot that communicates with partners separately while maintaining shared context across sessions.
- Utilized Gemini API for conversational intelligence, ChromaDB for vector-based memory, and LangChain for message routing and contextual reasoning.
- Enabled real-time chat via WebSocket, session tracking, and secure message persistence with MongoDB.

RESEARCH

MODULATION CLASSIFICATION USING CONTINUOUS WAVELET TRANSFORM | Signal Processing | Computer Vision | Deep Learning

- Synthesized modulated signals using MATLAB Communication Toolbox with various channel impairments, extracted amplitude and phase from sampled I/Q components, and constructed scalograms using continuous wavelet transform.
- Trained a dual-stream CNN on amplitude and phase scalograms for multi-input classification (98% accuracy, 1M parameters), then optimized it for edge deployment using depthwise separable and pointwise convolutions, reducing model size to 94k parameters with 96% accuracy.

EDUCATION

BRAC UNIVERSITY
Bachelor of Science in Computer Science
Expected June 2025
Cum. GPA: 3.6 / 4.0

SKILLS

TECHNICAL
Programming Languages:
Python • SQL • Java
Machine Learning & AI:
PyTorch • Scikit-learn • Computer Vision (OpenCV) • Neural Networks
Data Science:
Pandas • NumPy • Matplotlib • Seaborn • Data Wrangling • Statistical Analysis
Tools & Deployment:
Git/GitHub • Docker (Basic) • FastAPI • Jupyter/Colab • Linux/CLI

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**