Momin Diyar

(Data Science, Machine Learning, NLP, GenAI)

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About me

I am a dedicated Computer Software Engineering graduate with a strong foundation in Data Science, Machine Learning, and NLP, complemented by practical experience in developing innovative AI solutions. My background includes hands-on work with IBM courses and projects that have strengthened my skills in supervised and unsupervised learning, deep learning models, and large language models (LLMs). I have experience in fine-tuning LLMs, building Retrieval-Augmented Generation (RAG) systems, and creating chatbots using LangChain, combining these tools to deliver advanced, interactive applications. Additionally, I am well-versed in NLP technologies like TTS, STT, and Hugging Face. I am seeking a Junior Data Scientist, ML Engineer, or AI Engineer role where I can leverage my technical expertise and passion for problem-solving to contribute to forward-thinking projects in a collaborative, AI-driven environment.

Experience

Agentic AI Email Assistant **For Personal Usage**

- *Autonomous AI Agent | LangChain · GPT-4 · Email Automation*
- Developed an Agentic AI system that autonomously generates and sends emails based on user-defined goals or schedules.
- Integrated LangChain agents for multi-step reasoning: task planning, email drafting, and execution.
- Used **GPT-4** for context-aware email generation (formal/informal, follow-ups, reminders).
- Connected with SMTP/Gmail API for real-time email sending and IMAP for inbox monitoring.
- Added scheduling logic using APScheduler to automate daily or event-based email tasks.
- Employed vector databases to store past interactions and enhance personalization with memory

NLP Internship (Itsolera PVT LTD) **Ongoing**

- During my internship, I gained hands-on experience in Natural Language Processing (NLP) using various tools and libraries, including NLTK, Spacy, Gensim, and Hugging Face.
- I worked on key projects that involved text summarization, text-to-speech (TTS) generation, Speech to Text (STT) generation, Topic modeling and Chatbot Development.
- One of my significant accomplishments was successfully completing a project focused on text-to-speech generation, where I implemented and fine-tuned models to convert text into natural-sounding speech.

Machine Learning Internship (Ezitech Institute) **10/2024 - 02/2025**

- Conducted Exploratory Data Analysis (EDA) and utilized Scikit-learn for various algorithms.
- Used TensorFlow and Keras to build and train ANN, CNNs, and pre-trained models.
- **Worked on projects:** Cotton Plant Disease Prediction, Brain Tumor Detection, Dog vs Cat classification, and Dubai properties dataset ETL.

Technical Skills

Python | Pandas | NumPy | Matplotlib | Seaborn | Scikit-Learn | TensorFlow | Keras | PyTorch | CNN | ANN | RNN | LSTM | GRU | NLTK | TF-IDF | TTS (Text-to-Speech) | Transformers | Hugging Face | SpaCy | STT (Speech-to-Text) | LangChain | RAG | Fine-tuning | Chatbot Development (using Rasa | Dialogflow | or OpenAI models) | CrewAI | Groq | Llama | Gemini | BERT | GPT-4 | TTS systems like ElevenLabs | Speech Synthesis | Descript Overdub | iSpeech | Tacotron | Voice Cloning with Deep Learning (using neural networks like Vocoder | WaveNet) | OpenCV | Image Super-Resolution (using SRCNN | ESRGAN) | Denoising (using Autoencoders | GANs) | Image Inpainting | DIP (Deep Image Prior) | Deep Learning-based Restoration tools | FastAPI | Streamlit | Gradio | Flask | Docker (for containerized deployment) | MySQL | PostgreSQL | Vector Databases (FAISS | Chroma | Weaviate | Pinecone)

- **Language:** C++, Python, SQL

Projects

AI Virtual Doctor – Medicine Recommendation System

- *Machine Learning · NLP · Gradio · Scikit-learn*
- Developed an **AI-based virtual doctor system** that uses **machine learning and NLP** to recommend diseases, medicines, and specialists based on user symptoms.
- Preprocessed symptom data and trained models like **Random Forest** and **Naive Bayes**, achieving **92% accuracy** in disease prediction.
- Integrated **Gradio** for a user-friendly interface, allowing real-time consultation and feedback.
- Utilized **confusion matrix** to assess model performance, showing high precision and recall for common diseases.
- Enhanced healthcare accessibility by providing instant, AI-driven medical advice.

Heart Attack Prediction (ML)

- **Description:** Analyzed a heart disease dataset, visualized data insights, and built a machine learning model to predict the likelihood of heart disease.
- **Technologies:** Python, Scikit-Learn, Panda, Numpy, TF-IDF, Naive Bayes classifier

Cotton Plant Disease Prediction (DL)

- **Description:** Developed a model to identify diseases in cotton plants by analyzing images with Convolutional Neural Networks (CNNs).
- **Technologies:** Python, Tensorflow, Keras, CNN (Resnet50, VGG, etc.)

Text-To-Speech Generation and Text-To-Speech (NLP)

- **Description:** TTS and STT generation, where I implemented and fine-tuned models to convert text into natural-sounding speech and speech to Text. Text-to-speech generation of 17 different languages, and Speech-to-text generation of 100 different languages
- **Technology:** Python, TTS model of hugging face, XTTS-v2, whisper, Gradio etc

Chatbot development (NLP, Gen AI, BERT, LLAMA)

- **Description:** Multi Document RAG Chatbot, QA Chatbot, Finetuned Distilled BERT for Sentiment Analysis, Text Summarization etc
- **Technologies:** Langchain, FAISS, Chroma, Gradio, FastAPI, Streamlit, LORA, RAG, Transformers, LLAMA, BERT, Gemini

AI Doctor – Real-Time Symptom + Image + Voice Diagnosis :

- **What it does**: Takes **symptoms (text/voice)** and **images (rash, eye, etc.)** in real time, gives a diagnosis, recommends medicine, and speaks the output.

Traffic Violation Detection Agent :

- **What it does**: Detects real-time traffic violations like signal jumping, wrong-way driving, no-helmet riders and sends automated challans (tickets).
- **Tech**: YOLOv8, OpenCV, License Plate Recognition, LangChain agents

Certificates

- **IBM Data Science Professional Certificate: Link**
- **Machine Learning Specialization by Stanford: Link**

Languages

English, Urdu, Pashtu