MD MAHEDI HASAN TURJOY

Software Engineer

✉ mahedi1316@gmail.com 📞 +8801636071532 📍 Dhaka, Bangladesh

EDUCATION

2021 - 2025
B.S.C IN CSE   **CGPA: 3.00**
EAST WEST UNIVERSITY   Dhaka, Bangladesh.

SKILLS

CORE COMPETENCIES

- **Backend Development:** Python, Java, Spring Boot, REST APIs, Flask, FastAPI
- **Database Management:** PostgreSQL, Oracle
- **Cloud Platforms & DevOps:** AWS, Azure, Docker
- **Version Control:** Git, GitHub
- **Tools & Frameworks:** Spring Boot, Node.js, Swagger

PROFICIENCIES

- **Programming Languages:** Python, Java, C++, JavaScript, TypeScript
- **Machine Learning & AI:** KNN, SVM, XGBoost, Random Forest, Neural Networks (CNN, LSTM, GRU), NLP (BERT, GPT) & Transformers.
- **Tools & Frameworks:** Spring Boot, Flask, FastAPI, REST API, Swagger
- **Software Development Practices:** Agile, Scrum

LANGUAGES

- **English:** Conversational
- **Hindi:** Conversational
- **Bengali:** Native

💻 https://tinyurl.com/turjoy-web-app
in https://www.linkedin.com/in/mahedi-hasan-turjoy

ABOUT ME

Ambitious Software Engineer with strong expertise in Python, Java, and Machine Learning.Proven ability to design and develop scalable, reliable, and high-performance systems. Hands-on experience in microservices, backend development, and API integration. Skilled in working with cloud platforms and managing data-driven applications. Passionate about applying AI/ML techniques to solve real-world challenges. Focused on delivering innovative, efficient, and impactful software solutions.

WORK EXPERIENCE

SOFTWARE ENGINEER – OTECHBD   June, 2025 -Present

- Developed backend services using Java and Python.
- Integrated machine learning and AI models for detection and classification tasks.
- Designed REST APIs and optimized database performance with PostgreSQL.
- Built AI-powered features using scikit-learn and TensorFlow.
- Worked with AWS for deployment and managed CI/CD pipelines.

Professional Project's

- **Goods Export Application** – Developing a Java Spring Boot–based solution for customer order processing, reporting, and workflow automation.
- **Portable Electronic Nose for Beverage Aroma Classification** – Built a low-cost portable e-nose system using sensors, Arduino, Flask, and deep learning (CNN, K-means, Decision Tree), achieving 99.19% accuracy.

EXTRA-CURRICULAR ACTIVITIES

- **AI/ML Trainer - Google Developer Group Sonargaon (2021 - Present)** - Conducted 12+ workshops at various universities, training over 500 students in AI and machine learning applications. Guided participants through Gemini API integration for conversational AI development. Delivered hands-on sessions on building customer service and virtual assistant AI bots.
- **Founder & President at Sunrise Club** -Founded and led a community service organization focused on flood relief, working with underprivileged children, and providing support to the Poor/needy through various social welfare initiatives.

CERTIFICATIONS

- Foundations of AI and Machine Learning – Microsoft
- AWS Services for AI Solutions – AWS
- AI Fundamentals and the Cloud – AWS
- AWS Generative AI Applications – AWS
- Python Project for Data Engineering – IBM
- Introduction to Relational Databases (RDBMS) – IBM
- Generative AI Architecture and Application Development – Edureka
- Data Engineering Foundations – IBM
- Machine Learning and NLP Basics – Edureka
- Generative AI Foundations – Edureka
- Learn Generative AI with LLMs Specialization – Edureka
- Fundamentals of AI Agents Using RAG and LangChain – IBM
- Introduction to Data Engineering – IBM

NOTABLE PROJECTS

- **AI-Powered REST API with Spring Boot & HuggingFace:** Developed a Spring Boot REST API for serving NLP models like sentiment analysis and text summarization using HuggingFace Transformers. Implemented simple endpoints for text processing and deployed the application on a local server. Utilized Node.js for backend communication and Docker for containerizing the application for easy deployment.
- **E-Commerce Recommendation System:** Created a Spring Boot-based e-commerce platform with features like user management and product catalog. Integrated a basic recommendation engine using machine learning and connected it to the backend via REST APIs. Deployed the system on a cloud server using AWS to handle scalable traffic and ensure optimal user experience.
- **Smart Home Automation System:** Built a Spring Boot application to control smart home devices (lights, fans, thermostats). Developed REST APIs for device control and integrated them with a mobile app for user interaction. Implemented real-time notifications using Node.js and WebSockets for instant device status updates.
- **AI-Powered Chatbot with Ollama, Deepseek, and Gemini API:** Developed AI-powered chatbots using Ollama for natural conversation and Gemini API for real-time data integration. Fine-tuned transformer models to enhance performance, delivering scalable and context-aware solutions for customer support.
- **Automated Sentiment Analysis, Custom AI Prompt Generation, AI Agent Chatbot Using n8n & Google Gemini:** Developed AI-driven systems using n8n and Google Gemini to automate customer support. Built systems for sentiment analysis by extracting reviews from Google Sheets, classifying sentiments, visualizing results, and sending summaries. Created AI chatbot that generates custom prompts and processes them with Google Gemini.
- **Developed a Portable Electronic Nose for Beverage Aroma Classification:** Designed a low-cost portable electronic nose system using Multichannel gas sensors, Arduino, and Flask for real-time beverage aroma classification. Achieved 99.19% accuracy, providing a scalable alternative to traditional sensory methods.
- **Sarcasm Detection in Social Media Using Transformer-Based Models:** Implemented a sarcasm detection system using BERT, RoBERTa, DistilBERT, and GPT. Achieved 96% accuracy in detecting sarcasm in social media posts, using text preprocessing and data augmentation.
- **Object Detection for Underwater Plastics Classification Using YOLOv8:** Fine-tuned YOLOv8 on an underwater plastics dataset to detect plastic waste. Achieved high accuracy in real-time detection & environment monitoring.

RESEARCH PUBLICATIONS

- **Publication [1]:** "Reliable Energy Consumption Prediction: Leveraging Deep Learning with SHAP and LIME for Transparency"- **Md Mahedi Hasan Turjoy**, Israt Tamanna, Umme Habiba Fariha, Md. Nafiz Mustafa, Md. Khabbab Hossain Tusher, Md. Maruf, Shamim Mozumder, Md. Jakir Hossain (Springer Conference)
- **Publication [2]:** "Ultrasound Image-Based Classification of Gallbladder Diseases by Hybrid Model"- **Md Mahedi Hasan Turjoy**, Ramisa Hossain Arna, Israt Tamanna, Md. Khabbab Hossain Tusher, Ahmed Wasif Reza (Springer Conference)
- **Publication [3]:** "Detection of Lemon Leaf Diseases Using Inception V3-Based Machine Learning Model"- Md Sanwarul Islam, **Md Mahedi Hasan Turjoy**, Risul Islam Refat, Mahedi Masnad Ether, Ismail Mahmud Nur, Shamil Bin Hossain Noor, Disha Sikder Puja, Sabit Al Alfi, Md. Jakir Hossain (Springer Conference)
- **Publication [4]:** "Pumpkin Leaf Disease Classification: A Comparative Study of SimCLR and Traditional Supervised Learning Approaches" – Joy Biswas, S.M. Nazmul Hasan, Redita Sultana Reemu, Tithi Paul, Hredoy Majumder, Taslima Akter Sathi, **Md Mahedi Hasan Turjoy**, Dr. Raihan Ul Islam (IEEE QPAIN 2025 – IEEE Xplore, Indexed by Scopus)