MD RATUL HOSSEN

Aspiring AI Researcher | LLM Enthusiast | Data-Driven Problem Solver

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PROFILE SUMMARY

Computer Science student at Daffodil International University with strong expertise in Python, focusing on data manipulation and analysis. Solid foundation in C and C++ for core problem-solving. Passionate about Artificial Intelligence—specifically Large Language Models (LLMs)—with practical experience deploying models locally via Ollama. Currently exploring transformer architectures, modern training methodologies, and fine-tuning techniques. Active researcher engaged with university AI and programming clubs, driven by the long-term goal of building scalable LLMs from scratch.

EDUCATION

B.Sc. in Computer Science & Engineering

Daffodil International University | Jan 2025 – 2028 | Dhaka, Bangladesh

Semester	SGPA
1st Semester	3.69
2nd Semester	3.58
3rd Semester	3.86

Relevant Coursework: Data Structures, Algorithms, Database Systems, Object-Oriented Programming

Higher Secondary Certificate (HSC)

Noapara Govt. College | 2023 | Jashore Board | Group: Science | GPA: 4.58

PROJECTS

M.E.R.C.Y — AI Agent System

Python, Ollama, Telegram API, JSON | github.com/itzRatul/M.E.R.C.Y

Engineered a context-aware AI companion leveraging local LLM deployment via Ollama. Implemented a custom memory management system with user profiling, conversation history retention, and task/reminder tracking. Designed adaptive personality architecture enabling dynamic mood-based responses. Demonstrated practical LLM integration skills for real-world conversational AI applications.

Project Rainfall — Data Analysis & Prediction

Python, Pandas, NumPy, Matplotlib, Scikit-learn | github.com/itzRatul/project-rainfall

Processed and analyzed 24 years (2001–2024) of daily rainfall data from multiple geographic locations. Built automated data pipelines handling both CSV and Excel formats with intelligent column detection. Applied linear regression models to forecast future rainfall trends, achieving practical predictive capabilities for climate pattern analysis. Generated comprehensive visualizations including trend lines, seasonal patterns, and forecast plots.

Patient Management System

C, File Handling, Data Structures | github.com/itzRatul/Patient-management-system

Developed a secure command-line healthcare record management system emphasizing data privacy and efficient record handling. Implemented multi-user authentication with secure login protocols ensuring authorized access only. Engineered comprehensive patient profile management with unique identifier-based updates,

intelligent search capabilities (by name, contact, disease, blood group), and persistent file storage.

TECHNICAL SKILLS & INTERESTS

Programming Languages

Language	Proficiency	Application Area
Python (NumPy, Pandas)	Advanced	Data Analysis & Machine Learning
C & C++	Proficient	Core Programming & Problem Solving

AI & Machine Learning

- Large Language Models (LLMs) — Architecture understanding & practical deployment
- Local LLM Deployment — Ollama, Hugging Face integration
- Transformer Architecture — Self-attention mechanisms, encoder-decoder structures
- Model Fine-Tuning — Parameter-efficient training techniques (in progress)
- AI Agent Development — Workflow automation with n8n

LLM Foundation & ML Stack

- Deep Learning & ML Base: PyTorch, Scikit-learn (Core concepts & architectures — Learning Stage)
- Data Processing Pipeline: NumPy, Pandas (Handling & preparing datasets for ML)
- Visualization & Evaluation: Matplotlib, Seaborn

Areas of Interest: AI Research & LLM Development | Problem Solving | Project Management

Languages

Language	Proficiency
English	Fluent
Bengali	Native
Hindi & Urdu	Conversational

ACTIVITIES & MEMBERSHIPS

Executive Member — Research & Journal Wing

DIU Computer & Programming Club

- Engaging in structured AI research activities and theoretical foundation building
- Contributing to academic publications and research initiatives

Executive Member

Daffodil AI Club

- Active participant in AI community building and practical development workshops
- Collaborating on emerging AI/ML projects and knowledge-sharing initiatives

Hobbies: Reading | Chess | Football | Poetry

REFERENCE

Mr. Mehadi Hasan (MHN)

Lecturer, Department of CSE — Daffodil International University

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