

# Md Marop Hossain

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## CAREER OBJECTIVE

I'm a recent computer science graduate with practical experience in AI, machine learning, and LLMs. I'm looking to join a team where I can work on meaningful, real-world projects, keep learning new technologies, and grow into a strong AI developer, software engineer, or technical contributor in development roles.

## SPECIALIZED SKILLS

**Large Language Models (LLMs):** GPT, BERT, Claude, LLaMA, DeepSeek, LangChain, LangGraph

**Machine Learning & AI:** PyTorch, TensorFlow, Keras, Scikit-learn, OpenCV, NLTK, HuggingFace, Fine-tuning, Prompt Engineering, Generative AI, RAG, FAISS, Chroma, Pinecone, NLP, Statistical Analysis, Data Cleaning

**Programming Languages & Tools:** Python, C/C++, Java, JavaScript, Git, SQL (advanced), MySQL, MongoDB, Bash

**Data Science & Visualization:** Pandas, NumPy, SciPy, Matplotlib, Seaborn

**Web & Application Development:** FastAPI, React.js, Django, PHP, Streamlit

**Cloud & DevOps:** AWS (SageMaker, Lambda, Step Functions), Azure (Azure ML, Azure Functions), GCP (Vertex AI, Google Cloud Functions), Docker, GitHub Actions, CI/CD Tools

**Soft Skills:** Strong Communication, Team Collaboration, Analytical Thinking, Quantitative Analysis, Problem-Solving, Adaptability

## EDUCATION

**North South University**

*Bachelor of Science (BS) in Computer Science and Engineering*

Dhaka, Bangladesh

January, 2020 — June, 2024

- **Relevant courses:** Pattern Recognition and Neural Network, Machine Learning, Software Engineering, Data Structures & Algorithms, Linear Algebra, Probability & Statistics, Internet and Web Technology.

## RESEARCH & COURSE PROJECTS

**Next-Generation Multi-Model Personal AI Agent Chatbot Platform with Real-Time Web Search** [🔗 Project Link](#)

- Built a robust, production-ready chatbot platform that integrates OpenAI and Groq models with real-time web search, using FastAPI, LangGraph, LangChain, Streamlit, and Uvicorn for dynamic, up-to-date, and intelligent conversations.

**Hybrid Log Classification System with Deepseek-R1 LLM, BERT, NLP and Regex** [🔗 Project Link](#)

- Developed a hybrid AI system for automated log message classification by designing a scalable pipeline that integrates Regex pattern matching—with pattern discovery enhanced by DBSCAN clustering—BERT embeddings with logistic regression, and Deepseek R1 Large Language Models (LLM), ultimately enabling organizations to more rapidly detect errors, security threats, and system events, reduce manual review, and improve IT operations by ensuring high accuracy and adaptability for both common and rare log types.

**Enhancing Ocular Disease Diagnosis, Blood Vessel Segmentation, and Vessel Diameter Estimation Using an Advanced Deep Learning Approach** [🔗 Project Link](#)

- Developed retinal vessel segmentation and diameter estimation algorithms for diagnosing ischemia, macular degeneration, and cardiovascular diseases, enabling early, cost-effective detection with potential for mobile or web integration.
- Designed an advanced system using pre-trained models (EfficientNetV2S, ResNet50, DenseNet121) to classify ocular diseases (cataracts, glaucoma, diabetic retinopathy) with high accuracy, improving diagnostic efficiency.

**Segmentation of Blood Vessels, Optic Disc Localization, Exudates Detection for - Diabetic Retinopathy, and Glaucoma Diagnosis From Fundus Images** [🔗 Project Link](#)

- Developed an automated diagnostic system using image processing and machine learning to detect diabetic retinopathy and glaucoma, achieving 98.77% accuracy in optic disc localization and 75.73% accuracy in retinal feature classification.
- Engineered blood vessel segmentation algorithms with improved accuracy and noise reduction using morphological operations, Otsu thresholding, and deep learning techniques.

**Predictive Modeling and Analysis of Software Engineers Salary Using Machine Learning** [🔗 Project Link](#)

- Built a ML framework using regression models (Decision Trees, Random Forest, Linear Regression, XGBoost) to predict software engineer salaries with 76% accuracy, leveraging 60,000+ entries from the 2023 Stack Overflow Developer Survey.
- Deployed a user-friendly web application for real-time salary predictions, supporting job seekers and recruiters in salary negotiations and career planning.

## EXPERIENCE

**NSU ACM STUDENT CHAPTER** | Web Development Team

October 2021 — January 2024

*Moderator*

- Served as a moderator for the NSU ACM SC web development team, overseeing website maintenance and development, including the implementation of a feature enabling participants to verify their ACM certificates.

## CERTIFICATIONS & ACHIEVEMENTS

**Fine-Tuning for LLMs: From Beginner to Advanced** | LinkedIn [🌟 View Certificate](#)

May 2025

**Career Essentials in Generative AI** | Microsoft & LinkedIn [🌟 View Certificate](#)

April 2025

**AI Engineering Essentials: Navigating the Tech Revolution** | LinkedIn [🌟 View Certificate](#)

March 2025

**Machine Learning** | SkillUp by Simplilearn [🌟 View Certificate](#)

August 6, 2023

**Complete Web Development Course** | Programming Hero (Batch 4) [🌟 View Certificate](#)

Jan 2021 — Aug 2021

**Python Data Structures** | Coursera (University of Michigan) [🌟 View Certificate](#)

August 12, 2020