

Mohammad Junayed Hasan

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EDUCATION

Johns Hopkins University

Baltimore, MD

Master of Science in Computer Science

Expected Dec. 2025

- Relevant coursework: Artificial Intelligence, Machine Learning, Human Language Technology, Machine Translation

North South University

Dhaka, BD

Bachelor of Computer Science and Engineering GPA: 3.95/4.00, Summa Cum Laude

Dec. 2023

- Relevant coursework: Software Engineering, Data Structures & Algorithms, Database Systems, Probability & Statistics
- Received full-merit scholarship (**top 1%** of class)

SKILLS

Programming & Tools: Python, Java, C/C++, JavaScript, Git, Docker, AWS, GCP, MySQL, Django, Spring

Machine Learning & AI: PyTorch, Tensorflow, Keras, Scikit-learn, HuggingFace, OpenAI API, NLTK, SciPy

Data Science & Engineering: Pandas, NumPy, Matplotlib, Seaborn, LLM Fine-tuning, Prompt Engineering

EXPERIENCE

AI Research Instructor

Jan. 2024 - Present

North South University

Dhaka, BD

- Instructed **100+** students on **10+** advanced topics from statistical ML to deep learning, LLMs, and model compression
- Formulated and supervised **15+** high-impact research projects in applied ML, medical imaging, and clinical NLP
- Collaborated with **20+** researchers through research ideation, execution, and publication processes

Machine Learning Engineer

Nov. 2023 - July 2024

Apurba Technologies Ltd.

Dhaka, BD

- Developed a compression framework with LLMs, reducing model size by **95.6%** and inference time by **96.5%**
- Designed a multi-task learning model for video classification; outperformed previous methods (CNNs, LSTMs) by **>3%**
- Secured **\$35,000** grant for “Best Innovation Idea” at a research competition; presented findings at **3** conferences

Teaching Assistant

Apr. 2022 - Nov. 2023

North South University

Dhaka, BD

- Mentored **200+** undergraduates in Java programming through lectures, course materials, and performance evaluation

PROJECTS

Stress Detection System | PyTorch, Scikit-learn, LLMs, HuggingFace, Git

- Engineered an AI framework achieving **90.32%** accuracy on test data with ML models and BERT transformers
- Deployed a real-time assessment tool with response time **<100ms**, validated on **four** synthetic data generation techniques

Disease Prediction Framework | PyTorch, Scikit-learn, LLMs, Prompt Engineering, AWS

- Developed an ensemble model achieving **85.25%** accuracy on test data, surpassing existing methods by **3-10%**
- Designed effective prompts with prompt chaining, improving model generalizability by **1.2%** on synthetic data

Hybrid Quantum-Classical Distillation | Qiskit, PyTorch, Matplotlib

- Built a knowledge distillation framework improving quantum neural network accuracy by **2.5%** across multiple datasets
- Implemented hybrid classical-quantum architectures reducing training complexity while improving model performance

Web Crawling Engine | Python, Django, BeautifulSoup, MySQL

- Led a team of **four** to build a scalable search engine with automated web crawling and data extraction capabilities
- Designed efficient indexing algorithms handling **100,000+** web pages with **95%** accuracy in content extraction

PUBLICATIONS

- **Hasan, M. J., Rafat, K., Rahman, F., Mohammed, N., & Rahman, S.** (2024). DeepMarkerNet: Leveraging Supervision from the Duchenne Marker for Spontaneous Smile Recognition. *Pattern Recognition Letters*
- **Hasan, M. J., Rahman, F., & Mohammed, N.** OptimCLM: Optimizing Clinical Language Models for Predicting Patient Outcomes Via Knowledge Distillation, Pruning and Quantization. *International Journal of Medical Informatics* (Preprint)