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 & Data Science: Python, Java, Scikit-learn, PyTorch, Tensorflow, Keras, Git, Docker, HuggingFace, OpenAI API
Data Engineering & Visualization: AWS, MySQL, Pandas, NumPy, Prompt Engineering, LLM Fine-tuning, Matplotlib, Seaborn
Languages: Bengali (Native), English (Professional), Hindi (Fluent), Urdu (Fluent)

EXPERIENCE

AI Research Instructor *Jan. 2024 - Present*

North South University Dhaka, BD

- Instructed **100+** students on 10+ advanced topics including deep learning, LLMs, and model compression
- Formulated **15+** high-impact research projects in ML, medical imaging, and 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 smile video classification, outperforming 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 processing responses in **<100ms**, validated across **4** synthetic data generation techniques

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

- Developed an ensemble model achieving **85.25%** accuracy on test data, surpassing existing methods by **3-10%**
- Implemented novel prompt engineering techniques, improving model generalizability by **1.2%**

Quantum-Classical ML Bridge | *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 Data Extraction Engine | *Python, Django, BeautifulSoup, SQL*

- 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* (Under review, 2nd round)