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 **4** 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*