Md Niaz Imtiaz, PhD

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Data science and machine learning researcher committed to uncovering insights and solving real-world challenges.

Professional Experience

Assistant Professor *November 2016 - Present*

Pabna University of Science and Technology, Pabna, Bangladesh

- Taught *Software Design, Structured Programming Language, Object-Oriented Programming, Discrete Mathematics, Digital Signal Processing, and Algorithms* to undergrad students
- Supervised independent research projects conducted by undergraduates

Lecturer *November 2014 - November 2016*

Pabna University of Science and Technology, Pabna, Bangladesh

Research Assistant *January 2022 - September 2025*

Toronto Metropolitan University, Toronto, Ontario, Canada

- Developed novel source-free unsupervised domain adaptation (SF-UDA) frameworks for physiological signal analysis (EEG, ECG), improving cross-dataset classification accuracy while preserving data privacy.
- Developed novel unsupervised domain adaptation (UDA) frameworks for physiological signal analysis (EEG, ECG), enabling robust cross-dataset classification.

Intern (Mitacs Accelerate Program) *May 2022 - November 2022*

Myant Inc., Toronto, Ontario, Canada

- Collaborated on the *Garment-based Neuroprosthesis* project, a non-invasive closed-loop neural extension designed to support and enhance human nervous system function.
- Developed a robust approach*, Pan-Tompkins++,* for detecting R-peaks in ECG signals.

Lecturer *May 2013 - November 2014*

Noakhali Science and Technology University, Noakhali, Bangladesh

Lecturer *May 2012 - January 2013*

University of Information Technology & Sciences (UITS), Dhaka, Bangladesh

Education

Doctor of Philosophy in Electrical and Computer Engineering, *October 2025*

Toronto Metropolitan University, Toronto, Ontario, Canada

Dissertation: Domain Adaptation for Physiological Signal Classification

Master of Science in Computer Science and Engineering, *December 2019*

Pabna University of Science and Technology, Pabna, Bangladesh

Thesis: Using Machine Learning for Identifying Influential Smart Phone Features from Customers' Online Reviews

Bachelor of Science in Computer Science and Engineering, *April 2012*

Bangladesh University of Engineering and Technology, Dhaka, Bangladesh

Research Interests

Physiological Signal Processing, AI in Healthcare, Machine Learning, Deep Learning, Data Analysis, Domain Adaptation, Natural Language Processing, Hyperspectral Imaging, and Explainable AI.

Technical Skills

Python, PyTorch, Tensorflow, C, C++, Java, MATLAB, LaTex

Awards

- University Research Award (Multiple), 2022–2025
- Toronto Met Graduate Development Award (Multiple), 2022–2025

Certifications

Coursera Specializations and Courses in Artificial Intelligence and Machine Learning:

- Natural Language Processing in TensorFlow
- Natural Language Processing with Classification and Vector Spaces
- Natural Language Processing with Probabilistic Models
- Convolutional Neural Networks
- Introduction to TensorFlow for Artificial Intelligence, Machine Learning, and Deep Learning
- Sequence Models
- AI For Everyone
- Improving Deep Neural Networks: Hyperparameter Tuning, Regularization, and Optimization
- Introduction to Data Science in Python
- Neural Networks and Deep Learning
- Structuring Machine Learning Projects

Recent Publications

Imtiaz, M. N., & Khan, N. (2025). Enhanced cross-dataset electroencephalogram-based emotion recognition using unsupervised domain adaptation. Computers in Biology and Medicine, 184, 109394. (Elsevier, Q1, IF: 6.5)

Imtiaz, M. N., & Khan, N. (2024). Cross-database and cross-channel electrocardiogram arrhythmia heartbeat classification based on unsupervised domain adaptation. Expert Systems with Applications, 244, 122960. (Elsevier, Q1, IF: 9.4)

Imtiaz, M. N., & Khan, N. (2022, December). Pan-Tompkins++: A robust approach to detect R-peaks in ECG signals. In 2022 IEEE International Conference on Bioinformatics and Biomedicine (BIBM) (pp. 2905-2912). IEEE.

Imtiaz, M. N., Ahmed, M. T., & Hasan, M. R. (2022). Identifying Biased Reviews: An Analysis on Amazon Electronic Products. International Journal of Software Innovation (IJSI), 10(1), 1-10. (IGI Global, Q3, IF: 0.6)

Imtiaz, N., Ahmed, T., & Paul, A. (2022). Incentivized comment detection with sentiment analysis on hotel reviews. Asia-Pacific Journal of Science and Technology, 27(3), 1-11. (Khon Kaen University, Thailand, Q4)

Imtiaz, M. N., & Ben Islam, M. K. (2020). Identifying significance of product features on customer satisfaction recognizing public sentiment polarity: Analysis of smart phone industry using machine-learning approaches. Applied Artificial Intelligence, 34(11), 832-848. (Taylor and Francis, Q1, IF: 4.3)

Islam, M. Z., Khatun, M. M., Chyon, M. S. A., Anzoom, R., **Imtiaz, M. N.,** Iqbal, S. H. S., Azam, M. S., Rahim, M. A., Ahmed, M. W., & Ahmed, M. T. (2026). Comparative analysis of explainable machine learning integrated with hyperspectral imaging for early prediction of wheat yield. Talanta, 308, 129955. (Elsevier, Q1, IF: 6.7)

Khatun, M. M., Hasan, M. A., Chyon, M. S. A., Anzoom, R., Ahmed, M. W., Azam, M. S., Iqbal, S. H. S., Rahim, M. A., **Imtiaz, M. N.,** & Ahmed, M. T. (2026). Estimating soil organic carbon by integrating mid-infrared spectroscopy with explainable machine learning. Results in Chemistry, 26, 103386. (Elsevier, Q2, IF: 5.8)

Khatun, M. M., Islam, M. Z., **Imtiaz, M. N.,** Ahmed, M. W., & Ahmed, M. T. (2026). Explainable AI-guided hyperspectral feature selection in fruit quality assessment and spatial visualization. Journal of Food Science, 91(3), e70976. (Wiley, Q1, IF: 3.4)

Other Professional Activities

Reviewer for *Digital Signal Processing, Elsevier*

Reviewer for *Expert Systems with Applications, Elsevier*

Reviewer for *Neurocomputing, Elsevier*

Reviewer for *IEEE Journal of Biomedical and Health Informatics*

Reviewer for *Computer Methods in Biomechanics and Biomedical Engineering, Taylor and Francis*

Reviewer for *Computers in Biology and Medicine, Elsevier*

Reviewer for *Neural Networks, Elsevier*

Session Chair, Artificial Intelligence and Robotics session, International Conference on Power, Electronics, Communications, Computing, and Intelligent Infrastructure (PECCII 2026) (IEEE)