

Dr. Md. Toukir Ahmed

PERSONAL DATA

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EDUCATION

- 2021- 2025 Doctor of Philosophy (Ph.D.) with Data Science & Engineering concentration
Department of Agricultural and Biological Engineering (ABE),
University of Illinois Urbana-Champaign (UIUC),
Urbana-61801, United States
CGPA:4.00/4.00
- 2012- 2017 Bachelor of Science (B.Sc.) in Computer Science and Engineering
Department of Computer Science and Engineering (CSE),
Bangladesh University of Engineering and Technology (BUET),
Dhaka-1000, Bangladesh
CGPA:3.67/4.00

PROFESSIONAL EXPERIENCE

Graduate research assistant

- Worked as a graduate research assistant at the Department of ABE in UIUC from August 2021- April 2025.
- Conducted successful research on ML-based spectral data analysis, hyperspectral image analysis, image reconstruction, and spectroscopic software design for [IOSNEL Lab](#).
- Served as a reviewer for reputed Q1 journals including Pattern Recognition, Computers and Electronics in Agriculture, and Engineering Applications of Artificial Intelligence.

Assistant Professor

- Working as an Assistant Professor of the Department of Computer Science and Engineering in **Pabna University of Science and Technology (PUST)** since August 3, 2020.
- Conducted courses on Programming, Artificial intelligence, Machine learning, and Database
- Worked as an adviser of the IEEE PUST student branch

RESEARCH INTERESTS

Machine Learning, Deep Learning, Explainable Artificial Intelligence, Computer Vision, Bioinformatics, Spectroscopy, Hyperspectral Image Processing, Image Reconstruction

PUBLICATIONS

- Ahmed, Toukir, et al. (2025) "A systematic review of explainable artificial intelligence for spectroscopic agricultural quality assessment." *Computers and Electronics in Agriculture*, 235, 110354, (ELSEVIER, Q1, IF: 8.9) [Article Link](#)
- Ahmed, Toukir, et al. (2025) "A comprehensive review of deep learning-based hyperspectral image reconstruction for agri-food quality appraisal." *Artificial Intelligence Review*, 58, 96, (Springer, Q1, IF: 13.9) [Article Link](#)
- Ahmed, Toukir, et al. (2025) "Hyperspectral imaging and explainable deep-learning for non-destructive quality prediction of sweetpotato." *Postharvest Biology and Technology*, 222,113379, (ELSEVIER, Q1, IF: 6.8) [Article Link](#)

- Ahmed, Toukir, et al. (2024) "Advancing sweetpotato quality assessment with hyperspectral imaging and explainable artificial intelligence." *Computers and Electronics in Agriculture*, 220, 108855, (ELSEVIER, Q1, IF: 8.9) [Article Link](#)
- Ahmed, Md Toukir, et al. (2024) "Deep learning-based hyperspectral image reconstruction for quality assessment of agro-product." *Food Engineering*, 382, 112223, (ELSEVIER, Q1, IF: 5.8) [Article Link](#)
- Ahmed, Md Toukir, et al. (2024) "Comparative Analysis of Hyperspectral Image Reconstruction Using Deep Learning for Agricultural and Biological Applications" *Results in Engineering*, 23, 102623 (ELSEVIER, Q1, IF: 7.9) [Article Link](#)
- Ahmed, Md Toukir, et al. (2024) "SpectroChat: A windows executable graphical user interface for chemometrics analysis of spectroscopic data" *Software Impacts*, 21, 100698 (ELSEVIER, Q3, IF: 1.3) [Article Link](#)
- Ahmed, Md Toukir, and Mohammed Kamruzzaman (2024) "Enhancing corn quality prediction: Variable selection and explainable AI in spectroscopic analysis." *Smart Agricultural Technology*, 8, 100458 (ELSEVIER, Q1, IF: 6.3) [Article Link](#)
- Ahmed, Md Toukir, et al. (2024) "Hyperspectral Image Reconstruction for Predicting Chick Embryo Mortality Towards Advancing Egg and Hatchery Industry." *Smart Agricultural Technology*, 9, 100533 (ELSEVIER, Q1, IF: 6.3) [Article Link](#)
- Ocean Monjur, Md. Toukir Ahmed, Md Wadud Ahmed, and Mohammed Kamruzzaman (2025) "Agro-Net: A Convolution-Attention Fusion based hyperspectral model for agro-food quality assessment." *The Computer Vision and Pattern Recognition Conference (CVPR) Workshops 2025* [Article Link](#)

COURSES TAKEN

- Basic CS Courses: Data Structures, Algorithms, Networking, Software Engineering, Database Design
- Data Analysis: Artificial Intelligence, Machine Learning, Introduction to Data Science, Mathematics for Machine Learning, Computational Bioengineering, Data Mining

COMPUTER SKILLS

LANGUAGE:	C, C++, C#, Python, Java, Assembly, R, MATLAB, PL/SQL
ANALYSIS TOOL AND LIBRARY:	Weka, PyTorch, Tensorflow, Numpy, Scikit learn, NLTK, Pandas
DATABASE:	Oracle, MySQL
OPERATING SYSTEM:	Windows, Linux, Mac
SCRIPTING:	TeX, HTML, Shell Script(Linux)
VERSION CONTROL:	GitHub, Box

RECOGNITIONS AND AWARDS

- [Ben and Georgeann Jones Graduate Student Award for Research Excellence \(2025\)](#), University of Illinois Urbana-Champaign (UIUC), USA.
- Graduate College Conference Presentation Award for Spring 2024-UIUC, USA.
- Featured in the esteemed [Popular Science Magazine](#) and [Illinois ACES](#) for the explainable AI-based hyperspectral research.
- Featured in the [WATTPoultry Magazine](#), [ScienceDaily](#) and [Illinois ACES](#) for deep learning-based hyperspectral reconstruction research.
- BUET Dean's List Award for academic excellence in level-4 (GPA: 3.82, session: 2014-15).