Montreal, QC, Canada
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Sheikh Shah Mohammad Motiur Rahman, Ph.D

AI Researcher and MLOps Engineer

Portfolio: motiur.info
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MLOps Engineer and AI Researcher with 7+ years of experience bridging deep learning innovation and full-lifecycle software development. Expertise on foundational machine learning and artificial intelligence (AI), with deep learning specializations in image processing, multi-task learning, trustworthy and controllable AI architectures, and the deployment of robust automated systems. Recognized with an MSCA Seal of Excellence and backed by a strong publication record in top-tier journals, I have a demonstrated ability to translate AI research into highly performant, scalable technologies. Currently specialized in architecting trustworthy, neuro-symbolic AI systems and deploying automated data pipelines using Python and PyTorch.

Skills

AI & Machine Learning	Deep Learning, Controllable AI, Explainable AI, Image Processing, Neuro-symbolic AI
Programming	Python, JavaScript, PHP, MATLAB
MLOps & Orchestration	MLflow, Prefect, MLServer, Docker, CI/CD Automation
Data & Model Validation	Great Expectations, Deepchecks, Evidently AI
Tools & Infrastructure	PyTorch, FastAPI, Streamlit, MongoDB, AWS, DigitalOcean, Git, LaTeX
Leadership	Agile/Scrum Methodologies, Cross-Functional Team Management, Project Lifecycle Execution
Communication	English (Fluent), Bangla (Native), Hindi & Urdu (Conversational), French (Intermediate)

Technical Experience

Postdoctoral Fellow — **Jan 2025 — Present**
Université de Montréal (Department of Neurosciences) — *Montreal, QC, Canada*

- Architect and deploy automated, Python-based data pipelines to process complex neuro-signals recorded across multiple labs into unified, analysis-ready datasets.
- Design and implement a centralized data storage and management framework to scale collaborative, cross-lab Neuro-AI analyses.
- Led the architectural transition of a legacy MATLAB database system to modern client-server architectures, implementing remote server-side processing for high-throughput calculations.

Ph.D. Researcher — **Oct 2021 — Sept 2024**
University Bourgogne Franche-Comté (Femto-ST Institute) — *Besançon, France*

- Engineered an end-to-end deep learning pipeline for blind denoising of Scanning Electron Microscope (SEM) images, enabling rapid 3D reconstruction of microstructures.
- Developed a novel two-stage adaptive noise estimation framework, significantly outperforming state-of-the-art benchmarks on electron microscopy datasets.
- Published first-author methodologies in top-tier peer-reviewed journals including *Ultramicroscopy* and *Engineering Applications of AI*.

Lecturer (Senior Scale) — **Sep 2017 — Aug 2020**
Daffodil International University — *Dhaka, Bangladesh*

- Instructed advanced undergraduate courses focusing on Software Engineering, Object-Oriented Development, and Numerical Analysis using Python.
- Supervised multiple undergraduate theses with a strict focus on Machine Learning applications and cybersecurity frameworks.
- Mentored junior technical talent by organizing student-led research initiatives, technical hackathons, and research methodology workshops.

Technical Team Lead & Consultant — **Sep 2015 — Feb 2021**
Tekno Pole & AmTech Software Solutions — *Dhaka, BD & Hyderabad, IN*

- Managed cross-functional engineering teams of 5+ developers, implementing Agile/SCRUM workflows to deliver scalable mobile and web applications.
- Provided high-level software architecture consultancy and led remote teams for long-term enterprise project maintenance.
- Developed robust proofs-of-concept (PoC) and managed automated cloud deployments via DigitalOcean.

Education

Ph.D. in Computer Science (Deep Learning), *University Bourgogne Franche-Comté, France* — Oct 2021 — Sep 2024
M.Sc. in Internet of Things (IoT), *University Bourgogne Franche-Comté, France* — Sep 2020 — Aug 2021
M.Sc. in Computer Science & Engineering, *Jahangirnagar University, Bangladesh* — May 2017 — Apr 2018
B.Sc. in Software Engineering, *Daffodil International University, Bangladesh* — Jan 2012 — Dec 2015

ACADEMIC SERVICE & LEADERSHIP

Academic Reviewer & Committee Member **2020 — Present**

- **High-Volume Reviewer (50+ Papers):** Trusted peer-reviewer for top-tier Elsevier and Springer journals, including *Engineering Applications of Artificial Intelligence*, *Computers & Electrical Engineering*, *Expert Systems with Applications* and *IEEE Transactions on Image Processing*.
- **Technical Program Committee:** Evaluated submissions for major international conferences including IJCNN, ICMLC, and CoCoNet.

Technical Leadership & Affiliations **2014 — Present**

- **IEEE Senior Member:** Active member of IEEE Computer Society & Signal Processing Society.
- **Ambassador:** IEEEXtreme Programming Competition (Jul 2022 – Apr 2023), driving university participation and hosting competitive coding challenges.
- **Conference Organizer:** Intl. Conference on Cyber Security and Computer Science (ICONCS 2020).
- **Champion:** The National Hackathon, ICT Division – Bangladesh (2014).

AWARDS

MSCA Seal of Excellence **2025**
European Commission *International Panel of Independent Experts*

- Project proposal jointly with Technological University Dublin recognized for high-quality innovation in a highly competitive evaluation process.

IVADO Postdoctoral Fellowship **2024**
Institute for Data Valorization (IVADO), Université de Montréal *Montreal, Canada*

EIPHI-BFC PhD Fellowship (Top Ranker) **2021**
Bourgogne Franche-Comté Region (MEB3D Project) *Besançon, France*

Award of Incoming Mobility Grant **Sep 2020**
UBFC International Masters, Université Bourgogne Franche-Comté *Besançon, France*

CERTIFICATIONS

MLOps Upskilling Program	Université de Montréal & IVADO (Intermediate Level)	Feb 2026
Azure AI Fundamentals	Microsoft (Credential ID: 44F7C0D529DC2A72)	Apr 2024
AI Fundamentals	DataCamp (Certification: AIF0025736025698)	May 2024

PUBLICATIONS

- **Rahman, S. S. M. M.**, M. Salomon, and S. Dembélé, "A novel adaptive noise model selection framework for blind denoising of scanning electron microscopy images," *Engineering Applications of Artificial Intelligence*, vol. 154, p. 110871, 2025.
- **Rahman, S. S. M. M.**, M. Salomon, and S. Dembélé, "Estimatenoisesem: A novel framework for deep learning based noise estimation of scanning electron microscopy images," *Ultramicroscopy*, p. 114192, 2025.
- **Rahman, S. S. M. M.**, Z. Chen, A. Lalande, et al., "Automatic classification of patients with myocardial infarction or myocarditis based only on clinical data: A quick response," *Plos one*, vol. 18, no. 5, 20285165, 2023.
- *Full list of 30+ peer-reviewed publications available on Google Scholar.*