MD ROBIUL ISLAM

MS/PhD in Computer Science, Utah State University

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AREA OF EXPERTISE:

Deep Learning, Computer Vision, Medical Imaging, Scientific Visualization, Uncertainty Analysis

SKILLS:

Programming:	Python (Expert), C/C++ (Intermediate), Java (Intermediate)
ML/ DL:	Uncertainty Analysis, Scientific Visualization, Classification, Segmentation, Self-supervised Learning, Generative Modeling, Transformer models, Contrastive Learning, Few-shot Learning, Traditional ML.
Frameworks:	PyTorch (Expert), Numpy (Expert), scikit-learn (Expert), Pandas (Expert), Seaborn (Expert), Matplotlib (Expert).
Web Technologies:	JavaScript, CSS, HTML, MySQL.
Others:	Git, GitHub, LaTeX.

PROFESSIONAL EXPERIENCE

Graduate Research Assistantship **Aug 24 - Present**

- Computing Elevated Lab, Utah State University
- Research Projects: ML for particle trajectory prediction in fluid flows with uncertainty analysis and visualization of NNs

Assistant Professor, ECE, RUET, Bangladesh* **Dec 21 - Aug 24**

- Research Work: Medical Imaging, Self-supervised Learning, Transformer models, Contrastive Learning, Traditional ML.
- Delivered a comprehensive curriculum on OOP, Data Structure & Algorithms, Database Systems, Neural Network & Fuzzy Systems to 3 classes of 55+ students
- Research Collaboration: Manchester Metropolitan University

Lecturer, ECE, RUET, Bangladesh* **Feb 19 - Nov 21**

- Delivered a comprehensive curriculum on OOP, Data Structure & Algorithms, Database Systems, Neural Network & Fuzzy.

Lecturer, CSE, Varendra University, Bangladesh

- Taught courses in the Department of Computer Science and Engineering

EDUCATION

Utah State University, Logan, UT **Aug 24 - Present**

- Degree**:** *MS/PhD in Computer Science*
- Research Interest: Scientific Visualization with Deep learning and Uncertainty Analysis
- Coursework: Computer Vision (Project Link), Data Science in Practice (Project Link)

***Rajshahi University of Engineering & Technology (RUET), Bangladesh** **Mar 13 - Dec 17**

- Degree: *BSc in Computer Science & Engineering*, CGPA: 3.77/4.0 (6^{th} /120)
- Research Interest: Medical Imaging with Deep learning and its explainability
- Major Coursework: Data Structure, Algorithms Design, Object-oriented programming, Database Systems, Digital Image Processing, Digital Signal Processing, Artificial Intelligence, Neural Network & Fuzzy Systems, Web Project Development.

ACADEMIC PROJECTS

- Numerical Analyzer (Skills: Anadroid) Github Link
  - an android app useful for solving various numerical methods.
  - The user will choose a method and then give inputs, and the application will provide the solution
- College Website (Skills: Web development) Github Link
  - A simple college website using web technologies
- Supervised Contrastive Learning for diabetic retinopathy severity grading (Skills: Pytorch, Python, Numpy, Pandas, Seaborn, Matplotlib) Github Link
- Complex Feature Extraction for Covid19 classification (Skills: ML, Scikit-learn) Github Link

RESEARCH GRANT & AWARD

- University Grants Commission, Bangladesh and RUET (Grant No: DRE/7/RUET/489(31)/PRO/2020-21/20)

SELECTED PUBLICATIONS (Google Scholar Link)

- Computers in Biology and Medicine: Applying supervised **contrastive learning** for the detection of diabetic retinopathy and its severity levels from fundus images (First Author, Q1 Journal)
- Sensors: Explainable **Transformer-Based** Deep Learning Model for the Detection of Malaria Parasites from Blood Cell Images (First Author, Q1 Journal)
- Expert Systems with Applications: Complex features extraction with deep learning model for the detection of COVID19 from CT scan images using **ensemble-based** machine learning approach (First Author, Q1 Journal)

** More **16+** are in Google Scholar