Md Rifatul Islam

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ACADEMIC CREDENTIALS

January 2025 – Present
Doctor of Philosophy in Electrical and Computer Engineering
The University of Texas at El Paso (UTEP)

February 2017 – July 2022
Bachelor of Science in Mechatronics and Industrial Engineering
Chittagong University of Engineering & Technology (CUET)

CGPA: 3.65 on a scale of 4.00 (3.83 in the last four terms)
Undergraduate Thesis: A Comparative Approach to Alleviating the Prevalence of Diabetes Mellitus Using Machine Learning

- Analyzed the risk factors of diabetes in Bangladesh
- Developed and compared 14 ML models to predict the disease in the early stage

RESEARCH & PUBLICATIONS

- **M. R. Islam**, S. Banik, K. N. Rahman, and M. M. Rahman, A comparative approach to alleviating the prevalence of diabetes mellitus using machine learning, *Computer Methods and Programs in Biomedicine Update* (2023), doi: https://doi.org/10.1016/j.cmpbup.2023.100113.
- **M. R. Islam**, S. K. Islam and M. M. Hossain Shuvo, "Explainable AI for Hypoglycemia Detection in Type 1 Diabetes Using Single-Lead ECG Signals," 2025 IEEE Medical Measurements & Applications (MeMeA), Chania, Greece, 2025, pp. 1-6, doi: 10.1109/MeMeA65319.2025.11067978.

WORK EXPERIENCE

January 16, 2025 – Present
Ph.D. Research Associate
Department of Electrical and Computer Engineering, UTEP

- Biomedical Signal Processing and Image Analysis
- Applied Machine Learning
- Edge Intelligence

November 01, 2023 – November 30, 2024
Machine Learning Engineer
Polyfins Technology Inc., Dallas, Texas, United States

- Performed research initiatives to identify innovative AI solutions and techniques for addressing challenges in dermatology
- Worked on Vision-Language models and prompt engineering
- Developed a state-of-the-art model for the classification of 12 skin diseases and deployed on mobile application named ‘Tibot’

INTERNSHIP & INDUSTRIAL ATTACHMENT

July 16, 2023 – October 16, 2023
Machine Learning Engineer (Intern)
Polyfins Technology Inc., Dallas, Texas, United States

- Performed tasks including time series analysis, clustering, feature extraction, biomedical image classification, and semantic segmentation

May 10, 2022 – May 23, 2022
Industrial Attachment Trainee
Unipolar Automation Technologies, Dhaka, Bangladesh

- Learned about hardware-software integration and controlling an automated industry using PLC, HMI, and CCW Software

TECHNICAL SKILLS

Programming Languages: Python | MATLAB | C | SQL | JavaScript **Documentation**: LaTeX | MS Office
Libraries/Frameworks: Scikit-learn | Pandas | OpenCV | Lightly SSL | PyTorch | TensorFlow | LangChain
Embedded Systems and Automation: Arduino | Raspberry Pi | Proteus | Connected Components Workbench
Development Tools: Google Colab | VS Code | Google Cloud Platform | Docker **Version Control:** Git
Web/APIs Development: HTML | CSS | React | FastAPI **Design:** AutoCAD | SolidWorks

PROJECTS

- Voice controlled robotic vehicle
- Gastrointestinal disease detection and semantic segmentation
- Automatic water valve control
- Automated inventory monitoring system
- Simulation of automated workpiece sorting system using Factory I/O
- Machine learning approach for predicting backorders in supply chain management
- Zero-shot object detection and segmentation using vision-language model
- American sign language detection using convolutional neural network

TRAINING & ONLINE COURSE CERTIFICATIONS

- Completed a 32-hour training on 'Foundations in Digital Forensics with Magnet Axiom Forensic Tool' in association with Bangladesh Hi-Tech Park Authority, Contessa Solutions & Consultants Limited in 2019
- Completed a hands-on course on Internet of Things from October 2019 to February 2020, arranged by Planeter Ltd.
- DeepLearning.AI TensorFlow Developer Specialization – Coursera

STANDARDIZED TEST SCORE

- **IELTS:** Overall: 7 | Listening: 7.5 | Reading: 6.5 | Writing: 6.5 | Speaking: 6.5

LANGUAGE PROFICIENCY

- Bengali (Native Language)
- English

EXTRACURRICULAR ACTIVITIES

- **Lab Director | Robo Mechatronics Association, CUET** (2021-2022)
  - Worked in arranging various workshops, seminars, and competitions during the event 'Tech Day 2021'
- **Treasurer | IEOM CUET Student Chapter** (2021-2022)
  - Assisted the team in organizing Inter-University Scientific Poster Presentation Competition
  - Awarded with "IEOM Outstanding Student Chapter Award-GOLD" during our tenure
- **Member | LIGHT, a non-profit organization** (2013-2014)
  - Collected funds and ensured education of some underprivileged children

AWARDS & HONORS

- **Texas Instruments Foundation Endowed Scholarship** (2024-2025)
- **Technical Scholarship** (2017-2022)
  Awarded based on merits by Chittagong University of Engineering & Technology
- **Runner-up | Formula 1 RC Race Competition** (2018)
  Organized by Andromeda Space & Robotics Research Organization in CUET

REFERENCES

Md Maruf Hossain Shuvo
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The University of Texas at El Paso
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