

NOOR-E-SADMAN

RESEARCHER – ADJUNCT LECTURER

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EDUCATION

INDEPENDENT UNIVERSITY, BANGLADESH

Dhaka, Bangladesh

B.Sc. in Computer Science and Engineering

May 2017 – April 2021

CGPA: 3.26 / 4.00 (Average GPA: 3.82 / 4.00 in Year 4)

Major: Computer Science and Engineering, Minor: Population and Environment

Thesis Title: “Cloud Driven IoT based Big Data Solution: Air Quality Monitoring System and Predictive Analysis of Satellite Data using Machine Learning.”, Supervisor: Dr. Mahady Hasan

RESEARCH INTEREST

As a prospective PhD candidate with a background in Computer Science and Engineering and a minor in Population and Environment, my research interests merge technology with studies on the environment and population. I have specialized knowledge in IoT and embedded systems, focusing on environmental monitoring. I am also skilled in machine learning, artificial intelligence, and geospatial data analysis, particularly in using cloud based IoT for big data analytics. My goal is to use these skills to gain better insights into environmental and population dynamics.

RESEARCH EXPERIENCE

FAB LAB IUB

Dhaka, Bangladesh

Graduate Researcher, Computer Science and Engineering

January 2022 – Present

- Currently, developing an IoT and ML-based CFD analysis project to improve classroom air quality, enhancing environmental health in educational settings.
 - Directed the hardware design for FabSat Team, achieving the first-ever global finalist status from Bangladesh in the CanSat Competition 2023, showcasing technical leadership and innovation.
 - Actively preparing with the FabMarine Team for the SAUVC 2024 competition, demonstrating skills in underwater robotics and marine technology.
 - Involved in multiple projects integrating Cloud Computing, Web Application, ML, AI, and IoT, highlighting a strong capability in applying advanced technologies for practical solutions.
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FAB LAB DHAKA UNIVERSITY

Dhaka, Bangladesh

Researcher

December 2021 – June 2022

- Served as the Project Manager and Researcher for the University Grant Commission funded FabLab DU project, "Design and Development of a Digital Stethoscope for Detecting Diseases".
 - Led a multidisciplinary team to successfully design and develop a novel digital stethoscope, overseeing planning, budgeting, and reporting. My coordination with stakeholders and implementation of advanced technologies significantly contributed to positioning FabLab DU as a leader in medical innovation.
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FAB LAB IUB

Dhaka, Bangladesh

Fabber (Undergraduate Student Researcher)

December 2017 – April 2021

- Developed a thesis project contributing to environmental monitoring and predictive analytics, which enhanced my knowledge in geospatial data, predictive analysis, and big data management, contributing significantly to the field of environmental monitoring and analytics.

- Researching into the specifics of image and patterns recognition of lung cancer through Python programming enhanced my ability to apply scientific and mathematical theory to both quantitative and qualitative data.
- Designed an IoT-based system for fire prevention and worker health monitoring, emphasizing safety and health in the workplace.

PROFESSIONAL EXPERIENCE

INDEPENDENT UNIVERSITY, BANGLADESH

Adjunct Lecturer, Computer Science and Engineering

Dhaka, Bangladesh

January 2022 – Present

- Successfully conducted and managed lab classes for courses such as Circuit Analysis, Algorithms, Database Management Systems, and Electronics, enhancing student engagement and academic performance.
- Meticulously prepared Outcome-Based Education course outlines and reports, aligning learning with objectives, leading to improved course delivery and student outcomes.
- Assisted in the accreditation process through preparing Self-Assessment Report of the department, contributing to the university's academic recognition.
- Led the IUB TechFest organization, fostering student innovation and elevating the university's technological profile.
- Prepared and compiled research grant documents, securing funding and advancing the university's research initiatives.

TECHTRIOZ SOLUTIONS

Junior Hardware Design Engineer

Dhaka, Bangladesh

September 2021 – November 2021

- Led the creation and PCB design of advanced IoT and embedded system devices, enhancing product quality and technological innovation at TechTrioZ Solutions.
- Efficiently managed procurement, budgeting, and product design, fostering effective teamwork and leading to cost-effective, innovative product development.

GRANTS

- Special Research Grant, Ministry of Science and Technology in Bangladesh; Dhaka, Bangladesh
PI: Dr. Mahady Hasan; Co-PI: Mr. Saquib Ahmad Khan
Funding for January 2024 – January 2026: \$13.4 K

PUBLICATIONS

- N. -E. Sadman, N. Islam, T. H. Zihan, M. M. Kabir Peyal and M. Hasan, "An Automated Cost-effective IoT-based Industrial Fire Prevention and Health Surveillance System," 2023 IEEE 13th International Conference on Consumer Electronics - Berlin (ICCE-Berlin), Berlin, Germany, 2023, pp. 1-6, doi: 10.1109/ICCE-Berlin58801.2023.10375653.
- N. Islam, N. -E. Sadman, M. Islam, and M. Hasan, "Air Quality Monitoring of Bangladesh (AQM): Data Driven Analysis System," in Proc. 17th Int. Conf. Software Technologies - ICSOFT, 2022, pp. 205-212. doi: 10.5220/0011306300003266.

ACHIEVEMENTS

- 1st prize on Robo Race – IUB IEEE Day 2019
- 1st and 2nd prize on Car Race - International Robo Fest ICASERT 2019
- 1st prize on Robo Race – IUB IEEE Day 2018
- 3rd prize on Line Following Robot - Cybernauts 2017
- CanSat Competition 2023 First Ever Global Finalist from Bangladesh
- Participated in SDG Hackathon 2019 (Top 10)

LINGUISTIC PROFICIENCY AND TECHNICAL SKILLS

- Language: Bengali (Native Language), English (Fluent)
- Programming: C/C++, Python, C#, Java, HTML, CSS, Node.js, MySQL, NoSQL, PHP
- Embedded System: PCB Designing, 1-Wire, I2C, SPI, and UART Protocols, MQTT Protocol, Microcontroller Programming, Sensor and Actuator, Wireless Protocols, REST APIs, Node-Red.
- ML & AI Tools: NumPy, Pandas, Scikit-learn, SciPy, TensorFlow, Keras, OpenCV, Matplotlib, Seaborn
- Other Tools: LaTeX, Git, Hadoop, Azure, AWS, 3D Designing, Laser Cutting, Corel Draw.

CERTIFICATIONS

- Sensor Manufacturing and Process Control, University of Colorado Boulder – Coursera, 2020
- Sensors And Sensor Circuit Design, University of Colorado Boulder – Coursera, 2020
- AI for Medical Diagnosis, DeepLearning.AI, 2020
- AI for Medical Prognosis, DeepLearning.AI, 2020
- AI for Medical Treatment, DeepLearning.AI, 2020
- Structuring Machine Learning Projects, DeepLearning.AI, 2020
- Improving Deep Neural Networks: Hyperparameter Tuning, Regularization and Optimization, DeepLearning.AI, 2020
- Convolutional Neural Networks, DeepLearning.AI, 2020
- Natural Language Processing with Classification and Vector Spaces, DeepLearning.AI, 2020
- Sequence Models, DeepLearning.AI, 2020
- Neural Networks and Deep Learning, DeepLearning.AI, 2020
- Cybersecurity and the Internet of Things, University System of Georgia – Coursera, 2020
- Programming for the Internet of Things Project, University of California, Irvine – Coursera, 2020

EXTRACURRICULAR ACTIVITIES

- **BANGLADESH PHYSICS OLYMPIAD**
Organizer, 2019
- **IEEE COMPUTER SOCIETY STUDENT BRANCH CHAPTER IUB**
Logistics Coordinator, 2018 – 2019
- **NASA SPACE APPS CHALLENGE**
Organizer, 2018
- **IEEE**
Student Member, 2017

REFERENCES

Dr. Mahady Hasan, Associate Professor
Dept. of Computer Science & Engineering
Independent University, Bangladesh (IUB)
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Dr. Ferdows Zahid, Associate Professor
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Dr. Mohammad Shafiul Alam, Professor
Dept. of Electrical and Electronic Engineering
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Dr. Farruk Ahmed, Professor
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Independent University, Bangladesh (IUB)
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