

Ariful Islam

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BIOGRAPHY

Ariful Islam is an Assistant Professor in the Department of Biomedical Engineering at Islamic University, Kushtia, Bangladesh. He has completed his M.Sc. (2016) and B.Sc. (2014) in Applied Physics, Electronics and Communication Engineering from the Islamic university, Bangladesh. His academic and research involvement spans multiple laboratories, including **Basic Biomedical Engineering Labs, Biomedical Instrumentation and Diagnosis, Transducer and Sensors, Biophysics, Bioinformatics, Biomedical Signal Processing, Medical Imaging, AI in Healthcare**. He has contributed to several peer-reviewed publications and serves as an Associate Editor for reputed international journals, reflecting his dedication to advancing biomedical engineering education and research in Bangladesh.

Mr. Islam has experience in teaching at undergraduate and interdisciplinary academic levels, with expertise in course instruction, laboratory supervision, curriculum delivery, and student mentoring. He has actively participated in academic seminars, workshops, and research conferences as a moderator and presenter, reflecting his commitment to academic excellence, professional development, and scholarly engagement.

RESEARCH INTERESTS

My research interests include Biomedical Signal Processing (ECG, EEG, and EMG), Biomedical Instrumentation and Diagnostic Systems, Biosensors, Biophysics, Bioinformatics, and Artificial Intelligence & Machine Learning in Healthcare.

ACADEMIC BACKGROUND

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| • M.Sc., Islamic University, Bangladesh
<i>Applied Physics, Electronics and Communication Engineering; GPA: 3.82 (Out of 4.00)</i> | Kushtia 7003, Bangladesh
2013 - 2016 |
| • B.Sc., Islamic University, Bangladesh
<i>Applied Physics, Electronics and Communication Engineering; GPA: 3.66 (Out of 4.00)</i> | Kushtia 7003, Bangladesh
2008 - 2012 |
| • H.S.C., Ullapara Science College
<i>Science; GPA: 5.00 (Out of 5.00)</i> | Sirajganj, Bangladesh
2007 |
| • S.S.C., Dhubil Ayesha Fazlar High School
<i>Science; GPA: 4.75 (Out of 5.00)</i> | Sirajganj, Bangladesh
2005 |

RESEARCH EXPERIENCES

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| • Biomedical Instrumentation and Diagnostic Laboratory
<i>Principal Investigator</i> | Islamic University, Kushtia-7003, Bangladesh |
| ◦ Research Areas: Biomedical Instrumentation and Measurement, Electrical Fundamentals, Biosignal Recording and Processing, and Nuclear Medicine. | |
| • Basic Biomedical Engineering Laboratory
<i>Principal Investigator</i> | Islamic University, Kushtia-7003, Bangladesh |
| ◦ Research Areas: Basic Physiological Parameters detection and monitoring, including BP, BMI, P_{O_2} , P_{CO_2} , pH, and glucose level. | |
| • Transducer and Sensors Laboratory
<i>Principal Investigator</i> | Islamic University, Kushtia-7003, Bangladesh |
| ◦ Research Areas: Designing and monitoring various biosensing elements in non-invasive ways; biosignal capturing, including ECG, EEG, and EMG. | |
| • Rehabilitation Engineering Laboratory
<i>Principal Investigator</i> | Islamic University, Kushtia-7003, Bangladesh |
| ◦ Research Areas: Prototype designing for Prosthetics and Orthotics, disability detection using ADL, gait analysis, BCI system, assistive tools and technology for individuals with disabilities. | |
| • Bioinformatics Laboratory
<i>Principal Investigator</i> | Islamic University, Kushtia-7003, Bangladesh |
| ◦ Research Areas: Drug Designing, Biomarker Discovery, In-silico Diagnosis and Treatment. | |
| • Bioimaging Laboratory
<i>Assistant Investigator</i> | Islamic University, Kushtia-7003, Bangladesh |
| ◦ Principal Investigator: Dr. Md. Khairul Islam, Associate Professor, Dept.of Biomedical Engineering. | |
| ◦ Research Area: Medical Imaging, Computer Vision, and AI in Healthcare. | |

THESIS WORK

- **Thesis (M.Sc.):** Having the title "*Evaluation of Subsurface Formations for Groundwater Potential in the Hatots Haripur Union, Kushtia Sadar Upazila, Bangladesh Using Geo-Electrical Resistivity Method*". (Def.: March 2016)
Supervisor: Dr. Md. Nozibul Haque, Ph.D., Department of Applied Physics, Electronics and Communication Engineering, Islamic University, Kushtia, Bangladesh.

PUBLICATIONS

Journal Articles and Conference Papers

- **Ariful Islam**, Md Emamul Hossen, "CADT-Net: A Channel Attention and ASPP-Guided CNN-Transformer Framework with Explainable AI for Multi-Class Lung Disease Diagnosis" *Accepted for upcoming presentation at the 3rd IEEE COMPAS Conference*, on October 09-10, 2026.
- **Ariful Islam**, Tahmid Islam Akib, "Integrated Bioinformatics and Machine Learning Analysis Identifies MT1F as a Potential Diagnostic Biomarker and Therapeutic Target in Breast Cancer" *Atlantic Journal of Life Sciences*, 2026.
DOI: <https://doi.org/10.71005/458kdy25> [Original Article](#)
- Md. Rabiul Islam1, **Ariful Islam**, "Adaptive synthetic-based arrhythmia classification using machine learning techniques" *IAES International Journal of Artificial Intelligence*, 2026.
- Md. Rabiul Islam1, **Ariful Islam**, "PSO-ML: Heartbeat Classifier Using Particle Swarm Optimization And Machine Learning Techniques," *IOSR Journal of Dental and Medical Sciences*, 2023.
- **Ariful Islam**, "The Recording and Evaluation of an ECG Signal with Proper Electrode Placement and Lead Configurations," *Journal of Clinical Trials and Regulations*, 2021.
- Md. Shahin Ali, **Ariful Islam**, "Alzheimer's Disease Detection Using m-Random Forest Algorithm with Optimum Feature Extraction," *IEEE*, 2021. [DOI:]
- Abdullah Al Zubaer, **Ariful Islam**, "Design and Development of Android Application "Sudoku" for Mobile Systems on Android Platform," *International Research Journal of Modernization in Engineering Technology and Science*, 2020.
- **Ariful Islam**, "Performance Analysis of F-OFDM, FBMC and UFMC Modulation Techniques in 5G Wireless Network Based on Deep Learning," *Journal of Network Security and Computer Networks*, 2020.
- Md. Mehedi Hasan Naim, **Ariful Islam**, "Design and Development of Bluetooth Controlled Car Using Bluetooth Module HC-05," *Global Scientific Journals*, 2020.

TEACHING EXPERIENCE

- **Department of Biomedical Engineering** Islamic University, Kushtia-7003, Bangladesh
Assistant Professor July 2021 - Present
 - **Responsibilities:** Conducting theoretical and practical classes for both undergraduate and graduate (M.Sc.) in biomedical engineering courses. Responsible for course design, lecture delivery, assessment, and mentoring. Class Volume: Approximately 50 students.
- **Department of Biomedical Engineering** Islamic University, Kushtia-7003, Bangladesh
Lecturer July 2018 - July 2021
 - **Focus:** Taught introductory courses in Biomedical Engineering, mentoring students in research, projects and technical problem solving relevant to healthcare applications.
- **Department of Geography and Environment** Islamic University, Kushtia-7003, Bangladesh
Guest Teacher February 2022 - March 2024
 - **Course Area:** Delivered lectures on physics in geography for undergraduate students.
- **Secondary Education Quality Assurance Enhancement Program** Ministry of Education, Bangladesh
Assistant Class Teacher 2016 - 2017
 - **About:** Contributed to secondary education quality enhancement through classroom assistance and academic guidance under SEQAEP, a project by the Ministry of Education, funded by the World Bank.

RESEARCH GRANTS & AWARDS

- **Awarded a competitive research grant [650000 BDT]** Under the Special Allocation for Ministry of Science and Technology (MoST) for the fiscal year 2025-2026.
- **Awarded a competitive research grant [500000 BDT]** Under the Special Allocation for Ministry of Science and Technology (MoST) for the fiscal year 2024-2025.

TECHNICAL SKILLS

- **Languages:** Python, MATLAB, C, C++
- **Tools:** Microsoft Office, LaTeX, SPSS, Discovery Studio, PyRx, ArcView GIS, IPI2Win, Canva
- **Leadership:** Project Management, Time Management, Writing, Public Speaking, Communication
- **Others:** Table Tennis, Football, Strong Communication Capability with BANGLA & ENGLISH

ACADEMIC & PROFESSIONAL SERVICE

- **11th Annual Conference of Bangladesh Medical Physics Society** - Poster Presentation: “Machine Learning Based Risk Factors Prediction and In-Silico Exploration of Withania Somnifera Leaf Extracted Nanocomposites for Breast Cancer Inhibition,” January 2024
- **PhD Seminar for Md. Khairul Islam, Dept. of Biomedical Engineering, IU, Bangladesh** - Moderator: “Enhancing Lung Diseases Detection and Classification using Hybrid DCNN-VIT-GRU Model: A Deep Learning Approach,” January 2024
- **Workshop, Centre for Smart Village and Smart City Studies (CSVSCS)** - Moderator: “Smart Village and Smart City: Perspective Digital Bangladesh,” April 2022
- **A Reviewer of renowned journal, Phytomedicine Plus**
Publisher: Elsevier
- **An Associate Editor** of a peer-review journal, **Australian Journal of Engineering and Innovative Technology (AJEIT)**
Publisher: Universe Publishing Group (Universe PG)
- **Active Participation in departmental Activities**, Including the Member of Curriculum Committee, Member of Exam-Committee, Evaluator of Internal and External Courses, Project/Thesis Dissertations.

MEMBERSHIP IN SCIENTIFIC SOCIETIES

- **Ministry of Science and Technology, Government of Bangladesh** - Researcher, ID: R2422302773, 2024-Present
- **Bangladesh Computer Society** - Associate Member
- **Scientific Foundation for Cancer Research** Kushtia-7000, Bangladesh
Founding Member 2021 - Present
A non-profit scientific organization dedicated to promoting cancer research and public health awareness, including blood donation, food and nutrition, environmental pollutions, through collaborative biomedical studies and community engagement.

VOLUNTEERING ACTIVITIES

- **Administrative Capabilities at Islamic University, Bangladesh** 2019 - 2021
Assistant Proctor
 - **Functions and Responsibilities:** A non-profit scientific organization dedicated to promoting cancer research and public health awareness, including blood donation, food and nutrition, environmental pollution, through collaborative biomedical studies and community engagement.
- **Sirajganj Student Welfare Association at Islamic University, Bangladesh** 2019 - Present
Convenor and Advisor
 - **About:** A non-profit and non-political organization dedicated to promoting assistive tasks and cultural activities through collaborative Sirajganj community engagement.