

MD. ABU SAYED

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 Personal Website  Professional Profile  Web of Science  ORCID  GitHub

RESEARCH INTEREST

My research focuses on medical imaging and signal processing, with a strong emphasis on leveraging machine learning (ML) to enhance medical diagnosis and prognosis. I work on advancing next-generation medical imaging modalities (including MRI, CT, PET, X-ray, Ultrasound, and Histopathology), integrating multi-omics data with ML, and developing predictive models for disease risk assessment. In addition, I am involved in the design of human-machine interfaces (HMI) for prosthetic devices and the application of IoT technologies in healthcare systems.

EDUCATION

04/2023 – 11/2024 Dhaka, Bangladesh	Masters of Science in Biomedical Physics and Technology <i>University of Dhaka</i>  CGPA- 4.00 out of 4.00 (Ranked 1st out of 20) Thesis: Lung Cancer Diagnosis from Computed Tomography Image Using Automated Region of Interest Cropping, Classification and Segmentation Architectures. (Grade: A+)
11/2017 – 02/2023 Khulna, Bangladesh	Bachelor of Science in Biomedical Engineering <i>Khulna University of Engineering & Technology (KUET)</i>  CGPA- 3.55 out of 4.00 (CGPA 3.82 over the last 5 semester) Thesis: Automatic Detection, Classification, and Segmentation of Sagittal MR Images for Diagnosing Prolapsed Lumbar Intervertebral Disc. (Grade: A+)
2015 – 2016 Sirajganj, Bangladesh	Higher Secondary Certificate (HSC) in Science <i>Ullapara Science College</i> GPA- 5.00 out of 5.00
2013 – 2014 Sirajganj, Bangladesh	Secondary School Certificate (SSC) in Science <i>Kaliakoir Adarsha High School</i> GAP- 5.00 out of 5.00

PROFESSIONAL ACTIVITIES

11/2025 – Present Kushtia, Bangladesh	Lecturer in Biomedical Engineering  <i>Islamic University, Kushtia-7003, Bangladesh</i>
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RESEARCH EXPERIENCE

07/2025 – 10/2025 Dhaka, Bangladesh	Research Fellow under International Science Programme (ISP) of Uppsala University, Sweden <i>Biomedical Physics & Technology (BMPT), University of Dhaka</i>  Role- I am engaged in both <i>independent and collaborative research</i> activities. I design and implement biomedical research projects involving medical images and biosignals.
01/2025 – 06/2025 Dhaka, Bangladesh	Graduate Research Assistant (GRA) <i>Biomedical Physics & Technology (BMPT), University of Dhaka</i> Role- I contributed to multiple research projects, including developing methods for CT-to-PET and PET-to-CT transitions, as well as predictive modeling for patient discharge outcomes and length of stay in critical care units.
10/2023 – 11/2024 Dhaka, Bangladesh	National Science and Technology (NST) Fellow <i>Ministry of Science and Technology (MoST)</i>  Research Topic- Lung Cancer Diagnosis from Computed Tomography Image Using Automated Region of Interest Cropping, Classification and Segmentation Architectures.

TOOLS & SKILLS

Programming Languages

Python, MATLAB, R and C++



Deep Learning Frameworks

Pytorch, TensorFlow, and Keras



Analysis Tools

IBM SPSS, EEGlab, and Biopac Student Lab



Simulation and Design Tools

COMSOL MPH, SolidWorks, Simulink and Proteus



LANGUAGES

Bangla — Native/Bilingual

English — Fluent

RELEVANT GRADUATE COURSES

Biomedical Image and Signal Processing, X-ray and Ultrasound Imaging, Magnetic and Nuclear Imaging, Bio-optics (Optical Imaging), and Brain and Neuroengineering, Bioinformatics, Numerical Methods and Statistics, Linear Algebra, Microcontroller and Computer Programming.

AWARDS AND HONORS

2025	Best Oral Presenter  <i>International Conference on Physics in Medicine (ICPM)-2025</i>
2025	Khandakar Lufti Rabbani- Nazmunnesa Memorial Trust Scholarship  <i>Provided by Faculty of Science, University of Dhaka</i>
2022	Dean's Merit List Award (2 times)  <i>Issued by Faculty of Electrical and Electronic Engineering, KUET</i>
2021	University Scholarship (4 times) <i>Provided by Faculty of Electrical and Electronic Engineering, KUET</i>

PEER-REVIEWED JOURNALS

05/02/2025	Automated lumbar intervertebral disc identification and herniation detection in MR images using cascade CNN architecture.  <i>Informatics in Medicine Unlocked</i> Md Abu Sayed , Ashiqur Rahman, Sadman Mohammad Nasif, Sudipto Halder, Akram Hossain, Hasan Ahmed, Muhammad Abdul Kadir*
01/01/2025	Automatic detection, classification, and segmentation of sagittal MR images for diagnosing prolapsed lumbar intervertebral disc.  <i>Journal of Scientific Reports</i> Md. Abu Sayed , G.M. Mahmudur Rahman*, Md. Sherajul Islam*, Md. Alimul Islam, Jeongwon Park, Hasan Ahmed, Akram Hossain, Rahat Shahrior <u><i>N.B-'*' indicates corresponding author, '#' indicates shared first author</i></u>

PEER REVIEWED CONFERENCES PROCEEDINGS

04/2026 Chittangong, Bangladesh	Development of a Cost-Effective Myoelectric Prosthetic Hand with Embedded TinyML for Real-Time Hand Function Rehabilitation  <i>2026 IEEE 2nd International Conference on Quantum Photonics, Artificial Intelligence & Networking</i> #Md. Alimul Islam, # Md. Abu Sayed* , Muhammad Muinul Islam, Muhammad Abdul Kadir.
09/2025 Dhaka, Bangladesh	A Deep Learning and IoT-Enabled Smart Healthcare with Hospital Information System Integration for Real-Time Patient Monitoring  <i>4th IEEE International Conference on Robotics, Automation, Artificial-intelligence and Internet-of-Things</i> #Akram Hossain, # Md. Abu Sayed* , Md Jubaer Rahman Tayef ('#' shared first author)

08/2025 Dhaka, Bangladesh	Secure Remote Patient Monitoring in Smart Wards through Blockchain and Encryption Techniques: A Functional Prototype ↗ <i>6th IEEE International Conference on Telecommunications and Photonics (ICTP) 2025</i> Md. Abu Sayed* , Md. Alimul Islam, Hasan Ahmed, Md. Imran Hossain, Muhammad Abdul Kadir
08/2025 Dhaka, Bangladesh	Mechanical Behavior of Hybrid Glass-Jute Fiber Composite Sheet in Honeycomb Core Sandwich Panels ↗ <i>15th International Conference on Mechanical Engineering</i> Shafat Hasan, Hasan Ahmed*, Md. Abu Sayed , Md. Nahidur Rahman, Wahidur Rahman Sajal, Md. Ibrahim Al Imran, Taufir Ahmed Seam

BOOK CHAPTER

02/2025 Sydney, Australia	Reconstruction Algorithm for Improving Resolution in Bioelectrical Impedance Based Pigeon Hole Imaging ↗ <i>IUPESM World Congress on Medical Physics and Biomedical Engineering, 2025</i> Muhammad Abdul Kadir*, Frijia Mortuza, Hridoy Chandra Barman, Chitra Roy, Md. Abu Sayed & Md. Ibrahim Al Imran
02/2025 Sydney, Australia	A Deep Learning Pipeline for Predicting Length of Stay and Patient Discharge Outcomes in Critical Care Units ↗ <i>IUPESM World Congress on Medical Physics and Biomedical Engineering, 2025</i> Md. Abu Sayed , Md. Alimul Islam, Ashiqur Rahman, Nahian Shabab & Muhammad Abdul Kadir*

CONFERENCE ABSTRACT

09/2025 Dhaka, Bangladesh	Enhancing Lung Nodule Detection and Classification in PET-CT Images with a Tumor Description-Guided Deep Learning Approach <i>12th International Conference on Physics in Medicine (ICPM)</i> Md. Abu Sayed* , Ayesha Tun Nashrah, Md. Nahid Hossain, Muhammad Abdul Kadir
09/2025 Dhaka, Bangladesh	Neurophysiological and Experiential Insights from Pranayama: A Pilot EEG Study with OpenBCI <i>12th International Conference on Physics in Medicine (ICPM)</i> Hasan Mehdi*, Md. Abu Sayed , Omar Faruk, Md. Shohag Mia, Nur-E-Alam Siddiquee, Md. Nahid Hossain, Sanchoy Chandra Biswasarma, Md. Jashim Uddin, Muhtasim Kadir, Sanjida Islam

EXTRA-CURRICULAR ACTIVITIES

09/2025 – Present	IEEE ACCESS ↗ <i>Reviewer</i>
10/2025 – 10/2025 Dhaka, Bangladesh	12th International Conference on Physics in Medicine (ICPM) <i>Volunteer</i>

REFERENCES

Dr. Md. Khairul Islam [↗](#) , Associate Professor and Chairman,
Department of Biomedical Engineering, Islamic University, Kushtia-7003, Bangladesh.
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Dr. Muhammad Abdul Kadir [↗](#) , Professor and Chairman,
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