Biography

Amit Dutta Roy
Lecturer
Research Area IoT in Telemedicine/Healthcare Biomedical Signal Processing Biomedical Image Processing Machine Learning

Amit Dutta Roy received a B. Sc. Eng. degree in Biomedical Engineering (BME) from Khulna University of Engineering & Technology (KUET) scoring summa-cum-laude CGPA of **3.98 (out of 4.00)** and ranked **1st** in his class in 2020. In his third year, he completed his undergraduate project (BME 3200) titled "An Approach Towards the Design and Implementation of a Trainer Board on Automatic External Defibrillator (AED)" under the guidance of Mr. Rushdi Zahid Rusho (Assistant Professor, Department of BME, KUET). In his fourth year, he attended various technical seminars and national/international conferences to better grasp the field of academic research and completed his undergraduate thesis (BME 4000) titled "Classification of Epileptic Seizure Stages from EEG Using Convolutional Neural Network" under the supervision of Dr. Muhammad Muinul Islam (Professor, Department of BME, KUET), the then Head of the Department of BME.

Besides academic projects and thesis, he has participated in and secured recognition from the following national events:

University Day 2018: Winner in Project Showcasing

- Project Title: Smart Infant Incubator [Team: Bio-enigmatologists]

Organized by KUET (22 September 2018)

Esonance 2018: 1st Runner-Up in Project Showcasing

- Project Title: Smart Infant Incubator [Team: Bio-enigmatologists]

Organized by the Department of Electrical and Electronic Engineering, Islamic University of Technology (IUT) (19 October 2018)

Textile Fest 2019: Winner in Project Showcasing

- Project Title: Smart Infant Incubator [Team: Bio-enigmatologists]

Organized jointly by the Department of Textile Engineering, KUET, and KUET Textile Club (22-23 March 2019)

Ignition 2019: 1st Runner-Up in Project Showcasing

- Project Title: Smart Infant Incubator [Team: Bio-enigmatologists]

Organized by Department of Mechanical Engineering, KUET (27-28 September 2019)

He is currently working as a Lecturer in the Department of BME, KUET (February 2022 - Present). Previously, he was a part-time Lecturer in this department (January 2021- January 2022). He is also pursuing his M. Sc. in BME from this university.

Education

Master of Science in Biomedical Engineering
   Khulna University of Engineering & Technology (KUET),Bangladesh()
Bachelor of Science in Biomedical Engineering
   Khulna University of Engineering & Technology (KUET),Bangladesh(2016-2020)
   Thesis Title: Classification of Epileptic Seizure Stages from EEG Using Convolutional Neural Network
Higher Secondary Certificate (HSC)
   Notre Dame College (NDC),Bangladesh(2015)Group: Science,
Secondary School Certificate (SSC)
   Millennium Scholastic School & College (MSSC), Bogura,Bangladesh(2013)Group: Science,
Junior School Certificate (JSC)
   Millennium Scholastic School & College (MSSC), Bogura,Bangladesh(2010)

Service Records

- *From 30-11--0001 to 30-11--0001*

Khulna University of Engineering & Technology (KUET)

   1st February 2022 to Present
Organization Type: Public University
Location: Khulna, Bangladesh
Position: **Lecturer**
Department: Biomedical Engineering (BME)

- *From 30-11--0001 to 30-11--0001*

Khulna University of Engineering & Technology (KUET)

5th January 2021 to 31st January 2022
Organization Type: Public University
Location: Khulna, Bangladesh
Position: **Lecturer (Part-Time)**
Department: Biomedical Engineering (BME)

Research Interest

IoT in Telemedicine/Healthcare

Biomedical Signal Processing

Biomedical Image Processing

Machine Learning

Publication

Books

Journals

4. T. Islam, R. Islam, M. Basak, A. D. Roy, M. A. ArmanS. Paul, O. Shandra, and S. R. Ali, "Performance investigation of epilepsy detection from noisy EEG signals using base-2-meta stacking classifier," *scientific reports* , Nature Portfolio, DOI:https://doi.org/10.1038/s41598-024-61338-2, 2024 .

3. D. S. R. S. Kumar, N. Elango, G. D. Selvaraju, P. A. Matthew, S. PalanisamyH. Cho, Khattaf, A. A. Hatamleh, A. D. Roy, "Mycosynthesis of Zinc Oxide Nanoparticles Coated with Silver using Ganoderma lucidum (Curtis) P. Karst and Its Evaluation of In Vitro Antidiabetic and Anticancer Potential," *Journal of Nanomaterials* , Hindawi, DOI:https://doi.org/10.1155/2022/2798532, 2022 .

2. T. Islam, M. Basak, R. Islamand A. D. Roy, "Investigating population-specific epilepsy detection from noisy EEG signals using deep-learning models," *Heliyon* , Elsevier BV, DOI:https://doi.org/10.1016/j.heliyon.2023.e22208, 2023 .

1. F. R. Mashrur, A. D. Roy, A. P. Chhoan, S. Sarker, A. SahaS. N. Hasanand Saha, "Impact of demographic, environmental, socioeconomic, and government intervention on the spreading of COVID-19," *Clinical Epidemiology and Global Health* , Elsevier BV, DOI:https://doi.org/10.1016/j.cegh.2021.100811, 2021 .

Conference

10. M. M. Islam and A. D. Roy, "PCF-based SPR Sensors' Air-hole Attributed Performance Evaluation for Detection of Breast and Adrenal Gland Cancer," *2024 International Conference on Power, Electrical, Electronics and Industrial Applications (PEEIACON)*, IEEE, 2024 .

9. M. M. Islam and A. D. Roy, "Numerical Analysis on PCF-based SPR Sensors' Air-hole Attributed Performance to Blood Cancer Detection," *2024 6th International Conference on Electrical Engineering and Information & Communication Technology (ICEEICT)*, ISBN:979-8-3503-8577-9, IEEE, 2024 , DOI:10.1109/ICEEICT62016.2024.10534373.

8. T. Ahmed, M. J. Nahar, A. T. Nashrah, A. L. Ashaand A. D. Roy, "Synergistic MPC and Temperature Regulator in Phototherapeutic-Incubator: A Mathematical Modeling Approach," *2023 6th International Conference on Electrical Information and Communication Technology (EICT)*, ISBN:979-8-3503-7083-6, IEEE, Khulna, Bangladesh, 2023 , DOI:10.1109/EICT61409.2023.10427867.

7. F. I. Anik, N. Sakib, A. D. Royand M. H. A. Nahiyan, "Advancing Prosthetic Arm Control: An EMG-Based Grasp Force Estimation Towards Anthropomorphic Movement," *2023 26th International Conference on Computer and Information Technology (ICCIT)*, ISBN:979-8-3503-5901-5, IEEE, Cox's Bazar, Bangladesh, 2023 , pp.4, DOI:10.1109/ICCIT60459.2023.10441565.

6. S. Paul, T. I. Palash, A. D. Royand A. K. Debnath, "Numerical Analysis of Coronary Stent Alloy Materials During Radial Expansion," *2023 International Conference on Electrical, Computer and Communication Engineering (ECCE)*, IEEE, Chittagong, Bangladesh, 2023 , pp.5, DOI:10.1109/ECCE57851.2023.10101627.

5. M. F. Mina, A. D. Roy and M. B. Uddin, "Detection of Ventricular Fibrillation from ECG Signal using Hybrid Scalogram-based Convolutional Neural Network," *1st International Conference on Information and Communication Technology for Development (ICICTD)*, Springer, Khulna, Bangladesh, vol. 1, 2022 , pp.483-495, DOI:10.1007/978-981-19-7528-8_38.

4. T. I. Palash, R. Islam, M. Basakand A. D. Roy, "Automatic Classification of COVID-19 from Chest X-Ray Image using Convolutional Neural Network," *5th International Conference on Electrical Information and Communication Technology (EICT)*, IEEE, Khulna, Bangladesh, 2021 , pp.5, DOI:10.1109/EICT54103.2021.9733477.

3. M. B. Khan, P. S. Saha and A. D. Roy, "Automatic Segmentation and Shape, Texture-based Analysis of Glioma Using Fully Convolutional Network," *2021 International Conference on Automation, Control and Mechatronics for Industry 4.0 (ACMI)*, IEEE, Rajshahi, Bangladesh, 2021 , pp.6, DOI:10.1109/ACMI53878.2021.9528282.

2. A. D. Roy and M. M. Islam, "Detection of Epileptic Seizures from Wavelet Scalogram of EEG Signal Using Transfer Learning with AlexNet Convolutional Neural Network," *2020 23rd International Conference on Computer and Information Technology (ICCIT)*, IEEE, Dhaka, Bangladesh, 19-21 Dec. 2020 , pp.5, DOI:10.1109/ICCIT51783.2020.9392720.

1. F. R. Mashrur, A. D. Roy and D. K. Saha, "Automatic Identification of Arrhythmia from ECG Using AlexNet Convolutional Neural Network," *2019 4th International Conference on Electrical Information and Communication Technology (EICT)*, IEEE, Khulna, Bangladesh, 2019 , pp.5, DOI:10.1109/EICT48899.2019.9068806.