

Arpita. Howlader

Assistant Professor ·

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“Never give up. There is no such thing as ending, just a new beginning. There is always something to be Thankful for.”

Education

DUET (Dhaka University of Engineering and Technology)

M.Sc. ENGG. in Computer Science and Engineering

Oct. 2015 - Dec. 2020

- Dissertation: Wireless Networking and Mobile Computing, IoT, Machine Learning
- Advisor: Dr. Md. Obaidur Rahman.
- **CGPA: 3.67 out of 4.00. (3rd position)**
- Institution Web: www.duet.ac.bd

PSTU (Patuakhali Science and Technology University)

B.Sc. in Computer Science and Engineering

Jan. 2010 - May. 2015

- Dissertation: minimization and measurement of schema complexity based on weighted graph.
- Advisor: Golam Md. Muradul Bashir, Associate Professor,
- **CGPA: 3.637 out of 4.00. (3rd / 50 position)**
- Institution Web: www.pstu.ac.bd
- Got a Dean Award Scholarship for good result

Teaching Experience

Patuakhali Science and Technology University (PSTU)

FACULTY MEMBER (Assistant Professor),

Department of Computer Science and Engineering

July. 2019 - Present

- **Lecture** provide on **Wireless network system, Data Communication and Networking, Optical Fiber Communication, Routing and switching, Cryptography and Network Security, VLSI design, HCI, AI, ML,**
- Develop teaching materials, such as course outline, lesson plan, tutorial, supplementary notes.
- Working effectively in writing research proposals, papers and other publications.
- Appearing and negotiating with well speaking at conferences and seminars.
- Assist educational professionals with projects or research or thesis as assigned.

Dhaka International University (DIU)

FACULTY MEMBER (LECTURER) & RESEARCHER,

Department of Computer Science and Engineering

Aug. 2016 - June. 2019

- Provide Lecture: **AI, Machine Learning, Data Communication and Networking, Cryptography and Network Security, VLSI design, Data Structure, HCI**
- Conduct both lab and theory Classes, Develop teaching materials
- Course coordinator of different batches.
- As a supportive guide in favor of Foreign Students (such those from Nepal, Somalia and Nigeria).
- Appearing and negotiating with well speaking at conferences and seminars.

Research Publications

1. **Howlader A.**, Dey S.K., “ RP-DMAC: Receiver Pivotal Directional MAC with Multichannel for IoT Based WSN”. - International Conference on Cyber Security and Computer Science, 2020 – Springer, Cyber Security and Computer Science, vol 325. DOI: 10.1007/978-3-030-52856-0_4.
2. **A. Howlader**, K. M. Ahmed and M. O. Rahman, "Distributed Multi-radio Multi -channel Communication using Directional MAC for IoT-based Wireless Networks," 2 19 International Conference on Sustainable Technologies for Industry 4.0 (STI), 2019, pp. 1-6, doi: 10.1109/STI47673.2019.9068053.
3. Dey SK, Rahman MM, Siddiqi UR, **Howlader A.** “Early Outbreak Analysis of COVID-19 Epidemic: China and Global Health Perspectives”. Research Square; 2020. DOI: 10.21203/rs.3.rs-44328/v1.

4. KMM Uddin, SK Dey, N Biswas, SC Das, **A Howlader**. (2024). "Toward Early Detection of Neonatal Birth Asphyxia Utilizing Ensemble Machine Learning Approach". Proceedings of International Joint Conference on Advances in Computational Intelligence. IJCACI 2022. Algorithms for Intelligent Systems. Springer, Singapore. https://doi.org/10.1007/978-981-97-0180-3_4
5. SK Dey, MM Rahman, UR Siddiqi, A Howlader, "Global landscape of COVID-19 vaccination progress: insight from an exploratory data analysis". Human Vaccines & Immunotherapeutics, 2022 Dec 31;18(1):2025009. doi: 10.1080/21645515.2021.2025009.
6. Dey SK, Rahman MM, Siddiqi UR, **Howlader A**. "Correction to: Exploring Epidemiological Behavior of Novel Coronavirus (COVID-19) Outbreak in Bangladesh". SN Compr Clin Med. 2020;2(11):2506. doi: 10.1007/s42399-020-00517-4.
7. SK Dey, MM Rahman, UR Siddiqi, **A Howlader**; "Analyzing the epidemiological outbreak of COVID-19: A visual exploratory data analysis approach", Journal of medical virology 92 (6), 632-638, 2020.
8. Dey SK, Rahman MM, **Howlader A**, Siddiqi UR, Uddin KMM, Borhan R, et al. (2022) "Prediction of dengue incidents using hospitalized patients, metrological and socio-economic data in Bangladesh: A machine learning approach". PLoS ONE 17(7): e0270933. <https://doi.org/10.1371/journal.pone.0270933>
9. SK Dey, MM Rahman, UR Siddiqi, **A. Howlader**; "Exploring Epidemiological Behavior of Novel Coronavirus Outbreak through the Development and Analysis of COVID-19 Daily Dataset in Bangladesh". medRxiv 2020.06.30.20143909.
10. MM Rahman, SK Dey, **A Howlader**. "Jago Nari: Rise of Women in Bangladesh to Eradicate Sexual Harassment Using Emerging Technologies of Android Application". IJSR, 2020, Volume 5, Issue 3, ISSN: 2455-2631.
11. SK Dey, **A Howlader**, C Deb, "MobileNet Mask: A Multi-phase Face Mask Detection Model to Prevent Person-To-Person Transmission of SARS-CoV-2", Proceedings of International Conference on Trends in Computational and Cognitive Engineering, 603-613, Springer, Singapore 2021.
12. SK Dey, MM Rahman, UR Siddiqi, **A. Howlader**; "Epidemic Trend Analysis of SARS-CoV-2 in SAARC Countries Using Modified SIR (M-SIR) Predictive Model" medRxiv 2020.06.29.20142513.
13. SK Dey, MM Rahman, UR Siddiqi, **A. Howlader**; "Analyzing the Global Impact of COVID-19 Vaccination Progress: A Result-oriented Storytelling Approach", medRxiv 2021.03.26.21254432.
14. SK Dey, KMM Uddin, HMH Babu, MM Rahman, **A Howlader**, KMA Uddin. "Chi2-MI: A hybrid feature selection based machine learning approach in diagnosis of chronic kidney disease", Intelligent Systems with Applications, Volume 16, 2022, 200144, ISSN 2667-3053, <https://doi.org/10.1016/j.iswa.2022.200144>.
15. SK Dey, MM Rahman, UR Siddiqi, **A Howlader**; "Exploring epidemiological behavior of novel coronavirus (COVID-19) outbreak in Bangladesh", SN comprehensive clinical medicine 2 (10), 1724-1732, 2020.
16. G M. M. Bashir, **A. Howlader**, I. Shemu and E. Ety, "Effectiveness of weighted graph of schema to aid the minimization and measurement of schema complexity," The 8th International Conference on Software, Knowledge, Information Management and Applications (SKIMA 2014), pp. 1-5, 2014.
17. G M. M. Bashir, **A. Howlader**, I. Shemu and E. Ety, "Effectiveness of minimization and measurement of schema complexity based on weighted graph," 8th International Conference on Electrical and Computer Engineering (ICECE), 2014, pp. 349-352, doi: 10.1109/ICECE.2014.7026993.

Research Interest and Skill

MACHINE LEARNING TECHNIQUES TO SOLVE REAL WORLD APPLICATIONS BY BUILDING CONCRETE MATHEMATICAL MODELS IN PARTICULAR.

- Human-Computer Interaction
- Machine Learning, Deep Learning
- Wireless & Sensor Systems,
- Image Processing
- Data Mining
- Wireless Communication Network
- Cyber Security

Conferences

- On International Conference on Electrical, Electronics, Computers, Communication, Mechanical and Computing (EECCMC 2018)
- 8th International Conference on Software, Knowledge, Information Management and Applications (SKIMA) 2014, 18-20th December
- On 8th International Conference on Electrical and Computer Engineering (ICECE) 2014, 20-22nd December
- Attended 9th International Conference on Electrical and Computer Engineering (ICECE), 20 Dec- 22 Dec 2016
- 20th International Conference On Computer and Information Technology (ICCIT 2017) December 22-24

Computer Literacy

Programming Languages: C, C#, Java, Python, Prolog, HTML, PHP.

Editor and Coding Platform: Anaconda, Pycharm, R studio, Android Studio, MATLAB, Net Beans, Visual Studio, SWI-Prolog, WEKA, Jupyter NB, CISCO Packet Tracer, PuTTy, Termius, NS3 or OMNET++

Database: MySQL, SQLite, Oracle.

Embedded Systems: Arduino UNO, Rasberry PI, PIC, AVR, 8086 Microcontroller Kit

Honors & Awards

RESEARCH GRANTS

2022-2023 Funds awarded to research projects by Research and Training Center at PSTU

2023-2024 Funds awarded to research projects by Research and Training Center at PSTU

UNIVERSITY

2014 **Excellent Result**, Dean's Merit Scholarship

2014 **3rd Place**, Academic Award

2013 **Successful Participant**, ACM Programming Contest

DOMESTIC

2008 **Government Scholarship**, For Excellent Result(5.00 out of 5.00) in Secondary School level

2008 to 2010 **Fully Founded Scholarship for College level**, For Excellent Result(5.00 out of 5.00) in Secondary School level

Activities (Workshops & Training)

1. Technical Committee (TC) member of General Science and Technology (GST) Admission System 2021- 22 and 2020-21.
2. Technical Committee (TC) member of the Agricultural University Cluster System Admission (ACAS) Admission System 2021-22 and 2020-21.
3. Technical Program Committee (TPC) member and Reviewer of the International Conference on Intelligent Vision and Computing (ICIVC 2022) held on 26-27 November 2022, Agartala, India.
4. Reviewer of International Conference on Big Data, IoT and Machine Learning (BIM 2021) held on 23- 25 September 2021, Chittagong, Bangladesh.
5. Reviewer of International Conference on Science and Contemporary Technologies (ICSCT) 2021 held on 5-7 August 2021, Dhaka, Bangladesh.
6. Recourse person and Trainer at Workshop on Campus Network Design and Its Operation (WCNDIO) training course under the Asi@Connect project funded by EC/Asi@Connect/TEIN*CC and organized by PSTU held from 01 to 05 September 2022.
7. Recourse person and Trainer on Strengthen the Asi@Connect Female Network Engineer (SAFE): Capacity Development Program for NREN Tech-Girl and Future, IT-Girl (Phase-2), funded by EC/Asi@Connect/TEIN*CC, 2022-2023.
8. Recourse person and Trainer at Workshop on Networking Basics and Campus Network Design (WNBCND-1, 2, 3, 4) under SAFE (Phase-2) project held on 09 to 10 December 2022 at 4 different divisions of Bangladesh from August to November 2022 (KUET, NSTU, BUBT, PSTU).
9. Recourse person of 2-day Online Webinar Courses on Computer Networking, Monitoring, and Management under the Asi@Connect Project SAFE (Phase-2) from June to August 2022.
10. Recourse person of one-day Seminar on Network/ICT prospect for TechGirl (SNIPFI-2) under the Asi@Connect project at 6 different divisions of Bangladesh from March to June 2022. (BUBT, DU, JUST, JKKNIU, PSTU, UCTC, NSTU, GUB, NWU)
11. Curriculum Committee Member (OBE based) of Masters in Computer and Communication Engineering (CCE) at the PSTU.
12. Member Secretary of the Cultural Program in Computer and Communication Engineering (CCE) at the PSTU.
13. Committee Member of Barisal Divisional Science Olympiad 2023 organized by Bangladesh Academy of Sciences at PSTU
14. Former IEEE Graduate Student Member
15. Former Professional Member at ACM SIGCHI Cyprus

Special Training:

1. **Data analysis using R programming language** Training organized by IQAC, Patuakhali Science and Technology University from 15 May 2024 to 26 May 2024.
2. **Workshop on BNQF implementation** Training organized by IQAC, Patuakhali Science and Technology University on 14 June 2024.
3. **Grievance Redress System and GRS Software** training program organized by IQAC, Patuakhali Science and Technology University on 16 March 2023.
4. Collaborating participant at International Workshop on **Wireless Networking and Cyber Security (WWNCS)** training course under the TEIN*CC/Asi@Connect/EU supported SAFE project organized by PSTU held from 23 to 25 December 2022.
5. Workshop on **Eduroam for NRENs Campus Network (WENCN)** under the Asi@Connect supported project

titled: Capacity Development for Implementing Eduroam in NRENs (CDIEN) organized by the Department of Computer Science and Information Technology (CSTI), Patuakhali Science and Technology University in association with Bangladesh Research and Education Network (BdREN) from 21 to 24 October 2022.

6. Workshop on **Campus Network Operation and Security Management (WCNOSM)** under the Asi@Connect capacity development program organized by the Department of Computer Science and Information Technology (CSTI), Patuakhali Science and Technology University from 03 to 07 April 2021.
7. **Foundation Training for University Teachers** Conducted by the Graduate Training Institute (GTI), Bangladesh Agriculture University with the support of the University Grants Commission of Bangladesh from 04 to 30 December 2021.
8. **Training on Outcome Based Education (OBE)** conducted by the Institutional Quality Assurance Cell of Patuakhali Science and Technology University (PSTU) from 05-12 January 2020.
9. International Congregation on **Women Empowerment, Gender Diversity, and Financial Inclusion** organized by the Dhaka International University, MTC Global Bangalore, Vivekananda College of Art and Science for Women Tamil Nadu, India from 29-30 April 2019.
10. Workshop on **Outcome Based Education & Curriculum Mappings** conducted by the IQAC, DIU with the support of HEQEP, UGC Sub-Project: B-012 from 02 to 04 January 2018.
11. **QA Workshop on Teaching-Learning Methods & Curriculum** Contents for Newly Appointed Teachers with the support of IQAC, Dhaka International University on 27 November 2017.
12. Research Methodology & Scientific Paper Writing on November 11, 2017, Dhaka International University.
13. Academic Staff Development (Curriculum and Beyond, Teaching-Learning Process, Excellence in Research, as well as Academic Audit and Accreditation) with the IQAC Cell, Dhaka International University.

Projects

HCI and IoT

DEVELOPED AS RESEARCH PROJECT

- Smart stick for the blind
- Home Security Device
- Smart Patient monitoring system

Android Application Development

DEVELOPED AS SEMESTER PROJECT

- Android Application Stop Sexual Harassment
- SSC Exam Routine
- CSE IT Dictionary

Embedded System Development

DEVELOPED AS SEMESTER PROJECT WITH ARDUINO UNO

- Automatic Railway Gate Control
- Numeric Water-Level Indicator
- Battery Charge and auto light control in dark with Solar Energy

Experience work

DEVELOPED EXISTING PROJECTS WITH STUDENTS AS AI INTEREST

- Different mathematical view with python
- Stock market analysis
- Handwriting Recognition
- Disease analysis
- Maternal mortality ratio visualization

Program Committees

2014	Staff & Co-Organizer , Project Workshop	<i>PSTU, Bangladesh</i>
2013	Co-Organizer , Programming Contest	<i>Bangladesh</i>
2012	Co-Organizer , Programming Contest	<i>Bangladesh</i>
2012	Successful Participant & Co-Organizer , Debate Competition	<i>Bangladesh</i>

References

1 Golam Md. Muradul Bashir

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2 Dr. Md. Samsuzzaman

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3 Prof. Dr. Md. Obaidur Rahman

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