School of Engineering & Physical Sciences (SEPS)

Department of Electrical & Computer Engineering:-

DR. MOHAMMAD ABDUL MATIN [MTN]

Professor & Chair

PhD (Newcastle University, UK)
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Biography

Dr. Mohammad A Matin is a Professor of the Department of Electrical and Computer Engineering at North South University (NSU), where he has been since 2008. He was first appointed as Assistant Professor and then promoted to Associate Professor at North South University in 2011 and later on Professor. While in that post he was also the coordinator of EEE program. During 2012-2017, he was an Associate Professor at Universiti Teknologi Brunei (UTB), Brunei Darussalam (QS World University ranking 379). He received his B.Sc. degree in Electrical and Electronic Engineering from BUET (Bangladesh), his M.Sc. degree in Digital Communication from Loughborough University, UK and PhD in Wireless Communication from Newcastle University, UK. He has also taught several courses in communications, electronics and signal processing at KUET, Khulna University, BRAC University, and UKM (top ranked uni. In Malaysia), UM (top ranked Univ. in Malaysia) at Masters and undergraduate level as well engaged himself with Maters theses and projects during his career.

He has published over 150 peer-reviewed journals and conference papers as a sole author and with the students of NSU and other universities. All of these papers are indexed in major database like Scopus, ISI Web of Science, and Google Scholar. His published works have been gained a good number of citations from Google Scholar and Scopus. Dr. Matin is the author/editor of 17 (seventeen) academic books such as A Glimpse Beyond 5G in Wireless Networks (Springer 2022), Wideband, Multiband and Smart Antenna Systems (Springer, 2021), Towards Cognitive IoT Networks (Springer, 2020), Communication Systems for Electrical Engineers (Springer, 2018), Spectrum Access and Management for Cognitive Radio Networks (Springer, 2016), Coding for MIMO-OFDM in Future Wireless Systems (Springer, 2015), Advances in Sensor Networks Research (Nova publisher, USA, 2014) and 21 (twenty one) book chapters.

Dr. Matin has presented invited talks in Bangladesh and Malaysia and has served as a member of the technical program committee for more than 50 international conferences, keynote speakers, session chairs, Ms and PhD external examiner, external evaluator of research grant, external assessor of promotion committee. He is on the editorial board of several international journals such as IEEE Communications Magazine, IEEE, USA, IET Wireless Sensor Systems (IET-WSS), and so on. Dr. Matin is a member of the IEEE, IEEE Communications Society (IEEE ComSoc), and several other international organizations. He served as a counselor of IEEE North South University (2008–2011), and secretary of the IEEE Communication Society, Bangladesh Chapter (2010–2011). He has received a number of prizes and scholarships including the Best student prize (Loughborough University), Commonwealth Scholarship, and Overseas Research Scholarship (ORS) conferred by the Committee of Vice Chancellors and Principals (CVCP) in the UK. He has been fortunate enough to work in WFS Project with Wireless Fibre Sytems Ltd, UK as an expert. His current research interests include UWB communication, wireless sensor networks, cognitive radio, EM modeling, and antenna engineering.

Research Areas

- RF, Microwave and Communication Technology
- Broadband Access and Communication Technologies

Research Interests

- Distributed wireless access,scheduling, and power control
- MIMO-OFDM
- Network coding
- Wideband, multiband and smart antennas for wireless applications
- Spectrum sensing techniques, power and admission control
- Spectrum management
- Cooperative and clustering distributed sensors
- Sensor applications

Teaching

- EEE 533 Digital Communications
- EEE 534 Mobile and Wireless Communications
- EEE 535 Satellite Communications
- ETE 423/EEE 423 Principles of Telecommunication Network
- ETE 501 Electronics and Telecommunications Systems
- EEE 141 Electrical Circuits I

- EEE 111/ ETE 111 Analog Electronics-I

Professional Activity

- *Series Editor, IEEE Communications Magazine, IEEE USA*
- *Editor, IET Wireless Sensor Systems, IET UK*
- *External Examiner for Masters and PhDs*
- *External Evaluator for Research funding*
- *External Assessor for Academic Promotion*
- *TPC member of more than 50 international conferences such as IEEE Globecom, IEEE ICC etc.*

DR. M. ROKONUZZAMAN [RKZ]

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Research Areas

- Artificial Intelligence & Robotics
- Technology Transfer and Policy

Teaching

- EEE 452 Engineering Economics
- EEE 221 Signals and Systems

DR. K. M. A. SALAM [KAS]

Professor & Director, Office of Admissions

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Research Areas

- Power Systems and Renewable Energy
- Semiconductor Device and Technology

Research Interests

- CMOS Technology
- IC Fabrication
- CMOS Image Sensor
- Renewable Energy

Teaching

- EEE 141 Electrical Circuits I
- EEE 141L Electrical Circuits I Lab
- EEE 111/ ETE 111 Analog Electronics-I
- EEE 111L/ ETE 111L Analog Electronics-I Lab
- EEE311/ ETE311 Analog Electronics II
- EEE 361/ ETE 361 Electromagnetic Fields & Waves

Selected Publications

Journals

- Marufa Ferdausi, K. M. A. Salam, **"Integrated DC Energy Management System,"** *", International Journal of Global Science and Technology, Australia, Vol.3. No.1, (2015), pp. 52-63.*, 2015
- Nikita Mahjabeen, K. M. A. Salam, **"Comparative Study and Design Optimization of Supercapacitors for High Powered LED Flashlight Camera Phones,"** *International Journal of Scientific & Engineering Research (IJSER), Vol.6. No.7, (2015), pp. 471-477.*, 2015
- Ahmed Sony Kamal, K. M. A. Salam, and M. A. Razzak, **"Design of a Transformer-less Grid-Tie Inverter Buck-Boost Photovoltaic Inverter with Immittance Conversion Topology,"** *International Journal of Renewable Energy Research, Vol.4. No.3, (2014), pp. 539-547 (Indexed in SCOPUS).*, 2014

- M. A. Muzahid, M. F. R. Ansari, K. M. A. Salam and H. U. Zaman, **"A High Voltage Gain DC-DC Boost Converter for PV Cells,"** *Global Science and Technology Journal, vol. 3, no. 1, pp. 64 – 76*, 2015

Research Projects & Grants

- Design and Development of a Constant Current Grid-Tie Inverter using Immittance Conversion Topology for Photovoltaic Applications (NSU Research Fund)

DR. MOHAMMAD RASHEDUR RAHMAN [RRN]

Professor

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BS in Computer Science and Engineering, BUET, Bangladesh

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Biography

Dr. Mohammad Rashedur Rahman joined NSU in 2008 and is currently working as a Professor in the department. Dr. Rahman got his Ph.D. in Computer Science from University of Calgary, Canada under the supervisor Dr. Ken Barker who served as a Department Chair, Computer Science and Dean of Science, University of Calgary, Canada. He has his Masters degree from University of Manitoba, Canada. During his graduate studies in both schools he has been awarded with a number of prestigious scholarships that include Queen Elizabeth II Fellowship (15,000 CAD), Province of Alberta Graduate Fellowship (10,000 CAD), University of Calgary Research award (24,000 CAD for 3 Consecutive Years) , University of Manitoba Graduate Fellowship (64,000 CAD-declined for Ph.D. in University of Calgary), Departmental Research Award in University of Manitoba. He had also been awarded Deans Award in BUET and Entrance scholarship in BUET for securing 20th position in BUET admission test among 3500 students. He is a recipient of a Gold Medal and Monetary Award of Outstanding Research from School of Engineering and Physical Sciences (SEPS) for the period 2018-2020.

Since his joining, Dr. Rahman devoted himself completely in teaching and research with his students of his department. He has taught different ranges of courses, as well engaged himself with different Masters and Undergraduate research theses and projects. He had supervised more than 10 Masters Students in ECE Department. Since his joining at NSU, he had worked as an external thesis examiner for more than 15 Master's theses. Additionally, he served on the dissertation committee for two students who received Ph.D. degrees from BUET in computer science and engineering. Additionally, he worked as an external Ph.D. examiner for two students, one from Griffith University in Queensland, Australia, and the other from University of New Castle in New South Wales, Australia.

He had published a good number of international journal articles and research papers in conference proceedings with the students of NSU. All of those papers are indexed in Scopus, ISI Web of Science, and Google Scholar. His published papers are well cited and a good number of citations (around 3700 till October 24) from Google Scholar and Scopus has been recorded .

Apart from teaching and research, he also engaged himself in reviewing funding projects that include both national and international level grant applications. He served as the SRC (Scientific Review Committee) Chair from School of Engineering and Physical Sciences (SEPS) for 2020-23. He also served as an external reviewer of a grant application amounting 50,000 Euro from Department of Water and Climate Risk, Vrije University (VU) Amsterdam, Netherlands and RISE funding from BUET.

Dr. Rahman also review and set different questions for Information Technology Engineers Examination (ITEE) examination organized by JICA (Japan International Cooperation Agency) and Bangladesh Computer Council under the umbrella of ICT Division, Ministry of Posts, Telecommunications & IT, Bangladesh. With JICA's invitation and sponsorship he attended international question formulation workshop in Tokyo, Japan, 2015 . He also attended international question formation meeting (QFP) in Ulaanbaatar, Mongolia and Bangkok, Thailand in 2017 and 2019 respectively with joint sponsorship of JICA and GOB (Govt. of Bangladesh). Dr. Rahman served as an evaluation committee member of Scholarship & Fellowship award committee of ICT Division.

He is a Senior Member of IEEE and a Fellow of the Bangladesh Computer Society. He is serving as an editorial board member in a number of renowned journals and a program committee member of several conferences organized by ACM, IEEE and Springer. He was the organizing chair of 24th IEEE International Conference on Computer and Information Technology(ICCIT 2021) hosted by NSU.

Research Areas

- Database and Information Systems
- Artificial Intelligence & Robotics
- Cloud Computing and Distributed Systems

Selected Publications

Journals

- Nahian Ahmed, Rashedur M. Rahman, **"Label noise tolerance of deep semantic segmentation networks for extracting buildings in ultra-high-resolution aerial images of semi-built environments,"** *Geocarto International, Taylor and Francis, UK, 2021, https://doi.org/10.1080/10106049.2021.1992022 (Impact Factor (IF): 4.889)*, 2021
- Ahmed, N., Rahman, R.M., Adnan, M.S.G., Ahmed, B., **"Dense prediction of label noise for learning building extraction from aerial drone imagery,"** *International Journal of Remote Sensing (IJRS), 2021, https://doi.org/10.1080/01431161.2021.1973685, (IF: 3.151)*, 2021
- Mustafizur Rahaman, Md. Monsur Hillas, Jannatul Tuba, Jannatul Ferdous Ruma, Nahian Ahmed & Rashedur M. Rahman, **"Effects of Label Noise on Performance of Remote Sensing and Deep Learning-Based Water Body Segmentation Models,"** *Cybernetics and Systems, https://doi.org/10.1080/01969722.2021.1989171, (IF: 1.879)*, 2021
- Mohammed Sarfaraz Gani Adnan, Md Salman Rahman, Nahian Ahmed, Bayes Ahmed, Md. Fazleh Rabbi, Rashedur M. Rahman, **"Improving Spatial Agreement in Machine Learning-Based Landslide Susceptibility Mapping,"** *Remote. Sens. 12(20): 3347 (2020) (IF: 4.848)*, 2020
- N Ahmed, RB Mahbub, RM Rahman, **"Learning to extract buildings from ultra-high-resolution drone images and noisy labels,"** *International Journal of Remote Sensing 41 (21), 8216-8237. (IF: 3.151).*, 2020
- Karim Redwanul, Islam M.A., Muhiminul Simanto, Sazid Rahman , Chowdhury Saif Ahmed, Roy Kalyan, Al Neon Adnan , Hasan Md. Sajid, Firoze Adnan, Rahman Rashedur M., **"A step towards information extraction: Named entity recognition in Bangla using deep learning,"** *Journal of Intelligent and Fuzzy Systems, 37(2), IOS Press (IF: 1.851)*, 2019
- Deb Tonmoay, Ali, Mohammad Zariff Ahsham, Bhowmik Sanchita, Firoze Adnan. Ahmed Syed Shahir, Tahmeed Muhammad Abeer Rahman N.S.M. Rezaur, Rahman Rashedur M, **"Oboyob: A sequential-semantic Bengali image captioning engine,"** *Journal of Intelligent and Fuzzy Systems, 37(2), IOS Press (IF: 1.851)*, 2019
- Rashedur M Rahman, Fazle R. Hasan, **"Using and Comparing Different Decision Tree Classification Techniques for Mining ICDRR,B Hospital Surveillance Data,"** *Expert Systems with Applications: 38(9), pp. 11421-11436, Elsevier Science (IF:6.954)*, 2011
- Rashedur M Rahman, K. Barker and R. Alhajj, **"Replica Placement Strategies in Data Grid,"** *Journal of Grid Computing, Springer, 6(1): 103-123 (IF:3.986)*, 2008
- Rashedur M Rahman, K. Barker, and R. Alhajj, **"Replica selection strategies in Data Grid,"** *Journal of Parallel and Distributed Computing, Elsevier Science, 68(12): 1561-1574 (IF:3.734)*, 2008
- Syed Akib Anwar Hridoy, M Tahmid Ekram, Mohammad Samiul Islam, Faysal Ahmed, Rashedur M Rahman, **"Localized twitter opinion mining using sentiment analysis,"** *Decision Analytics, 2:8, pp.1-19, Springer*, 2015
- Mohammed Rashid Chowdhury, Mohammd Raihan Mahmud, Rashedur M Rahman, **"Implementation and performance analysis of various VM placement strategies in CloudSim,"** *Journal of Cloud Computing 4 :20, Springer, pp. 1-21 (IF: 3.222)*, 2015

- Ashiqur M Rahman, Rashedur M Rahman, **"CAPM Indexed Hybrid E-Negotiation for Resource Allocation in Grid Computing,"** *International Journal of Grid and High Performance Computing, IGI-Global, USA, Vol:5, Issue: 2, pp. 72-91*, 2013
- Mohammad Alaul Haque Monil, Rashedur M Rahman, **"VM consolidation approach based on heuristics, fuzzy logic, and migration control,"** *Journal of Cloud Computing 2016 5:8, pp. 1-18, Springer (IF: 3.222)*, 2016

Conference Papers

- Mohammad Alaul Haque Monil, Rashedur M. Rahman, **"Fuzzy Logic Based Energy Aware VM Consolidation,"** *8th International Conference on Internet and Distributed Computing Systems (IDCS 2015), London, U.K., Lecture Notes in Computer Science 9258, Springer, pp. 31-38* , 2015
- Md. S. Q. Zulkar Nine, Md. Abul Kalam Azad, Saad Abdullah, Rashedur M. Rahman, **"Fuzzy logic based dynamic load balancing in virtualized data centers.,"** *22nd IEEE International Conference on Fuzzy Systems (FUZZ-IEEE)*, 2013
- Mohammad Alaul Haque Monil, Romasa Qasim, Rashedur M. Rahman, **"Speed and direction based fuzzy handover system,"** *22nd IEEE International Conference on Fuzzy Systems (FUZZ-IEEE)*, 2013
- Mohammed Rashid Chowdhury, Mohammad Raihan Mahmud, Rashedur M. Rahman, **"Clustered based VM placement strategies,"** *14th IEEE/ACIS International Conference on Computer and Information Science, ICIS 2015,USA, June 28 – July 1, pp.247-252*, 2015
- Adnan Firoze, Rashedur M Rahman, **"Mining ICDDR, B Hospital Surveillance Data Using Locally Linear Embedding Based SMOTE Algorithm and Multilayer Perceptron,"** *7th Asian Conference on Intelligent Information and Database Systems, Lecture Notes in Computer Science 9011, pp.398-407, Springer*, 2015

Research Projects & Grants

1. Project Title: Hybridized Artificial Intelligence-Based Spatio-Temporal Flood Susceptibility Mapping, ICT Innovation Fund, ICT Division, Taka 6 Lac BDT, Year 2021
2. Project Title: Dense prediction under pseudo-random and non-random noise in multidimensional labels, Role: Principal Investigator, Fund: 5 Lac BDT Equivalent to $6000, From: Conference Travel and Research Grants (CTRG), North South University, Duration: 2020-21.
3. Project Title: Hybridization of E-Commerce Platforms using Blockchain, Smart Contract and Data Mining, Travel and Research Grants (CTRG), North South University, Duration: 2021-22.
4. Project Title: Can Artificial Intelligence Perceive Beauty? Role: Co-Principal Investigator, Fund: 3 Lac BDT Equivalent to $4,000, Conference Travel and Research Grants (CTRG), North South University, Duration: 2016

DR. HAFIZ ABDUR RAHMAN [HZR]

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Biography

Dr. Hafiz Abdur Rahman has more than thirty years of experience in teaching and research. Before joining NSU, Dr. Rahman had taught at UBC, Purdue University, and the Islamic University of Technology. His expertise includes modeling and simulating data communication and electrical power systems networks; embedded control and monitoring systems; parallel and distributed computing; security and reliability of Internet-enabled systems; data processing and decision support systems. Dr. Rahman is presently leading a research group for a GoB-funded project (EPRC) to develop technologies for improving the stability and Cybersecurity of Bangladesh's National Power Grid. An important part of this work is to build Phasor Measurement Devices (PMU) and a Cyber-Physical System (CPS) Testbed for the Power Grid Company of Bangladesh (PGCB).

In the past, he had pioneering work on critical infrastructures that forms the basis for understanding "Cyber Interdependency" as we know it today. As an engineer, Dr. Rahman had been one of the important team members for some of the very prestigious engineering projects, which include: the security and emergency preparedness simulation of the 2010 Winter Olympics (2009-2010) that was held in Vancouver, development of critical infrastructures' simulation system (I2Sim) for the Government of Canada (2005-2008) and had designed and commissioned computer networks for the Prime Minister's Office and the Planning Commission of the Government of Bangladesh (1995-1997). He had been a member of the executive committee of the IEEE P2030.4 (Smart Grid) standardization working group (2013-2018) and was the chair of the Safety-related committee of the WG.

Dr. Rahman is a registered professional engineer in Canada, a senior member of IEEE, and a fellow of the Institution of Engineers, Bangladesh. He received his BSEEE degree in 1988 from Chittagong University of Engineering and Technology (CUET), Bangladesh.

Research Areas

- Power Systems and Renewable Energy
- Embedded Systems and Internet of Things (IoT)
- Modeling and Simulation
- Data Networking and Information Security

Teaching

- EEE 362 Power Systems
- ETE 331 Data Communications & Networks
- EEE 221 Signals and Systems
- ETE 505 Advanced Computer Networks and Communications
- ETE 536 Network Security
- EEE 520 Stochastic Signals and Systems

DR. SHAZZAD HOSAIN [SZZ]

Professor & Dean

PhD in Computer Science from Wayne State University, USA

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Research Areas

- Mobile, Wireless and Web Applications Development
- Artificial Intelligence & Robotics
- Database and Information Systems
- Software Engineering

Teaching

- CSE 115 Programming Language I
- CSE 215 Programming Language II
- CSE 327 Software Engineering
- CSE 331 Microprocessor Interfacing & Embedded System
- CSE 427 Software Quality Assurances & Testing

- CSE 482 Internet and Web Technology
- CSE499A/EEE499A/ETE499A – Senior Design I
- CSE499B/EEE499B/ETE499B – Senior Design II
- CSE 513 Advanced Artificial Intelligence
- CSE 516 Bioinformatics Computing
- CSC 598 Special Topic

Selected Publications

Journals

- Syed Akib Anwar Hridoy, Faysal Ahmed and Md. Shazzad Hosain, **"Regression Testing based on Hamming Distance and Code Coverage,"** *International Journal of Computer Applications*, 2015
- Sukanta Basak and Md. Shazzad Hosain, **"Software Testing Process Model from Requirement Analysis to Maintenance,"** *International Journal of Computer Applications*, 2014
- Md. Safaet Hossain, Md. Shazzad Hosain, **"Web Test Integration and Performance Evaluation of E-Commerce Web Sites,"** *International Journal of Computer Science and Information Security*, 2012
- Md. Shazzad Hosain and Muhammad Abdul Hakim Newton, **"Multi-Key Index for Distributed Database System,"** *International Journal of Software Engineering and Knowledge Engineering*, 2005

Conference Papers

- Mohd. Tahsin Bin Mostafa, Shah Md. Tanzim Alam Choudhury, Md. Shazzad Hosain, **"Design and performance Analysis of a Dual Axis Solar Tracker,"** *IEEE 1st International Conference on Energy, Systems and Information Processing (ICESIP), Chennai, India, July 04 – 06*, 2019
- Fahmina Nur Salma, Shazzad Hosain, **"Enhancing Mixed Road Traffic Forecasting Method using Vehicle Tracking System in GPS,"** *2018 International Conference on Computing, Power and Communication Technologies (GUCON), Uttar Pradesh, India, Sep 28 – 29*, 2018
- 10. M. S. Hossain, Sazzad Hosain, Tanjila Farah, **"A Study of Cyber security threats in core banking system of Bangladesh,"** *7th International Conference on Software and Computing Technologies (ICSCT 2018)*, 2018
- Md. Hasan Mahmood and Md. Shazzad Hosain, **"Improving test case prioritization based on practical priority factors,"** *8th IEEE International Conference on Software Engineering and Service Science (ICSESS), Beijing, China, Nov 24 – 26*, 2017
- 11. D. Alam, M. Zaman, T. Farah, R. Rahman and M. S. Hosain, **"Study of the Dirty Copy on Write, a Linux Kernel memory allocation vulnerability,"** *2017 International Conference on Consumer Electronics and Devices (ICCED)*, 2017
- Sayed Mahmudul Alam, Nahid Islam and Shazzad Hosain, **"Most Central Actors of an Unknown Network Using Friendship Paradox,"** *International Conference on Informatics and Computing (ICIC 2016), Lombok, Indonesia, Oct 28 – 29*, 2016

- Shareen Mahmud, Nabila Rezwana Mirza and Md. Shazzad Hosain, **"Tapping the Power of Social Network Analysis for One Bank Limited Bangladesh,"** *3rd European Conference on Social Media Research, Caen, France, Jul 12 – 13*, 2016
- Shayanton Aurkaw, Rudraneel Chakraborty, Shazzad Hosain, **"Autonomous Data Integration Model Using Integra Data Model,"** *International Conference on Materials, Electronics & Information Engineering (ICMEIE-2015), Rajshahi, Bangladesh, June* , 2015
- Saniat Javid Sohrawardi, Iftekhar Azam, Shazzad Hosain, **"A Comparative Study of Text Classification Algorithms on User Submitted Bug Reports,"** *IEEE International Workshop on Data Management (IWDM 2014), Bangkok, Thailand, Sep – Oct* , 2014
- Bushra Hoq, Samia Jafrin, Shazzad Hosain, **"Dependency Cognizant Test Case Prioritization,"** *Conference on Computational Intelligence and Software Engineering (CiSE 2011), Wuhan, China, December* , 2011
- Nusrat Tanzim, Khandkar M. Rashid, Shazzad Hosain, **"Measurement and Prediction of Indoor Signal Propagation for ISM Band,"** *International Conference on Advances in Electrical Engineering (ICAEE 2011), Dhaka, Bangladesh, December*, 2011
- Ehtesham Choudhury, Mahmud Ridwan, M Abdul Awal, Shazzad Hosain, **"A Web-based Land Management System for Bangladesh,"** *14th International Conference on Computer and Information Technology (ICCIT 2011), Dhaka, Bangladesh, December*, 2011
- Rudraneel Chakraborty, Faiyaz Ahmed, Shazzad Hosain, **"CASM: Coherent Automated Schema Matcher,"** *International Conference on Data Engineering and Internet Technology, Bali, Indonesia, March*, 2011
- M Sultan Mahmud, Saad Abdullah, Shazzad Hosain, **"GWDL: A Graphical Workflow Definition Language for Business Workflows,"** *International Conference on Data Engineering and Internet Technology, Bali, Indonesia, March* , 2011
- Shazzad Hosain and Hasan Jamil, **"An Algebraic Language for Semantic Data Integration on the Hidden Web,"** *3rd IEEE International Conference on Semantic Computing, Berkeley, California, United States, September*, 2009
- Shazzad Hosain, Hasan Jamil, **"Algebraic Operator Support for Semantic Data Fusion in Extended SQL,"** *8th IEEE International Conference on Cybernetic Intelligent Systems (UK and Ireland Chapter), University of Birmingham, Birmingham, UK, September* , 2009
- Shazzad Hosain and Hasan Jamil, **"OWL that can Choose to Inherit and Hide it Too,"** *3rd IEEE International Conference on Semantic Computing, Berkeley, California, United States, September*, 2009
- Shazzad Hosain and Hasan Jamil, **"Empowering OWL with Overriding Inheritance, Conflict Resolution and Non-monotonic Reasoning,"** *AAAI-SSS-09: Social Semantic Web: Where Web 2.0 Meets Web 3.0, pp. 53 – 58, Stanford, CA, USA*, 2009
- Anupam Bhattacharjee, Aminul Islam, Mohammad Shafkat Amin, Shahriyar Hossain, Shazzad Hosain, Hasan Jamil and Leonard Lipovich, **"On-the-fly Integration and ad hoc Querying of Life Sciences Databases using LifeDB,"** *20th International Conference on Database and Expert Systems Applications, Linz, Austria*, 2009
- Md. Shazzad Hosain and Md. Shamsul Alam, **"Single Action Reliability Model for Application Software System,"** *International Conference on Computing and Informatics, Kuala Lumpur, Malaysia, June* , 2006
- Md. Ashraf Uddin Bhuiyan and Md. Shazzad Hosain, **"Performance Analysis of cdma2000 Wireless Standard Error Correcting Codes,"** *International Conference on*

Computer and Information Technology (ICCIT) 2005, Islamic University of Technology (IUT), Dhaka, Bangladesh, pp. 1127-1132, December, 2005

- Md. Shazzad Hosain and Md. Shamsul Alam, **"Software Reliability Using Markov Chain Usage Model,"** *3rd International Conference on Electrical & Computer Engineering (ICECE), Dhaka, Bangladesh, pp. 621 – 624, December* , 2004

Others

- Anupam Bhattacharjee, Aminul Islam, Mohammad Shafkat Amin, Shahriyar Hossain, Shazzad Hosain and Hasan M. Jamil, **"LifeDB: An Autonomous System for Semantic Integration of Life Science Data on Hidden Web,"** *Semantic Web Applications and Tools for Life Sciences*, 2008
- Munirul Islam, Shazzad Hosain, Hasan M. Jamil, Morris Goodman and Derek E. Wildman, **"Phoenix: A Tool for Estimating Species Divergence Times,"** *OCCBIO, Ohio Collaborative Conference on Bioinformatics*, 2008

DR. NOVA AHMED [NVA]

Professor

Education

- Ph.D in Computer Science, Georgia Institute of Technology, USA.
- MS in Computer Science, Georgia State University, USA.
- MS in Computer Science, University of Dhaka, Bangladesh
- BS in Computer Science, University of Dhaka, Bangladesh

Experiences

- Professor, North South University, Bangladesh (2022 – present)
- Honorary Professor, IIT Guwahati, India (2023-2025)
- Research Scientst II, GoerigaTech Research Institute, GTRI, USA (June, 2010- Dec, 20210)
- Research Intern, Federal Reserve Bank, Atlanta, USA (Nov, 2009- May, 2010)
- Graduate Research Assistant, Georgia Institute of Technology, USA (Aug, 2005-May, 2010)
- Graduate Research Assistant, Georgia State University, USA (Aug, 2003- Dec, 2004)
- Lecturer, University of Dhaka, Bangladesh (Jan, 2003- Jul, 2003)

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Biography

Dr. Nova Ahmed received her bachelor's degree from the University of Dhaka in Computer Science. She has served as a faculty member in the University of Dhaka right after her graduation.Â She pursued her MS at Georgia State University and doctoral degree from Georgia Institute of Technology. She served in Georgia Tech Research Institute (GTRI) for a year. She joined North South University since she came back to Bangladesh to serve her country. She enjoys playing with her daughters Anuva and Arisha in her leisure time!

Research Areas

- Cloud Computing and Distributed Systems
- Human Computer Interaction (HCI)
- Artificial Intelligence & Robotics
- Mobile, Wireless and Web Applications Development
- Database and Information Systems
- Embedded Systems and Internet of Things (IoT)

Research Interests

Computing for Good, Healthcare, Education, Cloud and Distributed Computing, Sensor and Systems, Feminist HCI, ICT for D, Privacy, Social Justice

Teaching

- CSE 323 Operating Systems Design
- CSE499B/EEE499B/ETE499B – Senior Design II
- CSE 115 Programming Language I
- CSE 115L Programming Language I Lab

Selected Publications

Journals

- Nova Ahmed, Shuvashis Ghosh, Rifat Ahmed Hassan, Sian Iftekher Galib, AK Azad, Minhaz Ahmed Syrus, **"A gradient sensing middleware to handle flash flood,"** *Computers & Electrical Engineering*, 2017

- Nithya Sambasivan, Garen Checkley, Nova Ahmed, Amna Batool, **"Gender equity in technologies: considerations for design in the global south,"** *ACM Interact*, 2017
- Ahmed, M. S., & Ahmed, N, **"A Fast and Minimal System to Identify Depression Using Smartphones: Explainable Machine Learning–Based Approach,"** *JMIR Formative Research, 7, e28848.*, 2023
- Rony, R. J., Ahmed, M. S., Sarcar, S., & Ahmed, N. , **"Understanding Driving Stress in Urban Bangladesh: An Exploratory Study, Wearable Development and Experiment.,"** *ACM Journal on Computing and Sustainable Societies.*, 2024
- Sinha, A., Ahmed, N., Ahmed, S., Abeer, I. A.,, **"Roles of Technology for Risk Communication and Community Engagement in Bangladesh during COVID-19 Pandemic,"** *ACM Journal on Computing and Sustainable Societies.*, 2024
- Ahmed, N., Chowdhury, A. M., Urmi, T., & Jamal, L. , **"Impact of socio-economic factors on female students' enrollments in science, technology, engineering and mathematics and workplace challenges in Bangladesh.,"** *American Behavioral Scientist,* , 2023
- Manoshi Das Turjo, Khushboo Suchit Mundada, Nuzhat Jabeen Haque, Nova Ahmed, **"Predicting the Transition From Depression to Suicidal Ideation Using Facebook Data Among Indian-Bangladeshi Individuals: Protocol for a Cohort Study,"** *JMIR Research Protocol*, 2024
- N Ahmed, A Khuda, SJ Chowdhury, T Rezwana, MSU Islam, S Sajjad, **"Youth-Driven, Community-Engaged Waste Management,"** *The Journal of Community Informatics*, 2024
- MS Ahmed, T Hasan, S Islam, N Ahmed, **"Investigating Rhythmicity in App Usage to Predict Depressive Symptoms: Protocol for Personalized Framework Development and Validation Through a Countrywide Study,"** *JMIR Research Protocol*, 2024
- M Wong-Villacres, C Kutay, S Lazem, N Ahmed, C Abad, C Collazos, **"Making ethics at home in Global CS Education: Provoking stories from the Souths,"** *ACM Journal on Computing and Sustainable Societies.*, 2024
- Ifti Azad Abeer, Anik Sinha, Anik Saha, Syeda Shabnam Khan, Nova Ahmed, **"A Platform for Connectivity and Synergy between Parents and Teachers of Children with Autism,"** *ACM Journal on Computing and Sustainable Societies.*, 2024

Conference Papers

- Lamia Iftekhar, Nova Ahmed, Fahima Chowdhury, Ridita Rahman, **"Electrical and Computer Engineering Laboratory Education for Female Undergraduate Students,"** *The 10th International Conference on Computer Science & Education, ICCSE*, 2015
- Syed Ishtiaque Ahmed, Steven J. Jackson, Nova Ahmed, Hasan S. Ferdous, Md. R. Rifat, Abu S. Rizvi, Shamir Ahmed, Rifat S. Mansur, **"Protibadi: A Platform for Fighting Sexual Harassment in Urban Bangladesh,"** *ACM Conference on Human Factors in Computing Systems, CHI*, 2014
- Nithya Sambasivan, Garen Checkley, Amna Batool, Laura Sanely Gaytán-Lugo, Tara Matthews, Sunny Consolvo, Elizabeth Churchill, **""Privacy is not for me, it's for those rich women": Performative Privacy Practices on Mobile Phones by Women in South**

Asia," *Fourteenth Symposium on Usable Privacy and Security ({SOUPS} 2018), Best Paper Award*, 2018

- Nazmul Hossain, Mohammad Tanzir Kabir, Tarif Riyad Rahman, Mohamed Sajjad Hossen, Fahim Salauddin, **"'A Real-time Surveillance Mini-rover Based on OpenCV-Python-JAVA Using Raspberry Pi 2: An Application of Internet of Things (IoT),"** *5th IEEE International Conference on Control Systems, Computing and Engineering (ICCSCE 2015)*, 2015
- Ahmed, M. S., Rony, R. J., Hadi, M. A., Hossain, E., & Ahmed, N., **"A Minimalistic Approach to Predict and Understand the Relation of App Usage with Students' Academic Performance. Proceedings of the ACM on Human-Computer Interaction,"** *Proceedings of the ACM on Human-Computer Interaction, 7(MHCI), 1-2*, 2024

Research Projects & Grants

Grants

- North South University, UIU Research Grant, 2024, BDT 5 lac
- SIPG funding, North South University, PI, 2024, Amount BDT 2 lac
- North South University, Research Grant, 2023, BDT 5 lac
- North South University, Co-PI, Research Grant, 2023, BDT 2 lac
- Google South Asia & Southeast Asia Research Awards, PI, 2022. Amount 20,000 USD
- North South University, UIU Research Grant, 2022, BDT 5 lac
- North South University Research Grant, 2021, BDT 2 lac
- GCRF Funding, In collaboration with Cardiff University, 2021 Amount of 5000 Euro
- Bill and Melinda Gates Foundation, 2020, funding of 231,000 USD
- North South University Research Grant, 2020, BDT 2 lac
- ACM SIGCHI Development Fund, 2019 funding of 12000 USD
- ACM SIGCHI Development Fund, 2018, funding of 12000 USD
- Next Billion Users Project, Google, 2017, funding of 12000 USD
- North South University Research Grant, 2017 BDT 4 lac
- Systers Anita Borg Pass It On Award, 2015, USD 1000
- Innotvation Grant of Tk 1 Million by *Ministry of ICT*, Govt of Bangladesh, 2014
- Funding of TK 1.5 lac from a Project Collaborating with *University of Toronto*, 2014-2015
- Funding TK 3 Lac, *North South University* Innovation Funding, 2012-2013

Projects

- **Google,** Primary Investigator (January, 2023- December 2023). **My Freedom through Joy:** The project aims to explore challenges and opportunities for women in computing
- **Bangladesh Open Source Network** Primary Investigator (April, 2022- August 2022).**Women in ICT:** The project aims to explore challenges and opportunities for women working in ICT sector.
- **Bill and Melinda Gates Foundation** Primary Investigator (December, 2020- March, 2022). **Women Empowerment and Inclusive Technology:** The project focuses on intersection of gender and technology, particularly focusing on Fintech usage.

- **Cardiff University.** Researcher and Co PI(January 2020- Present). **Elderly care:** Working ona joint research work on technology to support elderly community of Bangladesh.
- **Monash University.** Researcher (January 2019- December 2020). Protik Project I. **Women Empowerment:** The research work focuses marginal women affected by cyclone, who can empower each other through information dissemination using technology.
- **BRAC University.** Consultant (January 2020- June 2020) Lead Researcher, Bangladesh. **Designing Technology for Garments Workers:** Here the research work is involved in understanding the challenges faced by women working in the Garments Industry and can a solution be designed to support them for better healthcare and finance management.
- **Her Stories.** Researcher (August 2019- December 2019). **Qualitative Research:** Research interviews, background and generation of personal stories of Ferdousi Priobhashini and Rokeya Afzan Rahman included in Her Stories, Volume II.
- **Google.** Consultant (August 2018- August 2019) Lead Researcher, Bangladesh. One Billion User Project. **Inclusive Technology for Women:** The Goal of this project is to understand the challenges women face in using technology and designing solution approaches that is inclusive for women in South Asia where the researcher explored the concept in the perspective from Bangladesh.

Professional Activity

INVITED TALKS, PANELS, INTERVIEW

- Keynote Speaker, India HCI, IIT Mumbai (2024)Keynote Speaker, Global AI Conference, Saudi Arabia (2024)
- Keynote Speaker, Women's Day Celebration, North South University (2023)
- Invited Guest Speaker, Georgia Institute of Technology, Gender and Inclusion (2023)
- Invited Guest Speaker, Georgia Institute of Technology, Gender and Inclusion (2022)
- Keynote Speaker, ACM W Celebration, Asia Pacific Region, (2021)
- Women in AI Ethics Collective TM, Panel Member (2021)
- UN Regional Economic Commission UNESCA – Nominated Young Scientist for Youth Dialogue (2021)
- Conference of Ethics Science and Technology and Sustainable Development, UNESCO, Ministry of Higher Education, Thailand, Invited speaker (2019)
- IAP-Res Conference, Brazil, Invited speaker (2019)
- WIE, Dhaka, Speaker (2019)
- ACM-W, Dhaka, Invited Speaker (2019)
- Missing Daughter Initiative, Bangladesh, Invited Speaker (2019)
- Women in Science without Borders, South Africa, Panel (2018)
- MobileHCI, Spain, Invited Speaker (2018)
- Interact, India, Invited Speaker (2017)
- MobiSys, Singapore, Speaker (2016)
- ICT Ministry, Dhaka, Invited Speaker (2016)

- WIE-STEM, Bangladesh, Invited Speaker (2016)
- Samsung R&D, Bangladesh, Invited Speaker (2015)
- Georgia Institute of Technology, Panel (2008)

Reviewer

- Board of Accreditation for Engineering and Technology EducationBAETE (2017 – present) Chair, 2018, Member, 2017
- Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (2020 – present)
- International Journal of Human-Computer Studies (2019 – present)
- ACM Transaction of Computer Human Interaction (2019 – present)
- Elsevier Journal of Computer and Electrical Engineering (2016 – present)
- IEEE Journal of Parallel and Distributed Computing, (2014- Present)

Chair & Organizer

- CHI Reviewer, LBW, 2024
- Ada Lovelace Celebration for Women in Computing, Bangladesh, 2020, 2021, 2022
- alt.chi, CHI, Chair, 2021, 2022
- ACM SIGCHI Asian Development Committee, Member, 2019
- ACM SIGCHI Summer School in Bangladesh, 2019
- Special Interest Group Motherhood Across Border with CHI, 2019
- HCI Across Border Symposium with CHI 2017, 2018, 2019
- IEEE Comsnet, Mentoring Chair
- Women in Science without Borders, 2018
- Ubicomp Diversity Chair, 2018
- Broadening Participation Workshop with Ubicomp 2018

Member

IEEE, WIE, ACM, ACM W, WIE, OWSD, SIGCHI, SIGCHI-Dhaka, SIGCHI Asian Development Committee, GYA, NYAB, Women in STEMM

Mentor

Mentors for Scholars at Risk Program for Refugee Scientists (2019), Yellow Jacket Mentoring Program (2017), Undergraduate and Graduate Students under the SAIC Scholars Program (2006 – 2008),

Awards

Best Journal Paper Award, ACM COMPASS. (2023)

Google South and Southeast Asia Research Award (2022)

INGSA_Asia Essay Contest 2020, Honourable Mention (2021)

Commonwealth of Learning Grow with Google Skill Development Scholarship (2021)

IQAC Research Award (2021)

Best Paper Award, (ICAIST, 2020)

GCRF Award, Cardiff University, 2020

Grace Hopper Conference for Women in Computing, Faculty Scholar, 2019

Fellowship, XXIV South Asian Feminist Capacity Building Course on Gender, Sustainable Livelihoods, Human Rights and Peace, 2019

ACM SIGCHI Development Grant, 2019 (SIGCHI Dhaka, Winter School, 2019)

Best Paper Award (CHI, 2019)

Best Poster Award (Comsnet, 2019)

ACM SIGCHI Development Grant (SIGCHI Dhaka, Summer School, 2019)

IAPP Distinguished Privacy Award, (SOUPS, 2018)

Best Poster Award, (HCI Across Border, CHI 2018)

ACM SIGCHI Development Grant (Ubicomp, 2019)

Best Paper Award, (Global Engineering, Science and Technology Conference, 2014)

New Investigators Award (Grace Hopper Celebration for Women in Computing, 2013)

New Investigators Paper (Grace Hopper Celebration for Women in Computing, 2009)

Finalists in the Georgia Tech Research and Innovation Competition (GTRIC, 2010).

ACM Student Research Competition Award, 2nd Place Winner (ASSETS, 2009)

Essay Competition Winner (Upsilon Pi Epsilon, 2009)

ACM-W Scholarship Recipient (Spring 2010, Fall 2007)

NSF travel grant recipient (Spring 2010, Fall 2008, Fall 2007)

Deans Honour (University of Dhaka, 2002)

Talent pool Scholarship (University of Dhaka 1995 to 2000)

6th position, of the Dhaka University Team (ACM ICPC 1999)

3rd Position of the Dhaka University Team (NCPC 1998)

DR. RAJESH PALIT [RJP]

Professor

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Scopus Profile: https://www.scopus.com/authid/detail.uri?authorId=8381561100

Biography

Dr. Rajesh Palit was born in Chittagong, the port city of Bangladesh. After finishing his secondary schooling, he enrolled for higher secondary certification at Chittagong College, Chittagong. In the HSC examination, Dr. Palit secured the 11th position in the combined merit list in the science group under Comilla Education Board. He then moved to Dhaka and finished his B.Sc. in Computer Science and Engineering from the Bangladesh University of Engineering and Technology (BUET). Dr. Palit obtained his M.A.Sc. Degree in Electrical and Computer Engineering from the University of Manitoba, Winnipeg, MB, Canada, in May 2004. He joined North South University after completing his MS and later on left Dhaka to pursue his Ph.D. degree. He was awarded a Doctor of Philosophy degree from the University of Waterloo, ON, Canada, for his dissertation titled modeling and evaluating the energy performance of smartphones.

Currently, he is a Professor in the Department of Electrical and Computer Engineering (ECE) at North South University, Dhaka. During his MS, he was a member of the Wireless Internet and Packet Radio

Network Research Group at the University of Manitoba, awarded the prestigious University of Manitoba Graduate Fellowship (UMGF). Dr. Palit also got Ontario Government Scholarship in Science and Technology during his Ph.D. program. He has published over a dozen academic research papers in refereed international journals and conferences and co-authored two book chapters. He is an inventor of a patent registered at the EU patent office, and the application has been published at the US patent office.

After graduating from BUET, Dr. Palit worked in the IT industry as a business analyst/network administrator at Essential Analysis LLC, a US-based data mining and analysis firm. During that time, he also worked as a trainer for the IT personnel recruited by Object Data Inc (ODI), USA, at their Dhaka Office. He used to exchange his Object Oriented Programming (OOP) skills with the newly recruited personnel for ODI.

Research Areas

- Cloud Computing and Distributed Systems
- Data Networking and Information Security
- Mobile, Wireless and Web Applications Development

Research Interests

ICT for Development (ICTD)
Mobile Wireless Networks and Applications
Computer Networks Security
Distributed and Cloud Computing

Teaching

- CSE 115 Programming Language I
- CSE 215 Programming Language II
- CSE 225 Data Structures and Algorithms
- CSE 231 Digital Logic design
- CSE 426 Compiler Constructions
- CSE 438 Data Communication & Network
- CSE 561 Cryptography
- CSE 562 Modeling and Simulation

Professional Activity

- Senior Member, IEEE
- Fellow, Institute of Engineers, Bangladesh (IEB)
- Jury Board Coordinator, EATL-Prothom Alo App Contest

DR. ABU SAYED MOHAMMAD LATIFUL HOQUE [SLF]

Professor

PhD, University of Strathclyde, UK in 2003

M. Sc. Engg., CSE, BUET in 1997

B. Sc. Engg., EEE, BUET in 1986

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Website: https://esrdlab.cse.buet.ac.bd/

Research Areas

- Database and Information Systems
- Software Engineering

Research Interests

Database, Data Analytics, Health Informatics, Big Data and E-Learning

Teaching

- CSE 115 Programming Language I
- CSE 311 Database Systems
- CSE 311L Database Systems Lab
- CSE 411 Advanced Database Systems
- CSE 512 Distributed Database Systems

Research Projects & Grants

Blockchain Based Record Linkage of Health Data

Professional Activity

Virtual Internship system (vinternship.org), HSC ICT Online System (hscict.org) and Database Learning and Evaluation System (DB-LES)

DR. SALEKUL ISLAM [SLE]

Professor

Postdoctoral Fellow, Énergie Matériaux Télécommunications (EMT), Institut national de la recherche scientifique (INRS), Canada (2008-11)
PhD in Computer Science, Concordia University, Canada (2008)
MS in Computer Science, Concordia University, Canada (2003)
BSc in Computer Science and Engineering, BUET, Bangladesh (2000)

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Scopus Profile: https://www.scopus.com/authid/detail.uri?authorId=14632178300

Biography

Dr. Salekul Islam has been Professor of the Electrical and Computer Engineering (ECE) Department of North South University since 2024. Before that he served as a Professor of the Computer Science and Engineering (CSE) Department of United International University (UIU) since 2018, and was also the Head of the CSE Department of UIU for around nine years from 2014 to 2023. He was also in the position of the Director of Institutional Quality Assurance Cell (IQAC) and the Director of Centre for AI and Robotics (CAIR) at UIU. He guided and led students' teams from 2022 to 2024, to participate in the University Rover Challenge arranged by the Mars Society at Mars Desert Research Station, Hanksville, Utah. UIU teams secured the 5th, 9th and 13th position in 2024, 2023 and 2022, respectively.

Dr. Islam completed his PhD in Computer Science from Concordia University, Canada in 2008. He also worked as a Fonds de Recherche du Québec Nature et Technologies (FRQNT) Postdoctoral Fellow at Institut national de la recherche scientifique (INRS), Canada from 2008 to 2011. He was a Visiting Faculty Member of Anglia Ruskin University, UK in 2015. Dr. Islam was a member of the National Working Committee for preparing the Policy on Blended Learning Method. He is actively involved with Bangladesh Board of Accreditation for Engineering and Technical Education (BAETE) in different capacities including as a Member of the Board, member of the Task force for Preparing the OBE Manual, the Chair of the Evaluator Assessment Committee and the resource person for conducting several training sessions for the Evaluators and various engineering programs.

Dr. Islam's research areas mainly focus in Blockchain, Edge Cloud computing, network security, Image Processing, NLP and Robotics. He has been serving as an Associate Editor of IEEE Access and Frontiers in High Performance Computing journals. He served as the Organizing Chair of several international conferences. He is a Fellow of Institute of Engineers, Bangladesh (IEB) and is also a Senior Member of IEEE.

Following are some of his key skills and experiences:

- 13 years' experience (till 2024) of full-time teaching at the university level including curriculum development
- 23 years' experience ((till 2024) of research including writing research grants and leading research teams
- Profound knowledge in Outcome-Based Education (OBE) and accreditation
- Deep understanding of university management, especially private universities of Bangladesh, 10 years experience in various administrative positions
- Hands-on experience in indexing and elevating positions in renowned university rankings
- Motivate and lead a large, diversified group of faculty members and students as well

Research Areas

- Data Networking and Information Security
- Artificial Intelligence & Robotics
- Signals and Image Processing
- Cloud Computing and Distributed Systems

Research Interests

- Cyber security
- Blockchain
- Cloud and edge computing
- Software-defined Networking (SDN)
- Future Internet
- Natural Language Processing (NLP)
- Computer Vision
- Machine Learning

List of Publications

a. Journal Articles

1. Md. Faiyaz Abdullah Sayeedi, Anas Mohammad Ishfaqul Muktadir Osmani, Taimur Rahman, Jannatul Ferdous Deepti, Raiyan Rahman, Salekul Islam, ElectroCom61: A Multiclass Dataset for Detection of Electronic Components, Data in Brief, 2025.
2. Mehedi Hasan Bijoy, Nahid Hossain, Salekul Islam, and Swakkhar Shatabda. A transformer-based
spelling error correction framework for Bangla and resource scarce Indic languages. Computer
Speech & Language, volume 89, page 101703, 2025.
3. Biswajit Paul, Chadi Assi, Georges Kaddoum, Rajesh Palit, and Salekul Islam. An energy-efficient

cluster formation based on optimal node distribution in full capacity multi-hop lora networks.
IEEE Open Journal of the Communications Society, volume 5, pages 779–794, 2024.
4. Md. Saddam Hossain Mukta, Jubaer Ahmad, Akib Zaman, and Salekul Islam. Attention and
meta-heuristic based general self-efficacy prediction model from multimodal social media dataset.
IEEE Access, 2024.
5. Muhammad Sakib Khan Inan, Nabila Sabrin Sworna, A.K.M. Muzahidul Islam, Salekul Islam,
Zulfikar Alom, Mohammad Abdul Azim, and Swakkhar Shatabda. A slice selection guided deep integrated pipeline for alzheimer's prediction from structural brain mri. Biomedical Signal
Processing and Control, volume 89, page 105773, 2024.
6. Lomat Haider Chowdhury, Salekul Islam, and Swakkhar Shatabda. A bengali news and public
opinion dataset from youtube. Data in Brief, volume 52, page 109938, 2024.
7. Md. Rakibul Islam, Md. Bokhtiar-Al-Zami, Biswajit Paul, Rajesh Palit, Jean-Charles Grégoire,
and Salekul Islam. Performance evaluation of multi-hop lorawan. IEEE Access, volume 11,
pages 50929–50945, 2023.
8. Md. Saddam Hossain Mukta, Jubaer Ahmad, Mohaimenul Azam Khan Raiaan, Salekul Islam,
Sami Azam, Mohammed Eunus Ali, and Mirjam Jonkman. An investigation of the effectiveness
of deepfake models and tools. Journal of Sensor and Actuator Networks, volume 12, 2023.
9. Mahafuja Khatun, Ridwan Arefin Islam, and Salekul Islam. B-sahic: A blockchain based secured
and automated health insurance claim processing system. Journal of Intelligent & Fuzzy Systems,
volume 44, pages 1–22. IOS Press, 2023.
10. Al Mohimanul Islam, Fatiha Binta Masud, Md. Rayhan Ahmed, Anam Ibn Jafar, Jeath Rahmat
Ullah, Salekul Islam, Swakkhar Shatabda, and A. K. M. Muzahidul Islam. An attentionguided
deep-learning-based network with bayesian optimization for forest fire classification and
localization. Forests, volume 14, 2023.
11. Nahid Hossain, Mehedi Hasan Bijoy, Salekul Islam, and Swakkhar Shatabda. Panini: a transformer-based grammatical error correction method for bangla. Neural Computing and
Applications, pages 1–15. Springer, 2023.
12. Zaheed Ahmed Bhuiyan, Salekul Islam, Md. Motaharul Islam, A. B. M. Ahasan Ullah, Farha Naz,

and Mohammad Shahriar Rahman. On the (in)security of the control plane of sdn architecture:
A survey. IEEE Access, volume 11, pages 91550–91582, 2023.

Teaching

- CSE 231 Digital Logic design
- CSE 438 Data Communication & Network

DR. ATIQUR RAHMAN [AQU]

Associate Professor

Ph.D University of London, UK
MS University of London, UK
BS Bangladesh University of Engg & Technology (BUET)

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Biography

Dr. Atiqur Rahman obtained BS degree in Electrical & Electronic Engineering from Bangladesh University of Engineering & Technology (BUET) in 2002 and MS Engg and PhD degrees from the University of London in 2006 and 2010 respectively. Dr. Rahman was supported by the EPSRC (Engineering and Physical Sciences Research Council, UK) scholarship during his PhD studies and he was a recipient of ORSAS (Overseas Research Students Award Scheme, UK) award as well. He started working as post-doctoral researcher in the same institution following completion of his PhD and remained in that position before coming back to Bangladesh in November 2011. He joined North South University in January 2012, where he is currently an assistant professor. Dr. Rahman has published around 50 papers in peer reviewed journals and conferences. He has also co-authored a book chapter on ‘Broadband Antennas’ along with his overseas collaboration partners in UK and China. The book titled ‘Wideband, Multiband, and Smart Reconfigurable Antennas for Modern Wireless Communications’ has recently been published (2015) by IGI Global and is now available in Amazon. Dr. Rahman is now planning for a new orientation of his research so that it brings benefit to the country and its people.

Research Areas

- RF, Microwave and Communication Technology
- Modeling and Simulation
- Power Systems and Renewable Energy

Research Interests

Antenna Modeling
Heterogeneous Network
Photovoltaic Solar Cell
Subwavelength Imaging
Metamaterial based Antennas and Devices

Teaching

- EEE 321 Introduction to Communications Systems
- EEE 321L Introduction to Communications Systems Lab
- EEE 363 Electrical Machines
- EEE 363L Electrical Machines Lab

DR. LAMIA IFTEKHAR [LIH]

Associate Professor

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MS from Polytechnic Institute of New York University, USA

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Website: http://lamiaiftekhar.com

Biography

Lamia Iftekhar is an Associate Professor at the Department of Electrical and Computer Engineering, North South University (NSU) , Dhaka. She completed her Ph.D. in Engineering from Dartmouth College New Hampshire, USA in June 2012 under the supervision of Dr. Reza Olfati-Saber. Her work

was on designing driving algorithms for network of autonomous vehicles. Prior to this, Lamia completed her undergraduate studies and Masters in Electrical Engineering simultaneously in 2009 under a four-years Honors BS/MS program from Polytechnic Institute of New York University, NY, USA. Her undergrad major was in Electrical Engineering and she had minors in Mathematics and Psychology.

At NSU, Lamia teaches Control Engineering and related courses. When she's not giving her students a hard time on finding controllers to stabilize some random system, she enjoys helping them out with various student organization activities and projects. She also spends some of her time as the Vice President of IEEE Women In Engineering Affinity Group, Bangladesh Section.

Lamia's current research interests is two-fold: transportation and robotics. She has been fiercely passionate about transportation issues for a long time since her home city Dhaka's urban transportation is not exactly the greatest system in the world. Her research interests in this category includes vehicle safety, intelligent transportation systems, networked vehicles, driver behaviour modelling, traffic model and congestion control.

Lamia's other field of interest includes multi-agent systems, hybrid systems, nonlinear control and cooperative systems, all mostly applied to robotics. She is particularly intrigued by the idea of using multi-robot systems for disaster management in the context of Bangladesh. She also believes that there's a huge potential in using robotics to promote sincere interest in STEM amongst the school students of her country, specially the female students.

Research Areas

- Artificial Intelligence & Robotics
- Human Computer Interaction (HCI)
- Modeling and Simulation

Research Interests

Complex networks, multi-agent systems, cooperative systems, nonlinear control, hybrid systems, distributed control, modeling and simulation, autonomy in vehicles, safety in vehicles, urban transportation – technology and policy, public transportation, driver behavior modeling, traffic modeling , congestion control, mobile robots, Multiple Input Multiple Output (MIMO) control systems, women in STEM, STEM education.

Teaching

- EEE 342 Control Engineering
- EEE 342L Control Engineering Lab
- CSE 115 Programming Language I

- CSE 115L Programming Language I Lab
- EEE 523 Nonlinear Systems - Analysis, Stability and Control

Selected Publications

Conference Papers

- Lamia Iftekhar, Nova Ahmed, Fahima Chowdhury, Ridita Rahman, **"Electrical and Computer Engineering Laboratory Education for Female Undergraduate Students,"** *The 10th International Conference on Computer Science & Education, ICCSE*, 2015
- Lamia Iftekhar, Reza Olfati-Saber, **"Autonomous Driving for Multi-Robot Networks with Nonlinear Dynamics,"** *Intelligent Vehicles Symposium (IVS)*, 2012
- Lamia Iftekhar, Reza Olfati-Saber, **"Safety-Aware Intelligent Transportation Systems: Cooperative Autonomous Driving for Vehicular Networks,"** *International Conference on Informatics in Control, Automation and Robotics (ICINCO)*, 2012
- Reza Olfati-Saber, Lamia Iftekhar, **"Flocking for Networks of Nonholonomic Robots with Nonlinear Dynamics,"** *International Conference on Informatics in Control, Automation and Robotics (ICINCO)*, 2012
- Syed Mahdi Azam, Lamia Iftekhar, **"Perfect Tracking of MIMO Systems Using the Dual Feedforward Metho,"** *The 3rd International Conference on Technology, Informatics, Management, Engineering and Environment (TIME-E)*, 2015

Professional Activity

- Vice President – IEEE Women In Engineering Affinity Group, Bangladesh Section (2015)
- Member – IEEE Control Systems Society, IEEE Vehicular Technology Society, IEEE Intelligent Transportation Systems Society, IEEE Robotics and Automation Society, Eta Kappa Nu, Tau Beta Pi
- Reviewer – Transactions on IEEE Intelligent Transportation Systems, IEEE Transactions on Systems, Man and Cybernetics
- Past Branch Counselor of IEEE NSU Student Branch (2013-2015)

DR. MOHAMMAD MONIRUJJAMAN KHAN [KMM]

Associate Professor

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Google Scholar URL: https://scholar.google.ca/citations?user=Nw3kYSUAAAAJ&hl=en

Scopus Profile: https://www.scopus.com/authid/detail.uri?authorId=36350785300

Biography

Dr. Mohammad Monirujjaman Khan is currently working as an Associate Professor in the Department of Electrical and Computer Engineering at North South University, Dhaka, Bangladesh. He received the B.Eng. degree in Electrical and Electronic Engineering from Queen Mary University of London (QMUL), United Kingdom, with First Class Honours. Dr Khan received the Draper's Company Undergraduate Prize 2008 from Queen Mary University of London for outstanding academic merit. He completed his PhD degree in Electrical and Electronic Engineering from Queen Mary University of London (QMUL). His PhD was funded by Queen Mary University of London full scholarship. After completing his PhD, Dr Khan worked as a postdoctoral research assistant under Engineering and Physical Science Research Council (EPSRC) funded IMPACT QM KTA Scheme 1 project in the School of Electronic Engineering and Computer Science at Queen Mary University of London, UK.

Dr Khan received Dr Fatema Rashid first best paper award in the International Conference on Advances in Electrical Engineering (ICAEE 2013). He also received best presenter award in the 3rd International Conference on Informatics, Electronics, and Vision Technology, (ICIEV-2014). Dr Khan received best poster paper award in the 1st International Conference on Electrical Engineering and Information & Communication Technology (ICEICT-2014). In addition, he received best paper award in the 10th Global Engineering, Science and Technology Conference, 2015. His paper 'Wireless Health Monitoring System' received best presenter award in 2nd Borneo International Conference on Applied Mathematics and Engineering, BICAME, Indonesia, 2018. Dr. Khan received best paper award for his paper titled 'Education System for Bangladesh Using Augmented Reality, Virtual Reality and Artificial Intelligence' presented in IEEE World AI IoT Congress, 10 th-13th May, 2021, Seattle, USA. He received academic excellence award at the International Conference on Computational Techniques and Applications – ICCTA, 9-10 October, 2021. Dr. Khan has received best presenter award at the 2021 IEEE 12th Annual Information Technology, Electronics and Mobile Communication Conference (IEEE

IEMCON), 27-30 October, Vancouver, Canada. Recently, Dr. Khan has received best presenter award at the 2021 IEEE 12th Annual Ubiquitous Computing, Electronics and Mobile Communication Conference (IEEE UEMCON), 1-4 December, New York, USA. He received best presenter award for his paper titled ”Violence Detection Using Computer Vision Approaches” at the *IEEE World AI IoT Congress 2022, Seattle USA, 6-9 June,*, 2022.Dr. Khan received best paper award at the 2022 IEEE 12th Annual Information Technology, Electronics and Mobile Communication Conference (IEEE IEMCON), 12-15 October, Vancouver, Canada. Dr. Khan received the best paper award at the 9th International Conference on Micro-Electronics, Electromagnetics and Telecommunications (ICMEET-2024) for his paper titled ”Design and Investigation of a Small Quasi-Self-Complementary UWB Implantable Antenna”.

His research interests include wearable antennas and radios, AI, IoT, blockchain, machine learning, deep learning, explainable AI, mobile and web application development, virtual reality, augmented reality, computer vision, small compact, smart and multiband antennas, body-centric wireless communications, electromagnetism, cognitive radio, electrically small antennas, smart cooperative network: personal and body area network, radio channel modelling, remote healthcare, smart telemedicine, biomedical engineering, power electronics, healthcare engineering, environment and health, wireless sensor network, narrowband antennas and radio channel, UWB antennas and radio channel, mmWave antennas, THz antennas, MIMO antenna, Array antenna,5G and beyond.

Dr. Khan has authored and co-authored more than 308 peer-reviewed leading journals, international conferences and book chapters. He is an active reviewer of IEEE Transactions on Antennas and Propagations, IEEE Magazine on Antenna and Propagation, MDPI, HINDAWI, Tech Science Press, IEEE Antenna and Wireless Propagation Letter, IEEE Communication Letter, IET Microwaves Antennas & Propagation, Wireless Personal Communications, Springer, Multimedia Systems, International Journal on Communications Antenna and Propagation, International Journal of Microwave and Wireless Technologies and numerous IEEE Conferences.

Research Areas

- Mobile, Wireless and Web Applications Development
- Modeling and Simulation
- RF, Microwave and Communication Technology
- Cloud Computing and Distributed Systems
- Embedded Systems and Internet of Things (IoT)
- Power Systems and Renewable Energy
- Artificial Intelligence & Robotics

Research Interests

- Wearable Antennas and Radios
- Compact, Smart and Multiband Antennas
- Body-centric Wireless Communications

- Radio Channel Modelling
- Remote Healthcare
- Health Informatics
- UWB Antennas and System
- Augmented Reality and Virtual Reality
- Bio Medical Engineering ad Public Health
- Mobile and Cloud Computing
- IoT for Healthcare and other Applications, IoTM for Healthcare
- THz Antenna and System
- Millimetre-Wave Antennas and System for the 5G
- Renewable Energy
- State of Charge (SOC)
- Power Electronics
- Blockchain Technology
- Deep Learning
- AI
- Machine Learning
- Textile, Conformal and Flexible Antenna System
- Personal and Body Area Network
- Sensors Networks
- Web and Mobile Application Development
- e-Commerce (Big Data and Machine Learning)
- Computer Vision and Robotics
- COVID-19

Teaching

- EEE 111/ ETE 111 Analog Electronics-I
- EEE 111L/ ETE 111L Analog Electronics-I Lab
- EEE 141 Electrical Circuits I
- EEE 141L Electrical Circuits I Lab
- EEE 211 Digital Logic Design
- EEE 211L Digital Logic Design Lab
- EEE 321 Introduction to Communications Systems
- EEE 321L Introduction to Communications Systems Lab
- EEE 532 Radar Systems Analysis and Design
- EEE 533 Digital Communications
- EEE 542 Advanced Antenna Theory and Design
- EEE 540 RF & Microwave Engineering and Applications
- CSE499A/EEE499A/ETE499A – Senior Design I
- EEE 499A Senior Design Project I
- ETE 499A Senior Design Project I
- CSE 231 Digital Logic design
- CSE 231L Digital Logic design Lab
- CSE 299 Junior Design Course
- CSE499B/EEE499B/ETE499B – Senior Design II

- EEE 299 Junior Design Project I
- CSE 498/EEE 498/ETE 498 Internship/Co-op/Directed Research
- EEE 498 Internship/Co-op
- EEE 600 Graduate Thesis

Selected Publications

Journals

- Mohammad Monirujjaman Khan, Qammer H. Abbasi, Akram Alomainy, Clive Parini and Yang Hao, **"Experimental Characterisation of Ultra-Wideband Off-Body Radio Channels Considering Antenna Effects,"** *IET Microwaves, Antennas & Propagation, Volume 7, Issue 5, pp 370-380*, 2013
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- Mohammad Monirujjaman Khan, Md. Azizur Rahman, Md. Abu Talha, **"Wearable Antenna for Power Efficient On-Body and Off-Body Communications,"** *Journal of Electromagnetic Analysis and Applications, 6, pp. 238-243*, 2014
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- Mohammad Monirujjaman Khan, Ratil Hasnat Ashique, et al. , **"New Wavelet Thresholding Algorithm in Dropping Ambient Noise from Underwater Acoustic Signals,"** *Journal of Electromagnetic Analysis and Applications, Vol. 7, No. 3, pp. 53-60*, 2015
- Mohammad Monirujjaman Khan, Ratil Hasnat Ashique and Md. Raqibull Hasan , **"Study of UWB On-Body Radio Channel for Ectomorph, Mesomorph and Endomorph Body Types,"** *Journal of Telecommunications, Vol. 29, Issue 2, pp.18-22*, 2015
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- Sumaiya Tarannum Noor, SyedaTasmiah Asad, Mohammad Monirujjaman Khan et al., , **"Predicting the Risk of Depression Based on ECG Using RNN,"** *Computational Intelligence and Neuroscience, (Impact Factor 3.633, Scopus Indexed), Article ID 1299870. vol. 2021, pp. 1-12. https://doi.org/10.1155/2021/1299870*, 2021
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- Abid Hassan, MD. Iftekhar Ali, Rifat Ahammed and Mohammad Monirujjaman Khan , **"Secured Insurance Framework Using Blockchain and Smart Contract,"** *Scientific Programming, (Impact Factor 1.025 and Scopus indexed).*, 2021
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- Mohammad Monirujjaman Khan, Md. Mujtabir Alam, **"Research and Development of A Low Cost Smart Cardio Pulmonary Resuscitation (CPR) Device Using Locally Available Raw Materials for Cardiac Arrest Patients,"** *1st International Electronic Conference on Applied Sciences, 15 —30 November 2020, Multidisciplinary Digital Publishing Institute (MDPI). Proceedings 2020, 67(1), 10,2020. https://www.mdpi.com/2504-3900/67/1/10*, 2020
- Mohammad Monirujjaman Khan, Tahia Tazin, Tabia Hossain, **"An Automatic Blood Cell Separation Machine with Disease Detection System: Perspective in Bangladesh,"** *1st International Electronic Conference on Applied Sciences, 10 —30 November 2020, Multidisciplinary Digital Publishing Institute (MDPI). Proceedings 2020, 67(1), 9, 2020. https://www.mdpi.com/2504-3900/67/1/9*, 2020
- Mohammad Monirujjaman Khan, Tahia Tazin, Tabia Hossain, **"Development of Wireless Monitoring System for Pulse Rate: A New Approach,"** *1st International Electronic Conference on Applied Sciences, 10 —30 November 2020, Multidisciplinary Digital Publishing Institute (MDPI). Proceedings 2020, 67(1), 13, 2020. https://www.mdpi.com/2504-3900/67/1/13*, 2020
- Mohammad Monirujjaman Khan, Arifa Sultana, **"Novel and Compact Ultra Wideband Wearable Band-notch Antenna Design for Body Sensor Networks and Mobile Healthcare System,"** *1st International Electronic Conference- Futuristic Applications on Electronics,01-30 November 2020. Multidisciplinary Digital Publishing Institute (MDPI), Eng. Proc. 2020, 2(1), 89, 2020. https://www.mdpi.com/2673-4591/3/1/1*, 2020
- Mohammad Monirujjaman Khan, **"Design and Analysis of A Compact UWB Band Notch Antenna for Wireless Communication,"** *1st International Electronic Conference- Futuristic Applications on Electronics, 01 —30 November 2020. Multidisciplinary Digital Publishing Institute (MDPI), Eng. Proc. 2020, 3(1), 1, 2020. https://www.mdpi.com/2673-4591/3/1/6*, 2020
- Nusrat Jahan, Tasfiqul Ghani, Sadman Hossain Ridoy, Md. Saif Khan, Mohammad Monirujjaman Khan, **"Design and Feasibility Analysis of An Artificial Intelligence Based Mobile App for Maintaining Kinship in An Affinity Group,"** *The Second International Conference of Sustainability and Resilience, November 11-12, 2020, University of Bahrain. pp. 1-5, doi: 10.1109/IEEECONF51154.2020.9319995.*, 2020
- Mohammad Monirujjaman Khan, Chowdhury Majedur Rahman, Hasan Mahmood Meem, Zariful Islam, **"Harvesting Energy Using A portable Thermoelectric Generator,"** *The Second International Conference of Sustainability and Resilience, November 11-12, 2020, University of Bahrain. pp. 1-5, doi: 10.1109/IEEECONF51154.2020.9319990.*, 2020
- Tanzil Shahria ; Kimia Tuz Zaman ; Sabrina Rabbi ; Mohammad Monirujjaman Khan, **"Underwater Research and Rescue Robot,"** *IEEE International Conference on Electrical, Computer and Communication Technologies (ICECCT)*, 2019
- Mumtahina Huda Mahi, Tasnim Tarannoom , Md. Anisul Islam , Mohammad Monirujjaman Khan, **"A Web Based Interactive System to Promote Ict Education in Bangladesh,"** *14th International Conference on Computer Science & Education (ICCSE), Toronto, ON, Canada.* , 2019

- Md. Mujtabir Alam ; Md. Ashik Amin ; Mahamud Hussain ; Rokibul Hasan Bhuiyan ; Mohammad Monirujjaman Khan, **"Design of Piston-Driven Automated Cardiopulmonary Resuscitation Device with Patient Monitoring System,"** *International Conference on Robotics,Electrical and Signal Processing Techniques (ICREST)*, 2019
- Md. Mujtabir Alam ; Mahamud Hussain ; Md. Ashik Amin ; Mohammad Monirujjaman Khan, **"Design of a Low-cost Automated Cardiopulmonary Resuscitation Device with Piston-Driven Chest Compression System,"** *4th International Conference on Electrical Engineering and Information & Communication Technology (iCEEiCT)*, 2018
- Hasan, W.U., Sultan Khaja, M., Ahmed, S., Khan, M.M., **"Wireless Health Monitoring System,"** *2nd Borneo International Conference on Applied Mathematics and Engineering, BICAME, Indonesia, 2018. (Received Best Presenter Award).*, 2018
- Fayezah Anjum ; Abu Saleh Mohammed Shoaib ; Abdullah Ibne Hossain ; Mohammad Monirujjaman Khan, **"Online Health Care,"** *8th Annual Computing and Communication Workshop and Conference (CCWC), Las Vegas, NV, USA*, 2018
- Tasfiqul Ghani ; Nusrat Jahan ; Sadman Hossain Ridoy ; Abu Talha Khan ; Saif Khan ; Mohammad Monirujjaman Khan , **"Amar Bangladesh – A Machine Learning Based Smart Tourist Guidance System,"** *2nd International Conference on Electronics, Materials Engineering & Nano-Technology (IEMENTech)*, 2018
- Fatin Hasnath Chowdhury ; Rashik Nahian ; Taki Uddin ; Sifat Rezwan ; Monirujjaman Khan ; Abu Sufian ; Nazmul Hassan, Jawad Ishaque, Saad Ahmed Akash, Nazia Nawar Hassan, **"Design, control & performance analysis of forecast junction IoT and swarm robotics based system for natural disaster monitoring,"** *8th International Conference on Computing, Communication and Networking Technologies (ICCCNT)*, 2017
- Tanveer Reza ; Sarah Binta Alam Shoilee ; Sirajum Munira Akhand ; Mohammad Monirujjaman Khan, **"Development of Android Based Pulse Monitoring System,"** *Second International Conference on Electrical, Computer and Communication Technologies (ICECCT)*, 2017
- Yasin Kabir, Yusuf Mohammad Mohsin, Mohammad Monirujjaman Khan, **"Automated Power Factor Correction and Energy Monitoring System,"** *Second International Conference on Electrical, Computer and Communication Technologies (ICECCT)*, 2017
- Shakil Ahmed, Nafis Farhan, Alimuddin Ahmed Ashfaq, Mohammad Monirujjaman Khan, **"Development of Smart Communication System for the Autistic and the Disabled,"** *19th International Conference on Computer and Information Technology (ICCIT)*, 2016
- Koushik Roy , Nur Islam , Tarango Khan, Mohammad Monirujjaman Khan, **"A novel Approach to Data Storage Using Blockchain Technology,"** *2019 International Conference on Information Technology (ICIT)*, 2019
- Mohammad Monirujjaman Khan, **"Compact Printed Ultrawide Band Antenna for Body-Centric Wireless Communications,"** *International Conference on Physics for Energy and Environment, 06-08 March, 2014, Atomic Energy Centre. Session Innovative Technology (Invited Talk)* , 2014
- Mohammad Monirujjaman Khan, Md. Azizur Rahman, Akram Alomainy and Clive Parini, **"Ultra Wideband On-Body Radio Propagation Channels Study for Different Real Human Test Subjects with Various Sizes and Shapes,"** *2nd International*

Conference on Advances in Electrical Engineering, (ICAEE), 19-21 December, 2013. Received Dr. Fatema Rashid Best Paper Award (First Position). , 2013

- Mohammad Monirujjaman Khan, **"Study of Ultra Wideband Wireless Sensors for Body Area Networks,"** *1st International Conference on Electrical Engineering and Information & Communication Technology (ICEEICT), 10-12 April, 2014. Received Best Poster Paper Award (First Position).* , 2014
- Mohammad Monirujjaman Khan, **"Dynamic Ultra Wideband Radio Propagation Channel Study for Healthcare Applications,"** *10th Global Engineering, Science and Technology Conference, 2-3 January, 2015. Received Best Paper Award.*, 2015
- Mohammad Monirujjaman Khan, **"Performance of Different Ultra Wideband Antennas for Off-Body Radio Propagation,"** *3rd International Conference on Informatics, Electronics, and Vision (ICIEV) Technology, 23-24 May*, 2014
- Mohammad Monirujjaman Khan, **"Comprehensive Study of On-Body Radio Channels at 2.45 GHz for Different Human Test Subjects,"** *1st International Conference on Electrical Engineering and Information & Communication Technology (ICEEICT), 10-12 April*, 2014
- Mohammad Monirujjaman Khan, Qammer H. Abbasi, Akram Alomainy, Clive Parini and Yang Hao, **"Dual-Band and Dual-Mode Antenna for Power-Efficient Body-Centric Wireless Communications,"** *IEEE International Symposium on Antennas and Propagation (APS), July 3-8, 2011, Spokane, Washington, USA*, 2011
- Mohammad Monirujjaman Khan, Qammer H. Abbasi, Akram Alomainy and Yang Hao, **"Investigation of Body Shape Variations Effect on the Ultra Wideband On-Body Radio Propagation Channel,"** *International Conference in Electromagnetics in Advanced Applications (ICEAA), September 12-17, 2011, Torino, Italy*, 2011
- Mohammad Monirujjaman Khan, Md. Azizur Rahman, Akram Alomainy and Clive Parini, **"On-Body Radio Channel Performance of a Small Printed Quasi-Self-Complementary Ultra Wideband Antenna,"** *2nd International Conference on Advances in Electrical Engineering, (ICAEE-2013), 19-21 December*, 2013
- Mohammad Monirujjaman Khan, Qammer H. Abbasi, **"On and Off-Body Path Loss Model Using Planar Inverted F Antenna,"** *Annual Research Conference (ARC), 14, November 18-19, 2014, Qatar Foundation Annual Research Conference Proceedings, Qatar National Convention Centre in Doha.* , 2014
- Mohammad Monirujjaman Khan, Qammer H. Abbasi, Akram Alomainy and Yang Hao, **"Radio Propagation Channel Characterisation Using Ultra Wideband Wireless Tags for Body-Centric Wireless Networks in Indoor Environment,"** *IEEE International Workshop on Antenna Technology (IWAT), 7-9 March, Hong Kong, 2011. (Shortlisted for best paper award).*, 2011
- Mohammad Monirujjaman Khan, Qammer H. Abbasi, Akram Alomainy and Yang Hao, **"Ultra Wideband Wireless Tags for Off-Body Radio Channel Characterisation with Varying Subject Postures,"** *14th European Microwave Week, 9th-14th October 2011, Manchester Central, Manchester, UK.*, 2011
- Mohammad Monirujjaman Khan, Qammer H. Abbasi, Akram Alomainy and Yang Hao, **"Study-of-Line-of-Sight (LoS) and Non-Line-of-Sight (NLoS) Ultra Wideband Off-Body Radio Propagation for Body-Centric Wireless Communications in Indoor,"** *5th European Conference on Antennas and Propagation (EuCAP), Rome, Italy,11-15 April* , 2011

- 15. Mohammad Monirujjaman Khan, Akram Alomainy and Yang Hao, **"Characterisation of Dynamic Radio Propagation Channels in Body-Centric Wireless Networks Using Ultra-Wideband Wireless Tags,"** *Loughborough Antennas & Propagation Conference (LAPC), 8-9 November 2010, Loughborough, UK*, 2010
- Qammer H. Abbasi, Mohammad Monirujjaman Khan, Akram Alomainy and Yang Hao, **"Characterization and Modelling of Ultra Wideband Radio Links For Optimum Performance Of Body Area Network in Health Care Applications,"** *IEEE International Workshop on Antenna Technology (IWAT), 7-9 March, 2011, Hong Kong. (Shortlisted for best paper award).*, 2011
- Qammer H. Abbasi, Mohammad Monirujjaman Khan, Akram Alomainy, Yang Hao, **"Diversity Antenna Techniques for Enhanced Ultra Wideband Body-Centric Communications,"** *IEEE International Symposium on Antennas and Propagation (APS), July 3-8, 2011, Spokane, Washington, USA*, 2011
- Mohammad Monirujjaman Khan, Qammer H. Abbasi, Akram Alomainy, and Yang Hao, **"Effect of Various Subject Postures on Ultra Wideband Body Sensor Network Performance,"** *IET Seminar on Antennas and Propagation for Body-Centric Wireless Communications, 27 June 2011, London, UK.* , 2011
- Qammer H. Abbasi, Mohammad Monirujjaman Khan, Akram Alomainy and Yang Hao, **"Sectorial Radio Channel Characterisation for Ultra Wideband Body-Centric Wireless Communications,"** *5th European Conference on Antennas and Propagation, EuCAP, Rome, Italy, 11-15 April* , 2011
- Qammer H. Abbasi, Mohammad Monirujjaman Khan, Akram Alomainy, and Yang Hao, **"Radio Channel Characterisation and OFDM-based Ultra Wideband System Modelling for Body-Centric Wireless Networks,"** *International Conference on Body Sensor Networks (BSN), May 22, 2011, Dallas, USA*, 2011
- Mohammad Monirujjaman Khan, Akram Alomainy and Yang Hao, **"Off-Body Radio Channel Characterisation Using Ultra Wideband Wireless Tags,"** *International Conference on Body Sensor Networks (BSN), June 7 – 9, 2010, Biopolis, Singapore.*, 2010
- Qammer H. Abbasi, Mohammad Monirujjaman Khan, Akram Alomainy and Yang Hao, **"Characterisation of Ultra Wideband Body-Centric Radio Channel Dependency on Angular and Spatial Variations,"** *14th European Microwave Week, 9th-14th October 2011, Manchester Central, Manchester, UK.*, 2011
- Mohammad Monirujjaman Khan, Musa Magani, Atiqur Rahman and Clive Parini, **"A Dual Band Planar Inverted F Antenna for Body-Centric Wireless Communications,"** *3rd Annual Passive RF and Microwave Components Seminar, 26th March, Savoy Place, London, UK.* , 2012
- Qammer H. Abbasi, Mohammad Monirujjaman Khan, Akram Alomainy, and Yang Hao, **"Ultra Wideband Low Power System Modelling for Body-Centric Wireless Networks,"** *IET Seminar on Antennas and Propagation for Body-Centric Wireless Communications, 27 June 2011, London, UK.*, 2011
- Qammer H. Abbasi, Mohammad Monirujjaman Khan and Clive Parini, **"Second Order Statistics for UWB On-Body Radio Channels,"** *IEEE Wireless Telecommunication Symposium (WTS), 18-20 April, London, UK.*, 2012
- Mohammad Monirujjaman Khan, Qammer H. Abbasi, Atiqur Rahman and Clive Parini, **"Ultra Wideband Off-Body Radio Channel Characterisation and Modelling for**

Healthcare Applications," *IEEE Wireless Telecommunication Symposium (WTS), 18-20 April, London, UK.*, 2012

- Mohammad Monirujjaman Khan, Iftekharul Mobin, Efthymios Kallos, George K Palikaras, **"Study of a Small Printed Quasi-Self-Complementary Ultra Wideband Antenna for On-Body Applications,"** *4th Computer science and Electronic Engineering Conference, (CEEC), 12th-13th September 2012, UK. (Shortlisted for best paper award).*, 2012
- Iftekharul Mobin, Mohammad Monirujjaman Khan, **"Energy Efficient Transmission Power Estimation for WLAN VoIP,"** *4th Computer Science and Electronic Engineering Conference, (CEEC), 12th-13th September 2012, University of Essex, UK.* , 2012
- Mohammad Monirujjaman Khan, Qammer H. Abbasi, Akram Alomainy, Yang Hao and Clive Parini, **"Ultra Wideband On-Body Radio Channel Measurements Using Wireless Sensors,"** *International Conference on Electrical, Computer and Telecommunication Engineering (ICECTE), 01-02 December* , 2012
- Mohammad Monirujjaman Khan, Abdullah-Al-Mamun, Rifat Afroze, and Akram Alomainy, **"Study of Two Different Receiver Antennas for Ultra Wideband Off-body Radio Propagation Channels,"** *International Conference on Electrical, Computer and Telecommunication Engineering (ICECTE-2012), 01-02 December* , 2012
- Qammer H Abbasi, Mohammad Monirujjaman Khan, Akram Alomainy and Yang Hao, **"Ultra Wideband Off-Body Radio Channel Characterisation for Different Environments,"** *7th International Conference on Electrical and Computer Engineering (ICECE), 20-22 December* , 2012
- Mohammad Monirujjaman Khan, Qammer H. Abbasi, Akram Alomainy, Yang Hao and Clive Parini, **"On-Body Radio Channel Measurements for Three Different Human Body Sizes,"** *15th International Conference on Computer and Information Technology, 22-24th December*, 2012
- Mohammad Monirujjaman Khan, Qammer H. Abbasi, Akram Alomainy and Clive Parini, **"Investigation of Performance Parameters of Different Wearable Narrowband Antennas in Close Proximity to the Human Body,"** *15th International Conference on Computer and Information Technology, 22-24th December*, 2012
- Mohammad Monirujjaman Khan, **"Comparison of Narrowband and Ultrawide Band Subject-Specific On-Body Radio Channel Studies for Healthcare Applications,"** *2nd International Conference on Green Energy and Technology, 5-6 September* , 2014
- Mohammad Monirujjaman Khan, **"Dynamic Off-Body Radio Propagation Channel Modelling Using Different Ultra Wideband Reader Antennas,"** *Electronics and Information Engineering (ICMEIE), Feb. 27-28*, 2015
- Mohammad Monirujjaman Khan, **"Antenna Design for Power-Efficient Communications in Advanced Personal and Body Area Networks,"** *National Conference on Physics Research and Education in Bangladesh, Bangladesh Physical Society (BPS), April 24, Atomic Energy Centre, Dhaka*, 2015
- Md. Raqibull Hasan, Mohammad Monirujjaman Khan, **"Efficiency Improvement of InxGa1−xN/GaN Quantum Dot Intermediate Band Solar Cell,"** *National Conference on Physics Research and Education in Bangladesh, Bangladesh Physical Society (BPS), April 24, Atomic Energy Centre, Dhaka.*, 2015
- Md. Raqibull Hasan, Mohammad Monirujjaman Khan, S. Paul, **"Investigation of Comparative I-V Characteristics between InGaAs Based Quantum Well and Quantum**

Wire Intermediate Band Solar Cell," *National Conference on Physics Research and Education in Bangladesh, Bangladesh Physical Society (BPS), April 24, Atomic Energy Centre*, 2015

- Mohammad Monirujjaman Khan, **"Path Loss Model of a Dual Band and Diverse Radiation Antenna for Cooperative On and Off-Body Communications,"** *International Conference on Electrical & Electronic Engineering (ICEEE), 4-6 November, 2015.* , 2015
- Md. Raqibull Hasan, Mohammad Monirujjaman Khan, **"Design and Implementation of a Home Security System,"** *, International Conference on Electrical & Electronic Engineering (ICEEE), 4-6 November, 2015.* , 2015
- Md. Raqibull Hasan, Mohammad Monirujjaman Khan, **"Performance Investigation of InxGa1-xAs/GaAs QW and GaAs Homojunction Solar Cell,"** *International Conference on Electrical & Electronic Engineering (ICEEE), 4-6 November.* , 2015

Book Chapters

- Jeetendra Singh, Balwant Raj Balwant Raj and Mohammad Monirujjaman Khan, **"Role of High-Performance VLSI in the Advancement of Healthcare Systems,"** *In book: Advanced Circuits and Systems for Healthcare and Security Applications, 1st Edition, CRC Press, eBook ISBN9781003189633, July 2022.*, 2022

Others

- Balwinder Raj, B Gupta, B Gupta Shalendra Singh and Mohammad Monirujjaman Khan, **"Distributed Intelligent Circuits and Systems,"** *World Scientific, https://doi.org/10.1142/13505, ISBN: 978-981-127-952-2* , 2023

Research Projects & Grants

An Integrated Architecture for Cloud and IoT based Smart City: Smart Healthcare Perspective, Funding Body-UIU/IAR/01/2021/SE/27, Duration: 1 year (2021/2022). Grant amount: BD Taka 499000.

Development of A Web and Application Based Online Smart Healthcare System, Funding Body- ICT Ministry, Bangladesh: 1 year (2018/2019). Grant amount: BD Taka 1000000.

Development of Remote Patient Monitoring System Using Wearable Sensors, Access to Information Program (a2i), Prime Minister's Office, Bangladesh. Year 2016-2017. Grant Amount: BD Taka 19,65000.

Compact and efficient ultra wideband antenna system design for body-centric wireless communications, Funding Body-Ministry of Science and Technology (MOST), Bangladesh: 1 year (2014/2015).

Implantable Antenna Solutions for In-Vivo Dosimetry Medical Sensor Devices, Engineering and Physical Science Research Council (EPSRC) funded IMPACT QM project (Dec,2011-June, 2012). (£10000)

Smart On-Body Wireless Sensor Networks for Healthcare Applications, Innovation China UK (ICUK, PI, 2009), Queen Mary University of London (£6000).

Professional Activity

Invited Speaker: *International Conference on Physics for Energy and Environment,* 06-08 March, 2014, Atomic Energy Centre, Dhaka, Bangladesh, Organized by the Bangladesh Physical Society (BPS). (Session Innovative Technology).

Session Chair: *2nd International Conference on Advances in Electrical Engineering*, (ICAEE-2013), Technical Session 5-2: Wireless Sensing Devices and Systems-II

Session Chair: 3rd *International Conference on Advances in Electrical Engineering*, (ICAEE-2015), Technical Session: Bio-medical Systems and Applications

Reviewer: The 1st Bangladesh Electronics Olympiad 2015

Technical Program Committee: Third International Symposium on Intelligent Informatics (ISI'14) 24-27 September, 2014, Delhi, India.

Technical Program Committee: *IEEE Wireless Telecommunication Symposium (WTS 2012)*

Technical Program Committee: International Conference on Computational Intelligence and Communication Networks (CICN 2015)

Member of Local Organising Committee: Third International Congress on Advanced Electromagnetic Materials in Microwaves and Optics, Queen Mary University of London, UK

Reviewer: IEEE Transactions on Antennas and Propagations (2010-present)

Reviewer: IEEE Magazine on Antenna and Propagation (2010-present)

Reviewer: IEEE Antenna and Wireless Propagation Letter (2010-present)

Reviewer: IEEE Communication Letter (2010-present)

Reviewer: IET Microwaves Antennas & Propagation (2010-present)

Reviewer: Wireless Personal Communications, Springer (2012-present)

Reviewer: International Journal on Communications Antenna and Propagation (2014-present)

Reviewer: International Journal of Microwave and Wireless Technologies (2014-present)

Reviewer: Numerous IEEE Conferences (2009-present)

Member: IEEE, IET

Workshop: MATLAB, University of Liberal Arts Bangladesh

DR. MAHDY RAHMAN CHOWDHURY [MDY]

Associate Professor

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Email: mahdy.chowdhury@northsouth.edu

Website: https://sites.google.com/view/nsuopticslab/home

Google Scholar
URL: https://scholar.google.com.sg/citations?hl=en&user=PxNOguMAAAAJ&view_op=list_works

Scopus Profile: https://www.scopus.com/authid/detail.uri?authorId=56524254800

Biography

NOTABLE ACHIEVEMENTS & CONTRIBUTIONS:

Mahdy Rahman Chowdhury (initial: Mdy) is currently working as an Associate Professor (effective from 1st May 2019), **Department of Electrical and Computer Engineering (full time) and Dept. of Math & Phys. (part-time)** at North South University(NSU), Dhaka, Bangladesh. Just after submitting his PhD thesis, he joined as an Assist. Professor at North South University, in January 2017. He is also the current chair of scientific review committee (SRC) of school of engineering & physical science (SEPS), NSU [effective from 1st January 2025], which consists of four departments: ECE, Dept. of math & physics, Dept. of civil & env. eng. & Architecture.

He is the 1st Bangladeshi researcher who has won (in 2023) the ICO Galilio Galilei medal award (or any award of ICO) of international commission for Optics. List of winners (from 1994): https://www.e-ico.org/blog/awards/galileo-medal/

– It appears that he is the youngest winner so far among all the winners since 1994.
Newsletter of ICO, January 2024, covering the detailed news & his international recognition: https://www.e-ico.org/blog/wp-content/uploads/2024/02/ICO_news_jan_24.pdf

He has received the ICO Galileo Galilei medal award in the 26th congress of international commission for optics, Capetown, South Africa (October 24th, 2024) in the presence of the Nobel laureates and distinguished scientists. He was also one of the plenary speakers of that prestigious conference where two Nobel laureates of physics also presented their works:
https://thefinancialexpress.com.bd/education/dr-mahdy-rahman-chowdhury-of-nsu-awarded-galileo-galilei-medal-at-icos-26th-conference
List of plenary speakers in ICO's 26th congress: https://ico26.com/plenary-speakers/

He has established a big research group (known as NSU OPTICS, QUANTUM & MACHINE LEARNING group) & a research lab [NSU OPTICS LAB] at NSU: https://sites.google.com/view/nsuopticslab/members?authuser=0

– He simultaneously supervises 4 completely different (but interconnected) research groups covering 4 distinct research areas:

1. **Optics/Photonics/Electromagnetics 2.Quantum Mechanics 3. Quantum Computing & Information 4. AI (Machine or Deep Learning)**

For more about 4 groups, visit this page: https://sites.google.com/view/nsuopticslab/home

His recent journal articles in all the 4 distinct areas can be found in his google scholar: https://scholar.google.com.sg/citations?hl=en&user=PxNOguMAAAAJ&view_op=list_works&sortby=pubdate

Several RAs & research students of this lab/ research group have gone for direct PhD (with full scholarship) in the top ranked universities of the world (**including Cornell university, Johns Hopkins university, National University of Singapore, University of California San Diego** & so on) after publishing top quality journals under his direct supervision. A partial alumni list of the students & RAs of his lab:
https://sites.google.com/view/nsuopticslab/alumni?authuser=0

*** **He has authored a textbook [University level] of basic Electromagnetism & Optical Physics in 2021 [in Bengali]: https://www.rokomari.com/book/212629/alo-o-torit-chumbok**

SHORT BIOGRAPHY & OVERALL PROFILE:

He was born 12th October 1987. He passed SSC (2003) and HSC (2005) from Pabna Cadet College. Later, he secured 13th merit position in BUET admission test 2005. In February 2011, he received B.Sc. degree in Electrical and Electronic Engineering (EEE) from BUET, Bangladesh. After that he was a lecturer (full time) in University of Asia Pacific and (later) in Presidency University (full time), Bangladesh. Later, he started his PhD as a direct PhD student (without MSc) in Electrical and Computer Engineering dept., National University of Singapore, Singapore from January, 2013. He submitted his PhD thesis at the end of 2016 (**PhD Supervisor: Prof. Qiu Cheng Wei**). In his PhD, he worked on the theory of electromagnetic/optical force and optical manipulations. Official date of his PhD degree confirmation: 30th April, 2017.

So far **(2011-2024; 13 years)** he has published **52 peer reviewed international journals** (with moderate to high impact factor) including **five** in **Nature Publishing Group** , **11** refereed conference articles, **one** international book chapter and **one text book of physics in Bengali language.** His total (cumulative)impact factor of published 52 journals is around 200 and his total google scholar citations is around 2000 (with h-index 21; i-10 index 38). His all publications (in details) are available in his google scholar page and Research gate profile. He has published 39 journals [total (cumulative) impact factor around 150] after joining NSU (2017-2024).

Notably, his one theoretical journal, with all Bangladeshi authors **(mostly undergraduate students)**, published as the cover story of Q1 international physics journal – Annalen Der Physik in December, 2015. He was the corresponding author. **After joining North South University (NSU), Among his several published journals, two articles have been published in very high impact factor journals with the affiliation of Bangladesh and NSU: (i) Nature Publishing Group's journal: Light Science and Applications (impact factor around 18 in 2023) and ACS NANO (impact factor over 18 in 2023).**

He has won 2018 TWAS international research grant (physical science & engineering). **In 2021, North South University has awarded him as one of the best researchers of SEPS (NSU) for his contribution in research during the years of 2018-2020. He has also won UGC GOLD MEDAL AWARD 2018 in physical science (announced: 7th November, 2021). This award is handed over by the President of the People's Republic of Bangladesh.** In 2023, North South University has awarded him again as one of the best researchers of SEPS (NSU) for his contribution in research during the years of 2021-2022. So far, NSU has awarded (the best researcher award) twice and both times he has been placed among the top three researchers of SEPS. He is the 1st Bangladeshi researcher who has won (in 2023) the ICO Galilio Galilei medal award (or any award of ICO) of international commission for Optics. List of winners (from 1994): https://www.e-ico.org/blog/awards/galileo-medal/
Newletter of ICO, January 2024, covering the detailed news & his international recognition: https://www.e-ico.org/blog/wp-content/uploads/2024/02/ICO_news_jan_24.pdf

He is a reviewer of several reputed international journals like Journal of Physical Chemistry (American Chemical Society), Annalen Der Physik, JOSA B (Optical Society of America) and IEEE AWPL. **He is now also an official reviewer of the journals of American Physical Society (Physical Review A; from**

2022). He is also an official reviewer of the journal: Nature Communications; from 2023 (impact factor around 20).

Research Areas

- RF, Microwave and Communication Technology
- Modeling and Simulation
- Mobile, Wireless and Web Applications Development
- Broadband Access and Communication Technologies
- Signals and Image Processing
- Artificial Intelligence & Robotics

Research Interests

His current research interests are primarily in Optical force/ manipulation, Photonics, Light matter interaction, Solar Sails, Metasurface design using AI, Quantum inspired metamaterial absorbers, Matter (quantum) wave tractor beams and lateral force, Quantum Computing & Information, Quantum-photonic secured communication, Quantum energy teleportation, Quantum Machine Learning, Application of AI in Biomedical and optical engineering, Applied Machine Learning & Artificial intelligence in optics & other areas (for early disease detection, for share market prediction etc), Antenna design, and Optical fiber theory/simulations.

Teaching

- EEE 361/ ETE 361 Electromagnetic Fields & Waves
- EEE 221 Signals and Systems
- EEE 499A Senior Design Project I
- CSE499A/EEE499A/ETE499A – Senior Design I
- EEE 141 Electrical Circuits I
- EEE 499B Senior Design Project II
- CSE499B/EEE499B/ETE499B – Senior Design II
- PHY 108 Physics II
- CSE 299 Junior Design Course
- EEE 111/ ETE 111 Analog Electronics-I

Research Projects & Grants

1. **TWAS international research grant 2018-19**
2. North South University internal research grant 2018-19
3. North South University internal research grant 2019-20

4. North South University internal research grant 2020-21
5. **North South University Research excellence award 2021 (top three; among around 100 faculty members of SEPS) [For his contribution in research during 2018-20]**
6. **UGC GOLD MEDAL 2018 (Physical Science [announced: 7th November, 2021]). This award is handed over by the President of the People's Republic of Bangladesh.**
7. North South University internal research grant 2021-22
8. **North South University Research excellence award 2023 (top three; among around 100 faculty members of SEPS) [For his contribution in research during 2021-22]**
9. North South University internal research grant 2022-23
10. North South University internal research grant 2023-24
11. **ICO Galilio Galilei medal award 2023 (1st Bangladeshi researcher) of international commssion for optics**

Professional Activity

(A) **Columnist in national daily newspapers regarding international cricket:**
So far his **thirty articles** have been published in different daily newspapers (regarding cricket),which can be found in this link:
https://www.facebook.com/mahdy.rahman.9/media_set?set=a.10203842736888818.1073741832.1232153392&type=3

(B) Reviewer of international journals:

* **Nature Communications**

* **Physical Review A**
*Annalen Der Physik
*JOSA B
*IEEE Antennas and Wireless Propagation Letters
*Progress In Electromagnetic Research
*Elsevier, two different journals

(C) NSU Optics, Machine Learning and Quantum Research Group
After joining North South University (NSU), Mahdy Rahman has established a research group at NSU with the motivated students (both from EEE & CSE) and faculty members. This group has published several high impact factor journals in last few years. Details of this group & their lab lab can be found at:

https://sites.google.com/view/nsuopticslab/home

(D) BUET ELECTROMAGNETICS AND METAMATERIAL RESEARCH GROUP:
This virtual research group was established by Mahdy Rahman in 2012. So far this group has published several international journals and conference articles. Five undergraduate thesis have already been co-supervised (unofficially) by Mahdy Rahman. Still going on …

(E) Writing of Text Books (University level):

He has authored a textbook [University level] of basic Electromagnetism & Optical Physics in 2021 [in Bengali]: https://www.rokomari.com/book/212629/alo-o-torit-chumbok

He is now also writing a new text book of Quantum Physics in Bengali language.

DR. SIFAT MOMEN [SFM1]

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Scopus Profile: https://www.scopus.com/authid/detail.uri?authorId=24438289700

Biography

Dr. Sifat Momen received his PhD degree in 2011 from the University of Sheffield, UK. In September 2017, Dr. Momen joined as an Assistant Professor in the department of Electrical and Computer Engineering (ECE) of North South University (NSU). He is currently employed in the same department as an Associate Professor. Prior to joining NSU, Dr. Momen worked as an Assistant Professor for nearly six years in the Department of Computer Science and Engineering at the University of Liberal Arts Bangladesh (ULAB). He also served as the acting Head of the Department at ULAB, for some time. His PhD research was at the crossroads of biology and engineering, and was heavily influenced by the behavior of eusocial insects, which are well-known for their self-organizing abilities. He was involved as an RA (Research Associate) within the ANTLab of the School of Biological Sciences at the University of Bristol, UK. His current research interests center around complex systems, machine learning, and information systems. He is an active researcher and regularly reviews numerous conference papers and journal articles.

Research Areas

- Artificial Intelligence & Robotics

Research Interests

Machine learning, Swarm intelligence, Social behavior

Teaching

- CSE 373 Design and Analysis of Algorithms
- CSE 445 Machine Learning
- CSE499A/EEE499A/ETE499A – Senior Design I
- CSE499B/EEE499B/ETE499B – Senior Design II

Selected Publications

Journals

- Md Shawmoon Azad, Shakirul Islam Leeon, Riasat Khan, Nabeel Mohammed, Sifat Momen, **"SAD: Self-assessment of depression for Bangladeshi university students using machine learning and NLP,"** *Array*, 2024
- Mritunjoy Chakraborty, Nishat Naowal, Sifat Momen, Nabeel Mohammed, **"ANALYZE-AD: A comparative analysis of novel AI approaches for early Alzheimer's detection,"** *Array*, 2024
- Alif Elham Khan, Mohammad Junayed Hasan, Humayra Anjum, Nabeel Mohammed, Sifat Momen, **"Predicting life satisfaction using machine learning and explainable AI,"** *Heliyon*, 2024
- Mehedi Hasan Bijoy, Nirob Hasan, Mithun Biswas, Suvodeep Mazumdar, Andrea Jimenez, Faisal Ahmed, Mirza Rasheduzzaman, Sifat Momen, **"Towards Sustainable Agriculture: A Novel Approach for Rice Leaf Disease Detection using dCNN and Enhanced Dataset,"** *IEEE Access*, 2024
- Md. Shawmoon Azad, Shadman Sakib Khan, Rezwan Hossain, Raiyan Rahman, Sifat Momen, **"Predictive modeling of consumer purchase behavior on social media: Integrating theory of planned behavior and machine learning for actionable insights,"** *PLoS ONE*, 2023
- Rokeya Siddiqua, Nusrat Islam, Jarba Farnaz Bolaka, Riasat Khan, Sifat Momen, **"AIDA: Artificial intelligence based depression assessment applied to Bangladeshi students,"** *Array*, 2023
- Kazi Rafat, Sadia Islam, Abdullah Al Mahfug, Md. Ismail Hossain, Fuad Rahman, Sifat Momen, Shafin Rahman, Nabeel Mohammed, **"Mitigating carbon footprint for knowledge distillation based deep learning model compression,"** *PLOS ONE*, 2023
- Md. Saiful Islam, Shuvo Jyoti Das, Md. Riajul Alam Khan, Sifat Momen, Nabeel Mohammed, **"Detection of COVID-19 and Pneumonia Using Deep Convolutional Neural Network,"** *Computer Systems Science and Engineering*, 2023
- Suvodeep Mazumdar, Sukaina Ehdeed, Andrea Jimenez, Faisal Ahmed, Sifat Momen, Mirza Rasheduzzaman , **"Understanding the information landscape in agricultural**

communities in rural Bangladesh," *The Electronic Journal of Information Systems in Developing Countries (EJISDC)*, 2022

- Jaynab Sultana, Sheikh Elhum Uddin Quadery, Fahad Rahman Amik, Tushar Basak, Sifat Momen, **"A Data-Driven Approach to Understanding the Impact of Covid-19 On Dietary Habits Amongst Bangladeshi Students,"** *Journal of Positive School Psychology*, 2022
- Fahad Rahman Amik, Akash Lanard, Ahnaf Ismat, Sifat Momen, **"Application of Machine Learning Techniques to Predict the Price of Pre-Owned Cars in Bangladesh,"** *Information*, 2021
- Badiuzzaman Pranto, Sk. Maliha Mehnaz, Esha Bintee Mahid, Imran Mahmud Sadman, Ahsanur Rahman, Sifat Momen, **"Evaluating Machine Learning Methods for Predicting Diabetes among Female Patients in Bangladesh,"** *Information*, 2020
- K.M. Faizullah Fuhad, Jannat Ferdousey Tuba, Md. Rabiul Ali Sarker, Sifat Momen, Nabeel Mohammed, Tanzilur Rahman, **"Deep Learning Based Automatic Malaria Parasite Detection from Blood Smear and its Smartphone Based Application,"** *Diagnostics*, 2020
- Imranul Ashrafi, Muntasir Mohammad, Arani Shawkat Mauree, Galib Md. Azraf Nijhum, Redwanul Karim, Nabeel Mohammed, Sifat Momen, **"Banner: A Cost-Sensitive Contextualized Model for Bangla Named Entity Recognition,"** *IEEE Access*, 2020
- Matiur Rahman, Nabeel Mohammed, Nafees Mansoor, Sifat Momen, **"Chittron: An Automatic Bangla Image Captioning System,"** *Procedia Computer Science*, 2019
- Umme Habiba Maliha, Syeda Benazir Hossain, Samsul Arefin Riffat, Sifat Momen, Shakhawat Hossain Mahi, **"To dine or not to dine: Can machine learning help?,"** *TIU Transaction on Intelligent Computing*, 2019
- Md. Riftabin Kabir, Nazmus Sakib Borson, Sifat Momen, Md. Sazzad Hossain, **"Forecasting sea level rise using machine learning techniques,"** *TIU Transaction on Intelligent Computing*, 2019
- Mithun Biswas, Gautam Kumar Shom, Rafiqul Islam, Md. Shopon, Nabeel Mohammed, Sifat Momen, Anowarul Abedin, **"BanglaLekha-Isolated: A multi-purpose comprehensive dataset of Handwritten Bangla Isolated characters,"** *Data in Brief*, 2017
- Tasnim Sami, Nabeel Mohammed, Sifat Momen, **"Learning "initial feature weights" for CBIR using query augmentation,"** *International Journal of Multimedia Information Retrieval*, 2016
- Sifat Momen, Kazi Tanjila Tabassum, **"Group Performance in a Swarm of Simulated Mobile Robots,"** *ULAB Journal of Science and Engineering*, 2015
- Sifat Momen, **"Ant-Inspired Decentralised Task Allocation Strategy in groups of Mobile Agents,"** *Procedia Computer Science*, 2013
- Sifat Momen , Khaled Mahmud, Mahbubul Alam Joarder, **"Performance Analysis of Task Allocation Strategies in Groups of Mobile Agents,"** *Journal of Electronics and Computer Science*, 2013

Conference Papers

- Shakirul Islam Leeon, Fahrin Hossain Sunaira, Shanila Nehlin, S.A.M. Zahin Abdal, Sifat Momen, **"A Machine Learning Approach for Early Detection of Learning Disorders in**

Pediatrics," *2024 International Conference on Advances in Computing, Communication, Electrical, and Smart Systems (iCACCESS)*, 2024

- Sadia Sultana, Israka Jahir, Mabeean Suukyi, Md. Mohibur Rahman Nabil, Afsara Waziha, Sifat Momen , **"Advancing Recidivism Prediction for Male Juvenile Offenders: A Machine Learning Approach Applied to Prisoners in Hunan Province,"** *Data Analytics in System Engineering*, 2024
- Md. Tareq Mahmud, Shayam Imtiaz Shuvo, Nafis Iqbal, Sifat Momen , **"Leveraging Deep Object Detection Models for Early Detection of Cancerous Lung Nodules in Chest X-Rays,"** *Data Analytics in System Engineering*, 2024
- Md. Farabi Mahbub, Warsi Omrao Khan Shuvo, Sifat Momen , **"Prediction of Glycemic Control in Diabetes Mellitus Patients Using Machine Learning,"** *Data Analytics in System Engineering*, 2024
- Fahad Bin Gias, Fahmida Alam, Sifat Momen, **"Anxiety Mining from Socioeconomic Data,"** *Artificial Intelligence Application in Networks and Systems*, 2023
- Abu Tareq, Abdullah Al Mahfug, Mohammad Imtiaz Faisal, Tanvir Al Mahmud, Riasat Khan, Sifat Momen, **"Evaluation of Artificial Intelligence-Based Models for the Diagnosis of Chronic Diseases,"** *Artificial Intelligence Application in Networks and Systems*, 2023
- Raisa Nusrat Chowdhury, Mohammad Fahim Hassan, Md. Arshaduzzaman Fahim, Sifat Momen, **"Stress Mining from Sleep-Related Parameters,"** *Proceedings of the Computational Methods in Systems and Software*, 2023
- S.M. Shahriar Ferdous Shovon, Md. Mahir Absar Bin Mohsin, Kanij Tamema Jahan Tama, Jannatul Ferdaous, Sifat Momen, **"CVR: An Automated CV Recommender System Using Machine Learning Techniques,"** *Proceedings of the Computational Methods in Systems and Software*, 2023
- Sadia Jahan Shanta, Anik Aich, Foyez Ullah Kabir, Sifat Momen, **"Predicting the Health Status of Cows Using Machine Learning,"** *Proceedings of the Computational Methods in Systems and Software*, 2023
- Sunjare Zulfiker, Ankur Chowdhury, Dip Roy, Shukdev Datta, Sifat Momen, **"Bangla E-Commerce Sentiment Analysis Using Machine Learning Approach,"** *4th International Conference on Sustainable Technologies for Industry 4.0 (STI)*, 2022
- Nusrat Islam, Rokeya Siddiqua, Sifat Momen, **"Machine Learning Techniques Applied To Bangla Crime News Classification,"** *2022 IEEE 2nd Conference on Information Technology and Data Science (CITDS)*, 2022
- Ferdous Zeaul Islam, Rifat Islam, Sifat Momen, **"Evaluation of Machine Learning Methods for Predicting Rainfall in Bangladesh,"** *2022 IEEE 2nd Conference on Information Technology and Data Science (CITDS)*, 2022
- Anika Mehjabin Oishi, Md. Tawfiq-Uz-Zaman, Mohammad Billal Hossain Emon, Sifat Momen , **"A Deep Learning Approach to Diabetic Retinopathy Classification,"** *In Cybernetics Perspectives in Systems – Proceedings of 11th Computer Science On-line Conference 2022, vol. 3*, 2022
- Sudipta Bhatta, Isfaf Uz Zaman, Nuzhat Raisa, Shazzadul Islam Fahim, Sifat Momen , **"Machine Learning Approach to Predicting Attrition Among Employees at Work,"** *In Artificial Intelligence Trends in Systems – Proceedings of 11th Computer Science On-line Conference, vol. 2, 2002*, 2022

- Kazi Rafat Haa Meem, Sadia Islam, Ahmed Omar Salim Adnan, Sifat Momen , **"Premature Birth Prediction Using Machine Learning Techniques,"** *In Artificial Intelligence Trends in Systems – Proceedings of 11th Computer Science On-line Conference, vol. 2, 2002*, 2022
- Mian Ahmed Jamiul Bari, Mohammad Imtiaz Faisal, Mahmud Hasan, Labiba Islam, Md Hossain, Sifat Momen, **"Preterm Birth Prediction of Pregnant Women in Post Conization Period Using Machine Learning Techniques,"** *In Artificial Intelligence Trends in Systems – Proceedings of 11th Computer Science On-line Conference, vol. 2, 2002*, 2022
- Ferdous Zeaul Islam, Ashfaq Jamil, Sifat Momen, **"Evaluation of Machine Learning Methods for Android Malware Detection using Static Features,"** *2021 IEEE International Conference on Artificial Intelligence in Engineering and Technology (IICAIET)*, 2021
- Hasin Shahed Shad, Zeeshan Jamal, S. M. Ahmed, Sifat Momen, Nafees Mansoor, **"Early Prediction of Chronic Kidney Disease Using Data Mining Techniques,"** *In Proceedings of the Computational Methods in Systems and Software*, 2021
- Mikhail Skorikov, Muhammad Abrar Hussain, Mahfujur Rhaman Khan, Mohammad Kaosain Akbar, Sifat Momen, Nabeel Mohammed, Taniya Nashin, **"Prediction of Absenteeism at Work using Data Mining Techniques,"** *2020 5th International Conference on Information Technology Research (ICITR)*, 2020
- Badiuzzaman Pranto, Sk Maliha Mehnaz, Sifat Momen, Syed Maruful Huq, **"Prediction of diabetes using cost sensitive learning and oversampling techniques on Bangladeshi and Indian female patients,"** *2020 5th International Conference on Information Technology Research (ICITR)*, 2020
- Shayekh Mohiuddin Ahmed Navid, Umme Kulsum Ritu, Nabiul Hoque Khandakar, Ishrat Jahan Ananya, Shawan Shurid, Nabeel Mohammed, Sifat Momen, **"Fingerprint Alteration Classification Using Convolutional Neural Network,"** *Proceedings of the Computational Methods in Systems and Software*, 2020
- Fahim Ahmed Shakil, Abu Hasnat Abdullah, Sifat Momen, Nabeel Mohammed, **"Predicting the Result of a Cricket Match by Applying Data Mining Techniques,"** *Proceedings of the Computational Methods in Systems and Software*, 2020
- Mikhail Skorikov, Sifat Momen, **"Machine learning approach to predicting the acceptance of academic papers,"** *2020 IEEE International Conference on Industry 4.0, Artificial Intelligence, and Communications Technology (IAICT)*, 2020
- Kawcher Ahmed, Tasmia Rahman Shahidi, Syed Md. Irfanul Alam, Sifat Momen, **"Rice leaf disease detection using machine learning techniques,"** *International Conference on Sustainable Technologies for Industry 4.0 (STI, 2019, IEEE)*, 2019
- Taskin Fatema, Alif Elahi Khan, Mithi Shams, Md Golam Saklain Hossain, Sifat Momen, **"Bazaar Mind: A virtual shopping assistant,"** *International Conference of Computer Science and Renewable Energies (ICCSRE)*, 2019
- Turzo Ahsan Sami, Sifat Momen, **"Optimization of energy consumption in swarms of robots,"** *International Conference of Computer Science and Renewable Energies (ICCSRE)*, 2019
- Sifat Momen, Shahed Khan, Nabeel Mohammed, Nafees Mansoor, **"Evolutionary search in the parameter spaces of the honeybee house-hunting model,"** *International Conference on Intelligent Autonomous Systems (ICoIAS 2018, IEEE)*, 2018

- Shahed Khan, Sifat Momen, Nabeel Mohammed, Nafees Mansoor, **"Patterns of Flocking in Autonomous Agents,"** *International Conference on Intelligent Autonomous Systems (ICoIAS 2018, IEEE)*, 2018
- Hasib Zunair, Nabeel Mohammed, Sifat Momen, **"Unconventional wisdom: a new transfer learning approach applied to Bengali numeral classification,"** *International Conference on Bangla Speech and Language Processing (ICBSLP)*, 2018
- Shakil Ahmed Sumon, Joydip Chowdhury, Sujit Debnath, Nabeel Mohammed, Sifat Momen, **"Bangla short speech commands recognition using convolutional neural networks,"** *International Conference on Bangla Speech and Language Processing (ICBSLP)*, 2018
- Mithun Biswas, Rafiqul Islam, Gautam Kumar Shom, Nabeel Mohammed, Sifat Momen, Nafees Mansoor, Anowarul Abedin, **"Application of image retrieval for aesthetic evaluation and improvement suggestion of isolated Bangla handwritten characters,"** *IEEE International Conference on Signal and Image Processing Applications (ICSIPA), 2017* , 2017
- Iftekharul Mobin, Nabeel Mohammed, Sifat Momen, **"Optimal range estimation for energy efficient dynamic packet size,"** *International Conference on Electrical, Computer and Communication Engineering (ECCE 2017, IEEE)*, 2017
- A Z M Shamsuddin, Turzo Ahsan, Ifrat Rahman, Sifat Momen, **"Trophallaxis and energy optimization in swarms of robots,"** *19th International Conference on Computer and Information Technology*, 2016
- Sifat Momen, Tamanna Islam Lima, Rian Siddika, **"Group decision by house-hunting agents in multi-robot systems,"** *2nd International Symposium on Agents, Multi-Agent Systems and Robotics (ISAMSR-2016, IEEE)*, 2016
- Shimul Hassan, Nabeel Mohammed, Sifat Momen, **"Learning from Tagore,"** *International Workshop on Computational Intelligence (IWCI-2016, IEEE)*, 2016
- Nusrat Jahan Farin, Nafees Mansoor, Sifat Momen, Iftekharul Mobin, Nabeel Mohammed, **"Sequence Classification: A regression based generalization of two-stage clustering,"** *International Workshop on Computational Intelligence (IWCI-2016, IEEE)*, 2016
- Nusrat Jahan Farin, Md. Nur Ahsan Ali Rimon, Sifat Momen, Mohammad Shorif Uddin, Nafees Mansoor, **"A framework for dynamic vehicle pooling and ride-sharing system,"** *International Workshop on Computational Intelligence (IWCI-2016, IEEE)*, 2016
- S.M.A. Sharif, Nabeel Mohammed, Nafees Mansoor, Sifat Momen, **"A hybrid deep model with HOG features for Bangla handwritten numeral classification,"** *9th International Conference on Electrical and Computer Engineering (ICECE-2016, IEEE)*, 2016
- Iftekharul Mobin, Sifat Momen, Nabeel Mohammed, **"A packet level simulation study of adhoc network with Network Simulator-2 (NS-2),"** *3rd International Conference on Electrical Engineering and Information & Communication Technology (ICEEiCT-2016, IEEE)*, 2016
- Rabiul Islam Jony, Nabeel Mohammed, Ahsan Habib, Sifat Momen, Rakibul Islam Rony, **"An Evaluation of Data Processing Solutions Considering Preprocessing and "Special" Features,,"** *11th International Conference on Signal Image Technology & Internet Based Systems (SITIS-2015, IEEE)*, 2015

- Farhan Quadir, Mahmudul Faisal Al Ameen, Sifat Momen, **"Visualization and Queuing Analysis of Spatio-Temporal Traffic Data,"** *I7th International Conference on Computer and Information Technology – 2014 (ICCIT-2014, IEEE)*, 2014
- Sifat Momen, Amanda J.C. Sharkey, **"From Ants to Robots: A Decentralised Task Allocation Model for A Swarm of Robots,"** *In the proceedings of the Swarm Intelligence Algorithms and Applications Symposium, Cyrille Bertelle, Gerard H.E. Duchamp and Rawan Ghnemat (Eds) at the AISB 2010 convention*, 2010
- Sifat Momen, Amanda J.C. Sharkey, **"Strategies of Division of Labour for Improving Task Efficiency in Multi-Robot Systems,"** *IEEE World Congress on Nature and Biologically Inspired Computing (NABIC-09)*, 2009
- Sifat Momen, Amanda J.C. Sharkey, **"An Ant-like Task Allocation Model For A Swarm of Heterogeneous Robots,"** *The 2nd Swarm Intelligence Algorithms and Applications Symposium (SIAAS 2009), AISB 2009 convention*, 2009
- Sifat Momen, Bala P. Amavasai, M.N.H. Siddique, **"Mixed Species Flocking for Heterogeneous Robotic Swarms,"** *IEEE Eurocon 2007: The International Conference on Computer as a Tool*, 2007

Book Chapters

- Fahim Ahmed Shakil, Sayed Muddashir Hossain, Rifat Hossain, Sifat Momen, **"Prediction of Road Accidents Using Data Mining Techniques,"** *In Proceedings of International Conference on Computational Intelligence and Emerging Power System*, 2022
- Pias Paul, Moh Anwar-Ul-Azim Bhuiya, Md Ayat Ullah, Molla Nazmus Saqib, Nabeel Mohammed, Sifat Momen, **"A Modern Approach for Sign Language Interpretation Using Convolutional Neural Network,"** *Pacific Rim International Conference on Artificial Intelligence*, 2019
- S.M.A. Sharif, Nabeel Mohammed, Sifat Momen and Nafees Mansoor, **"Classification of Bangla compound characters using a HOG-CNN hybrid model,"** *Second International Conference on Computing and Communication Systems (I3CS – 2016, Springer)*, 2016

Others

- Sifat Momen and Amanda J.C. Sharkey, **"Design and Analysis of a Decentralised Task Allocation Model for a Swarm of Simulated Mobile Robots,"** *Amorphous Computing and Complex Biological Networks*, 2010
- Sifat Momen, Amanda J.C. Sharkey, **"An Ant-like Task Allocation Model For Heterogeneous Groups of Robots,"** *4th European Meeting of the International Union for the study of Social Insects*, 2008

Research Projects & Grants

- "Advancing depression diagnoses and personalized feedback for youths using machine learning and eXplainable AI", Funded by CTRG (2023 – 2024)
- "An inclusive investigation of the cognitive purchase behavior of the consumers on social media using machine learning tools", Funded by CTRG (2023 – 2024)

- "Understanding indigenous and exogenous knowledge interactions within the agricultural communities in rural Bangladesh", Funded by X/161099 GCRF QR Project (University of Sheffield, UK) (2019 – 2021)
- "A teaching aid for Bangla handwriting", Funded by ICT Division, Ministry of ICT, Bangladesh (2016 – 2017)
- "Poor utilization of road networks & variable vehicular speed: An empirical and modelling study of the factors to traffic congestion", Funded by the ULAB Research Grant Committee (2013 – 2014)

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Biography

Dr. Nabeel Mohammed completed his Bachelors in Computer Science from Monash University Australia. Following that he worked as a Software Developer for Editure Ltd, a Melbourne based Software Firm specializing in providing software solutions for K-12 schools. After three and half years in that role he moved back into academia to complete his PhD at Monash University, Australia, where he worked in the area of unsupervised image feature extraction and its application to content-based image retrieval. His current research interests lie in the area of computer vision and natural language processing. He is very enthusiastic about collaborating with industry partners and has had successful collaborations with Apurba Technologies, HeadBlocks, Giga Tech Ltd., AlterSense, Gaze Technologies and others. He also leads the Apurba-NSU R&D Lab that has contributed to multiple AI related projects of Apurba Technologies.

Research Areas

- Artificial Intelligence & Robotics
- Signals and Image Processing

Research Interests

Computer Vision, Natural Language Processing, Generative AI

Teaching

- CSE 327 Software Engineering
- CSE 325/CSE 425 Concepts of Programming Language
- CSE 465 Pattern Recognition and Neural Network

Selected Publications

Journals

- Koushik Roy, Md Sazzad Hossain, Pritom Kumar Saha, Shadman Rohan, Imranul Ashrafi, Ifty Mohammad Rezwan, Fuad Rahman, BM Mainul Hossain, Ahmedul Kabir, Nabeel Mohammed, **"A multifaceted evaluation of representation of graphemes for practically effective Bangla OCR,"** *International Journal on Document Analysis and Recognition (IJDAR)*, 2023
- Kazi Rafat, Sadia Islam, Abdullah Al Mahfug, Md. Ismail Hossain, Fuad Rahman, Sifat Momen, Shafin Rahman, Nabeel Mohammed, **"Mitigating carbon footprint for knowledge distillation based deep learning model compression,"** *PLOS ONE*, 2023
- Md Sahadul Hasan Arian, Md Tahmid Ahmed Rakib, Samira Ali, Saif Ahmed, Taseef Hasan Farook, Nabeel Mohammed, James Dudley, **"Pseudo labelling workflow, margin losses, hard triplet mining, and PENViT backbone for explainable age and biological gender estimation using dental panoramic radiographs,"** *SN Applied Sciences*, 2023
- Md. Saiful Islam, Shuvo Jyoti Das, Md. Riajul Alam Khan, Sifat Momen, Nabeel Mohammed, **"Detection of COVID-19 and Pneumonia Using Deep Convolutional Neural Network,"** *Computer Systems Science and Engineering*, 2023
- Md Shakib Khan, Kazi Nabiul Alam, Abdur Rab Dhrubaa, Hasib Zunair, Nabeel Mohammed, **"Knowledge distillation approach towards melanoma detection,"** *Computers in Biology and Medicine*, 2022
- Samiya Kabir Youme, Towsif Alam Chowdhury, Hossain Ahamed, Md. Sayeed Abid, Labib Chowdhury, Nabeel Mohammed, **"Generalization of Bangla Sign Language Recognition Using Angular Loss Functions,"** *IEEE Access*, 2021
- Koushik Roy, Md. Hasan, Labiba Rupty, Md. Sourave Hossain, Shirshajit Sengupta, Shehzad Noor Taus, Nabeel Mohammed, **"Bi-FPNFAS: Bi-Directional Feature Pyramid Network for Pixel-Wise Face Anti-Spoofing by Leveraging Fourier Spectra,"** *Sensors*, 2021
- Labib Chowdhury, Hasib Zunair, Nabeel Mohammed, **"Robust Deep Speaker Recognition: Learning Latent Representation with Joint Angular Margin Loss,"** *Applied Sciences*, 2020
- K.M. Faizullah Fuhad, Jannat Ferdousey Tuba, Md. Rabiul Ali Sarker, Sifat Momen, Nabeel Mohammed, Tanzilur Rahman, **"Deep Learning Based Automatic Malaria Parasite Detection from Blood Smear and its Smartphone Based Application,"** *Diagnostics*, 2020

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Conference Papers

- Amrijit Biswas, Md. Ismail Hossain, M M Lutfe Elahi, Ali Cheraghian, Fuad Rahman, Nabeel Mohammed, Shafin Rahman, **"3D Point Cloud Network Pruning: When Some Weights Do not Matter,"** *British Machine Vision Conference (BMVC)*, 2024
- Muhammad Rafsan Kabir, Rafeed Mohammad Sultan, Ihsanul Haque Asif, Jawad Ibn Ahad, Fuad Rahman, Mohammad Ruhul Amin, Nabeel Mohammed, Shafin Rahman, **"Beyond Labels: Aligning Large Language Models with Human-like Reasoning,"** *International Conference on Pattern Recognition (ICPR)*, 2024
- Sadia Afrin, Md. Shahad Mahmud Chowdhury, Md. Ekramul Islam, Faisal Ahamed Khan, Labib Imam Chowdhury, Md. Motahar Mahtab, Nazifa Nuha Chowdhury, Massud Forkan, Neelima Kundu, Hakim Arif, Mohammad Mamun Or Rashid, Mohammad Ruhul Amin, Nabeel Mohammed, **"BanLemma: A Word Formation Dependent Rule and Dictionary Based Bangla Lemmatizer,"** *Findings of EMNLP*, 2023
- Md Ekramul Islam, Labib Chowdhury, Faisal Ahamed Khan, Shazzad Hossain, Md Sourave Hossain, Mohammad Mamun Or Rashid, Nabeel Mohammed, Mohammad Ruhul Amin, **"SentiGOLD: A large bangla gold standard multi-domain sentiment analysis dataset and its evaluation,"** *Proceedings of the 29th ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD)*, 2023
- Md. Tahrim Tushar, Yan Yang, Md Zakir Hossain, Sheikh Motahar Naim, Nabeel Mohammed, Shafin Rahman, **"Less is More: Facial Landmarks can Recognize a Spontaneous Smile,"** *British Machine Vision Conference (BMVC)*, 2022
- Md Shihab, Istiak Hossain, Nazia Tasnim, Hasib Zunair, Labiba Kanij Rupty, Nabeel Mohammed, **"VISTA: Vision transformer enhanced by U-Net and image colorfulness frame filtration for automatic retail checkout,"** *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (Workshop)*, 2022
- Md Hasan, Koushik Roy, Labiba Kanij Rupty Rupty, Md. Sourave Hossain, Shirshajit Sen Gupta, Tous Noor, Nabeel Mohammed, **"MHASAN: Multi-Head Angular Self Attention Network for Spoof Detection,"** *International Conference on Pattern Recognition (ICPR)*, 2022
- Md Hossain, Mohammed Rakib, Sabbir Mollah, Fuad Rahman, Nabeel Mohammed, **"LILA-BOTI: Leveraging Isolated Letter Accumulations By Ordering Teacher Insights for**

Bangla Handwriting Recognition," *International Conference on Pattern Recognition (ICPR)*, 2022

- Md Sazzad Hossain, Pritom Saha, Townim Faisal Chowdhury, Shafin Rahman, Fuad Rahman, Nabeel Mohammed, **"Rethinking Task-Incremental Learning Baselines,"** *International Conference on Pattern Recognition (ICPR)* , 2022
- Md. Sourave Hossain, Labiba Rupty, Koushik Roy, Md Hasan, Shirshajit Sen Gupta, Nabeel Mohammed, **"A-DeepPixBis: Attentional Angular Margin for Face Anti-Spoofing,"** *Digital Image Computing: Techniques and Applications (DICTA)*, 2020
- Ifty Mohammad Rezwan, Mirza Belal Ahmed, Shazzad Sakim Sourav, Ezab Quader, Arafat Hossain, Nabeel Mohammed, **"MixCaps: Capsules With Iteration Free Routing,"** *Digital Image Computing: Techniques and Applications (DICTA)*, 2020
- Koushik Roy, Md Hasan, K M Faizullah Fuhad, Nabeel Mohammed, A K M Shahariar Azad Rabby, Nazmul Hasan, Jebun Nahar, Fuad Rahman, **"Bangla Part of Speech Tagging Using Contextual Embeddings and Oversampling Techniques,"** *Future Technologies Conference (FTC)*, 2020
- Hasib Zunair, Aimon Rahman, Nabeel Mohammed, Joseph Paul Cohen, **"Uniformizing Techniques to Process CT Scans with 3D CNNs for Tuberculosis Prediction,"** *International Workshop on PRedictive Intelligence In MEdicine*, 2020
- Pias Paul, Moh. Anwar-Ul-Azim Bhuiya, Md. Ayat Ullah, Molla Nazmus Saqib, Nabeel Mohammed, Sifat Momen, **"A Modern Approach for Sign Language Interpretation Using Convolutional Neural Network,"** *Pacific Rim International Conference on Artificial Intelligence* , 2019
- Md Shopon, Nabeel Mohammed, Md Anowarul Abedin, **"Bangla handwritten digit recognition using autoencoder and deep convolutional neural network,"** *International Workshop on Computational Intelligence* , 2016
- S.M.A. Sharif, Nabeel Mohammed, Nafees Mansoor, Sifat Momen, **"A hybrid deep model with HOG features for Bangla handwritten numeral classification,"** *9th International Conference on Electrical and Computer Engineering (ICECE-2016, IEEE)*, 2016
- Asif Hassan, Mohammad Rashedul Amin, Abul Kalam Al Azad, Nabeel Mohammed, **"Sentiment analysis on Bangla and Romanized Bangla text using deep recurrent models,"** *International Workshop on Computational Intelligence*, 2016
- Mithun Biswas, Rafiqul Islam, Gautam Kumar Shom, Nabeel Mohammed, Sifat Momen, Nafees Mansoor, Anowarul Abedin, **"Application of image retrieval for aesthetic evaluation and improvement suggestion of isolated Bangla handwritten characters,"** *IEEE International Conference on Signal and Image Processing Applications (ICSIPA), 2017* , 2017
- Shimul Hassan, Nabeel Mohammed, Sifat Momen, **"Learning from Tagore,"** *International Workshop on Computational Intelligence (IWCI-2016, IEEE)*, 2016

Book Chapters

- S.M.A. Sharif, Nabeel Mohammed, Sifat Momen and Nafees Mansoor, **"Classification of Bangla compound characters using a HOG-CNN hybrid model,"** *Second International Conference on Computing and Communication Systems (I3CS – 2016, Springer)*, 2016

Research Projects & Grants

1. “A teaching aid for Bangla Handwriting”, Funded by ICT Division, Ministry of ICT, Bangladesh (2016 – 2017)
2. “MasterMoshai: An Artificially Intelligent Educational Tool to Automate the Evaluation of a Student’s Understanding on a Bangla Passage”, Funded by ICT Division, Ministry of ICT, Bangladesh (2019 – 2020)
3. Apurba-NSU R&D Lab – A R&D Lab at NSU funded by Apurba Technologies.

Professional Activity

- Member of AI Connect (A program of the Atlantic Council GeoTech Center and U.S. Department of State)
- Juror of Bangladesh Block Chain Olympiad
- Judge of “AI For Bangla”

DR. AHSANUR RAHMAN [ARA2]

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Biography

I am an associate professor of the Electrical & Computer Engineering Department (ECE) department of North South University (NSU), Dhaka, Bangladesh. I joined NSU in Dec 2015. I completed my PhD from Virginia Tech in Fall 2015. During my PhD, I worked as a Graduate Research Assistant (GRA) with

my adviser, Dr. T. M. Murali, from the Summer of 2011 to the Fall of 2015. I worked as a Graduate Teaching Assistant (GTA) at Virginia Tech from Fall 2010 to Spring 2011. Before that, I worked as a lecturer at American International University Bangladesh (AIUB), Dhaka, Bangladesh. I received a B.Sc. in Computer Science & Engineering (CSE) from Bangladesh University of Engineering & Technology (BUET) in 2008.

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Research Areas

- Artificial Intelligence & Robotics

Research Interests

Computational Systems Biology, Graph Mining, Machine Learning

Teaching

- CSE 225 Data Structures and Algorithms
- CSE 225L Data Structures and Algorithms Lab
- CSE 373 Design and Analysis of Algorithms
- CSE 115 Programming Language I
- CSE 115L Programming Language I Lab
- CSE 173 Discrete Mathematics
- CSE 299 Junior Design Course
- CSE 498/EEE 498/ETE 498 Internship/Co-op/Directed Research
- CSE 511 Advanced Algorithms
- CSE 325/CSE 425 Concepts of Programming Language
- CSE 491 Special Topics
- CSE 551 Graph Theory

Selected Publications

Journals

- C. L. Poirel, A. Rahman, R. Rodrigues, A. Krishnan, J. R. Addesa, T. M. Murali, **"Reconciling Gene Expression Data with Molecular Interaction Networks,"** *Bioinformatics*, 2013
- A. Rahman, C. L. Poirel, D. J. Badger, C. Estep, T. M. Murali, **"Reverse Engineering Molecular Hypergraphs,"** *IEEE/ACM Transactions on Computational Biology and Bioinformatics (TCBB)*, 2013
- Badiuzzaman Pranto, Sk. Maliha Mehnaz, Esha Bintee Mahid, Imran Mahmud Sadman, Ahsanur Rahman, Sifat Momen, **"Evaluating Machine Learning Methods for Predicting Diabetes among Female Patients in Bangladesh,"** *Information*, 2020

Conference Papers

- A. Rahman, S. Jan, H. Kim, B. A. Prakash, and T. M. Murali, **"Unstable Communities in Network Ensembles,"** *16th SIAM conference on Data Mining (SDM)*, 2016
- A. Rahman, S. Jan, H. Kim, B. A. Prakash, and T. M. Murali, **"Mining Unstable Communities from Network Ensembles,"** *5th IEEE Workshop on Data Mining in Networks*, 2015
- A. Rahman, C. L. Poirel, D. J. Badger, and T. M. Murali, **"Reverse Engineering Molecular Hypergraphs,"** *ACM Conference on Bioinformatics, Computational Biology and Biomedicine (ACM BCB), Orlando, FL, 2012.*, 2012
- A. Rahman and M. R. Islam, **"An approximation algorithm for bounded degree closest phylogenetic 2nd root problem,"** *International Conference on Computer and Information Technology (ICCIT)*, 2010
- A. Rahman, **"Load Balancing in DHT based P2P Networks,"** *International Conference on Electrical and Computer Engineering (ICECE)*, 2008
- M. A. Rahman and M. A. Sattar, **"A New Approach to Sort Unicode Bengali Text,"** *International Conference on Electrical and Computer Engineering (ICECE)*, 2008
- M. S. Islam, M.R.J. Mahin, and A. Rahman, **"A Data Analysis Pipeline for Identifying Periodic Processes during Drosophila Development,"** *Proceedings of the 2nd International Conference on Advanced Computer Science and Information Systems (ICACSIS)*, 2020
- M. Chowdhury and A. Rahman, **"Predicting Places of Revelation of Quran's Verses,"** *International Conference on Computing & Information Technology (ICCIT 1441)*, 2020
- F.I. Tahmid, F. Akbar, A. Rahman, **"A Smart Cyberbullying Detection and Reporting System,"** *Proceedings of the Seventh International Women in Data Science Conference at Prince Sultan University (WiDS PSU)*, 2024
- A. Rahman, K. Roy, R. Maliha, T.F. Chowdhury, **"A Fast Exact Algorithm to Enumerate Maximal Pseudo-cliques in Large Sparse Graphs,"** *Proceedings of the 30th ACM SIGKDD Conference on Knowledge Discovery and Data Mining*, 2024

Book Chapters

- A. Rahman and T. Motahar, **"Big Graph Analytics,"** *Invited Chapter in "Data Analytics: Concepts, Techniques and Applications", CRC Press, USA*, 2018

DR. SHAHNEWAZ SIDDIQUE [SNS1]

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Phd, Aerospace Engineering, Georgia Institute of Technology, Atlanta, Georgia, USA.
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Research Areas

- Artificial Intelligence & Robotics
- Modeling and Simulation

Research Interests

Controls, robotics and intelligent systems

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Research Areas

- Cloud Computing and Distributed Systems
- Artificial Intelligence & Robotics
- Software Engineering
- Mobile, Wireless and Web Applications Development

- Modeling and Simulation

Research Interests

My primary research interest is to solve problems of the modern societies and improve lifestyles of the people. Usually, it requires a concerted effort from the government organizations to pinpoint the real causes of the problems and

finding timely solutions. I am working to find novel usages of internet edge devices (mobile devices, IoT sensors etc.) to identify societal problems, then find novel ways to interpret the problems and find solutions using statistics, machine learning, and big data algorithms.

Teaching

- CSE 338 Data Communication & network
- CSE 327 Software Engineering
- CSE 465 Pattern Recognition and Neural Network
- CSE 482 Internet and Web Technology
- CSE499A/EEE499A/ETE499A – Senior Design I
- CSE499B/EEE499B/ETE499B – Senior Design II

DR. MD SHAHRIAR KARIM [MSK1]

Associate Professor

Ph.D, Biological Engineering, Computational Life Science (CLS), Purdue University, West Lafayette, IN, USA.

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Biography

Md. Shahriar Karim completed his doctoral degree in biological engineering (and computational life science) from Purdue University, West Lafayette, USA, in December 2016. He has also completed a Master's in biological engineering and a Master's degree in Electrical Engineering from Purdue University, USA. Prior to the graduate studies, Md. Shahriar Karim earned his Bachelor in Electronics Engineering from National Institute of Technology, Allahabad, India.

Research Interests

- Quantitative Systems Biology
- Modeling of Dynamical Systems
- Estimation and Detection Theory
- Computational Biology

Teaching

- CSE 173 Discrete Mathematics
- CSE 417 Numerical Methods
- CSE 325/CSE 425 Concepts of Programming Language
- CSE499A/EEE499A/ETE499A – Senior Design I
- CSE499B/EEE499B/ETE499B – Senior Design II

Selected Publications

Journals

- Md. Shahriar Karim, Gregery T. Buzzard, David M. Umulis, **"Efficient calculation of steady state probability distribution for stochastic biochemical reaction network,"** *BMC Genomics Supplement*, 2012
- Md. Shahriar Karim, Gregery T. Buzzard, David M. Umulis, **"Secreted, receptor-associated BMP regulators reduce stochastic noise intrinsic to many extracellular morphogen distributions.,"** *Journal of the Royal Soc. Interface*, 2012

Conference Papers

- Md. Shahriar Karim, Hans G. Othmer, David M. Umulis, **"Leveraging compute clusters for large-scale parametric screens of reaction-diffusion systems,"** *The 26th conference on Parallel, Distributed, and Network-Based Processing (PDP 2018), March 21-23, Cambridge, UK*, 2018
- Md. Shahriar Karim, Gregery T. Buzzard, David M. Umulis, **"Steady state probability approximation applied to stochastic model of biological network,"** *IEEE International Workshop on Genomic Signal Processing and Statistic, December 4-6, 2011, San Antonio, Texas, USA*, 2011

- Md. Shahriar Karim, Gregery T. Buzzard, David M. Umulis, **"Modulation of Morphogen Dynamics Can Lead to Robustness and Scaling of Patterns in Development,"** *The 36th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC'14), August 26-30, 2014 Chicago, Illinois, USA*, 2014

DR. RIASAT KHAN [RTK]

Associate Professor & Undergraduate Coordinator(EEE/ETE)

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Biography

Riasat Khan is an Associate Professor in the Department of Electrical and Computer Engineering at North South University, Dhaka, Bangladesh. He earned his B.Sc. in Electrical and Electronic Engineering from the Islamic University of Technology (IUT), Bangladesh. He was appointed as a Lecturer at Green University of Bangladesh after graduation. He later pursued and completed his MSc and Ph.D. in Electrical and Computer Engineering at New Mexico State University, USA. During his doctoral studies, Khan worked as a Graduate Teaching Assistant and received the Outstanding Teaching Assistant Award. His research interests include Data Science, Artificial Intelligence, Power Electronics, and Electrical Engineering.

Research Areas

- Artificial Intelligence & Robotics
- Modeling and Simulation

Research Interests

Data Science, Artificial Intelligence, Power Electronics, and Electrical Engineering

Teaching

- CSE 445 Machine Learning
- EEE 111/ ETE 111 Analog Electronics-I
- EEE241/ETE241 Electrical Circuits II
- EEE 141 Electrical Circuits I
- CSE 542 Advanced VLSI Design
- CSE499A/EEE499A/ETE499A – Senior Design I
- CSE499B/EEE499B/ETE499B – Senior Design II
- EEE 312 Power Electronics
- EEE311/ ETE311 Analog Electronics II

Selected Publications

Journals

- Riasat Khan and Kwong T Ng, **"DMD-Galerkin Model Order Reduction for Cardiac Propagation Modeling,"** *Applied Computational Electromagnetics Society Journal*, 2018
- N. A. Mimma, T. Rahman, S. Ahmed and R. Khan, **"Fruits Classification and Detection Application Using Deep Learning,"** *Scientific Reports*, 2022
- M. N. I. Suvon, S. C. Siam, M. Ferdous, M. Alam and R. Khan, **"MS and PhD Admission Prediction of Bangladeshi Students into Different Classes of Universities,"** *IAES International Journal of Artificial Intelligence*, 2022
- M. T. Islam, S. T. Mashfu, A. Faisal, S. C. Siam, I. T. Naheen and R. Khan, **"Deep Learning Based Glaucoma Detection with Cropped Optic Cup and Disc and Blood Vessel Segmentation,"** *IEEE Access*, 2022
- N. H. Tasnim, S. Afrin, B. Biswas, A. A. Anye and R. Khan, **"Automatic Classification of Textile Visual Pollutants using Deep Learning Networks,"** *Alexandria Engineering Journal*, 2022
- A. Hossain, M. J. Anee, R. Faruqui, S. Bushra, P. Rahman and R. Khan, **"A GPS Based Unmanned Drone Technology for Detecting and Analyzing Air Pollutants,"** *IEEE Instrumentation & Measurement Magazine*, 2022
- I. Tasin, T. U. Nabil, S. Islam and Riasat Khan, **"Diabetes prediction using machine learning and explainable AI techniques,"** *Healthcare Technology Letters*, 2022
- M. M. Ratul, K. A. Rahman, J. Fazal, N. R. Abanto and R. Khan, **"Face Mask and Social Distance Monitoring via Computer Vision and Deployable System Architecture,"** *Intelligent Automation & Soft Computing*, 2023

- A. Rahman, M. B. H. Hriday and R. Khan, **"Computer vision-based approach to detect fatigue driving and face mask for edge computing device,"** *Heliyon*, 2022
- R. B. Islam, S. Akhter, F. Iqbal, M. S. U. Rahman and R. Khan, **"Deep Learning Based Object Detection and Surrounding Environment Description for Visually Impaired People,"** *Heliyon*, 2023
- S. Siddique, S. Islam, E. E. Neon, T. Sabbir, I. T. Naheen, and R. Khan, **"Deep Learning-based Bangla Sign Language Detection with an Edge Device,"** *Intelligent Systems with Applications*, 2023
- S. Solayman, S. A. Aumi, C. S. Mery, M. Mubassir and R. Khan, **"Automatic COVID-19 Prediction Using Explainable Machine Learning Techniques,"** *International Journal of Cognitive Computing in Engineering*, 2023

Conference Papers

- Riasat Khan and Kwong T Ng, **"Model Order Reduction for Finite Difference Modeling of Cardiac Propagation using DMD Modes,"** *IEEE International Applied Computational Electromagnetics Society Symposium, Denver, CO*, 2018
- Riasat Khan and Kwong T Ng, **"Model Order Reduction of Finite Difference Bidomain Modeling of Cardiac Propagation,"** *Biomedical Engineering Society Annual Meeting, Phoenix, AZ*, 2018
- Riasat Khan and Kwong T Ng, **"Higher Order Finite Difference Modeling of Cardiac Propagation,"** *IEEE International Conference on Bioinformatics and Biomedicine (BIBM), Kansas City, MO*, 2017

Research Projects & Grants

1. "Automatic Smartphone-based Glaucoma and Diabetic Retinopathy Detection System Using Deep Learning Approaches," North South University Research Grant, 2021.
2. "Investigation of Antenna Design Parameters with Machine Learning Techniques," North South University Research Grant, 2022.

DR. NAFISA NOOR [NANR]

Assistant Professor & Graduate Coordinator

PhD – Electrical Engineering, University of Connecticut, Storrs, CT, USA

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Research Areas

- Semiconductor Device and Technology
- Modeling and Simulation

Research Interests

Modeling of phase change memory (PCM) & memristive nanodevices

Compact circuit modeling of emerging memory nanodevices

Modeling of interconnect network circuitry

Stochastic circuits, systems, devices, and materials for hardware security applications

Automatized instrumentation & measurements

Teaching

- EEE 141 Electrical Circuits I
- EEE 141L Electrical Circuits I Lab
- EEE 211 Digital Logic Design
- EEE 211L Digital Logic Design Lab
- EEE 299 Junior Design Project I
- EEE311/ ETE311 Analog Electronics II
- EEE 311L/ETE 311L Analog Electronics II Lab

- EEE 410 Semiconductor Devices and Technology
- EEE 415 CMOS Analog Circuit Design
- EEE 491 Special Topics
- CSE 498/EEE 498/ETE 498 Internship/Co-op/Directed Research
- CSE499A/EEE499A/ETE499A – Senior Design I
- CSE499B/EEE499B/ETE499B – Senior Design II
- EEE 513 Nanotechnology
- ETE 544 Introduction to Nanotechnologies

Selected Publications

Journals

- Sadid Muneer, Muhammad Aminul Haque Chowdhury, Md Kabiruzzaman, Shafat Shahnewaz, Nafisa Noor, Mainul Hossain, **"Thermal Confinement by Monolayer MoS2 for Reduced RESET Current in Phase Change Memory Pillar Cells,"** *ACS Applied Electronic Materials*, 2024
- Nafisa Noor, Sadid Muneer, Raihan Sayeed Khan, Anna Gorbenko, Lhacene Adnane, Md Tashfiq Bin Kashem, Jake Scoggin, Faruk Dirisaglik, Adam Cywar, Ali Gokirmak, Helena Silva, **"Reset Variability in Phase Change Memory for Hardware Security Applications,"** *IEEE Transactions on Nanotechnology*, 2020
- Nafisa Noor, Sadid Muneer, Raihan Sayeed Khan, Anna Gorbenko, Helena Silva, **"Enhancing Programming Variability in Multi-Bit Phase Change Memory Cells for Security,"** *IEEE Transactions on Nanotechnology*, 2020
- Nafisa Noor, Sadid Muneer, Raihan Sayeed Khan, Anna Gorbenko, and Helena Silva, **"Amorphized length and variability in phase-change memory line cells,"** *Beilstein Journal of Nanotechnology*, 2020
- Nafisa Noor, Venkata Manthina, Kadir Cil, Lhacene Adnane, Alexander G. Agrios, Ali Gokirmak, Helena Silva, **"Atmospheric pressure microplasmas in ZnO nanoforests under high voltage stress,"** *AIP Advances*, 2015
- Nafisa Noor, Luca Lucera, Thomas Capuano, Venkata Manthina, Alexander G Agrios, Helena Silva, Ali Gokirmak, **"Blue and white light emission from zinc oxide nanoforests,"** *Beilstein Journal of Nanotechnology*, 2015

Conference Papers

- Nafisa Noor, Helena Silva, **"Optical Characterization of ZnO Nanoforest for Hardware Security Applications,"** *2019 IEEE 19th International Conference on Nanotechnology (IEEE-NANO), Macao, China*, 2019
- Nafisa Noor, Raihan Sayeed Khan, Sadid Muneer, Helena Silva, **"Tamper Evidence of SEM Imaging Attack in Phase Change Memory Nanodevices,"** *2019 IEEE 19th International Conference on Nanotechnology (IEEE-NANO), Macao, China*, 2019
- Anna Gorbenko, Nafisa Noor, Sadid Muneer, Raihan Sayeed Khan, Faruk Dirisaglik, Adam Cywar, Bicky Shakya, Domenic Forte, Marten van Dijk, Ali Gokirmak, Helena Silva, **"Resistance Drift and Crystallization in Suspended and On-oxide Phase Change**

Memory Line Cells," *2019 IEEE 19th International Conference on Nanotechnology (IEEE-NANO), Macao, China*, 2019

- Raihan Sayeed Khan, Nafisa Noor, Chenglu Jin, Sadid Muneer, Faruk Dirisaglik, Adam Cywar, Phuong Ha Nguyen, Marten van Dijk, Ali Gokirmak, Helena Silva, **"Exploiting lithography limits for hardware security applications,"** *2019 IEEE 19th International Conference on Nanotechnology (IEEE-NANO), Macao, China*, 2019
- Nafisa Noor, Sadid Muneer, **"Concentrating solar power (CSP) and its prospect in Bangladesh,"** *2009 IEEE 1st International Conference on the Developements in Renewable Energy Technology (ICDRET)*, 2009
- Nafisa Noor, **"Invited Talk: Phase Change Memory Nanodevices for Secure Hardwares,"** *2nd International Conference on Robotics, Electrical and Signal Processing Techniques (ICREST'21), 5-7 January 2021, Dhaka, Bangladesh*, 2021
- Md Tashfiq Bin Kashem, Sadid Muneer, Nafisa Noor, Jake Scoggin, Helena Silva, and Ali Gokirmak, **"Computational Analysis of Complex Amorphization/Crystallization Dynamics in Large Phase Change Memory Devices,"** *2019 Materials Research Society (MRS) Spring Meeting & Exhibit, Phoenix, AZ, USA*, 2019
- ABM Hasan Talukder, Raihan Sayeed Khan, Kimberly Nguyen, Madison Nadolny, Nafisa Noor, Faruk Dirisaglik, Adam Cywar, Sadid Muneer, Helena Silva, and Ali Gokirmak, **"Investigation of Resistance Drift in Ge2Sb2Te5 Phase Change Memory Line Cells at Low Temperatures—Contributions of Charge Trapping,"** *2019 Materials Research Society (MRS) Spring Meeting & Exhibit, Phoenix, AZ, USA*, 2019
- Nafisa Noor, Sadid Muneer, Raihan Sayeed Khan, Ali Gokirmak, and Helena Silva, **"Enhanced Reset Variability in Phase Change Memory for Hardware Security Applications,"** *2019 American Physical Society (APS) March Meeting, Boston, MA, USA*, 2019
- Helena Silva, Nafisa Noor, Shalini Tripathi, and C. Barry Carter, **"Resistance drift of metastable amorphous and crystalline fcc GeSbTe memory devices,"** *2019 American Physical Society (APS) March Meeting, Boston, MA, USA*, 2019
- Raihan Sayeed Khan, Sadid Muneer, Nafisa Noor, Helena Silva, and Ali Gokirmak, **"Evidence of Charge Trapping Giving Rise to Resistance Drift of Metastable Amorphous Ge2Sb2Te5,"** *2019 American Physical Society (APS) March Meeting, Boston, MA, USA*, 2019
- Shalini Tripathi, Matthew Janish, Nafisa Noor, Katherine Jungjohann, Doug Pete, Paul Kotula, Helena Silva, C. Barry Carter, **"In Situ Characterization of Phase-Change Materials (PCMs),"** *2018 Materials Research Society (MRS) Fall Meeting & Exhibit, Boston, MA, USA*, 2018
- Nafisa Noor, Venkata Manthina, Sadid Muneer, Alexander Agrios, Ali Gokirmak, and Helena Silva, **"ZnO Nanoforest Optical PUFs,"** *2018 Materials Research Society (MRS) Fall Meeting & Exhibit, Boston, MA, USA*, 2018
- Anna Gorbenko, Nafisa Noor, Sadid Muneer, Raihan Sayeed Khan, Faruk Dirisaglik, Adam Cywar, Yu Zhu, Ali Gokirmak, Helena Silva, **"Resistance Drift in Suspended and On-Oxide Gb2Se2Te5 Phase Change Memory Line Cells,"** *2018 Materials Research Society (MRS) Spring Meeting & Exhibit, Phoenix, AZ, USA*, 2018
- Nafisa Noor, Lindsay Sullivan, Raihan Sayeed Khan, Sadid Muneer, Faruk Dirisaglik, Adam Cywar, Yu Zhu, Chung Lam, Ali Gokirmak, and Helena Silva, **"Variability of Amorphized Length in Phase Change Memory (PCM) Line Cells,"** *2018 Materials Research Society (MRS) Spring Meeting & Exhibit, Phoenix, AZ, USA*, 2018

- Nafisa Noor, Sadid Muneer, Lhacene Adnane, Raihan Sayeed Khan, Anna Gorbenko, Faruk Dirisaglik, Adam Cywar, Chung Lam, Yu Zhu, Ali Gokirmak, Helena Silva, **"Utilizing Programming Variability in Phase Change Memory Cells for Security,"** *2017 Materials Research Society (MRS) Fall Meeting & Exhibit, Boston, MA, USA*, 2017
- Raihan Sayeed Khan, Nafisa Noor, Aaron Ciardullo, Sadid Muneer, Lhacene Adnane, Faruk Dirisaglik, Adam Cywar, Chung Lam, Yu Zhu, Helena Silva, Ali Gokirmak, **"A Study on Stochasticity in Hexagonal Close Packed Ge2Sb2Te5 Nanowires for Possible Physical Unclonable Function (PUF) Implementation,"** *2017 Materials Research Society (MRS) Spring Meeting & Exhibit, Phoenix, AZ, USA*, 2017
- Nafisa Noor, Raihan Sayeed Khan, Sadid Muneer, Lhacene Adnane, Ryanne Ramadan, Faruk Dirisaglik, Adam Cywar, Chung Lam, Yu Zhu, Ali Gokirmak, Helena Silva, **"Short and Long Time Resistance Drift Measurement in Intermediate States of Ge2Sb2Te5 Phase Change Memory Line Cells,"** *2017 Materials Research Society (MRS) Spring Meeting & Exhibit, Phoenix, AZ, USA*, 2017
- Raihan Sayeed Khan, Nafisa Noor, Aaron Ciardullo, Sadid Muneer, Lhacene Adnane, Faruk Dirisaglik, Adam Cywar, Chung Lam, Yu Zhu, Helena Silva, Ali Gokirmak, **"A Study on Stochasticity in Hexagonal Close Packed Ge2Sb2Te5 Nanowires,"** *2016 International Semiconductor Device Research Symposium (ISDRS), Bethesda, MD, USA*, 2016
- Nafisa Noor, Sadid Muneer, Lhacene Adnane, Raihan Sayeed Khan, Ryanne Ramadan, Faruk Dirisaglik, Adam Cywar, Chung Lam, Yu Zhu, Helena Silva, Ali Gokirmak, **"Pulse-mode Electrical Resistance Trimming of Ge2Sb2Te5 Phase Change Memory (PCM) Line Cells,"** *2016 International Semiconductor Device Research Symposium (ISDRS), Bethesda, MD, USA*, 2016
- Nafisa Noor, Sadid Muneer, Lindsay Sullivan, Kadir Cil, Faruk Dirisaglik, Adam Cywar, Chung Lam, Yu Zhu, Ali Gokirmak, Helena Silva, **"Retention Time of Partially Amorphized Ge2Sb2Te5 Phase Change Memory Cell,"** *2016 Connecticut Symposium on Microelectronics & Optoelectronics (CMOC), Storrs, CT, USA*, 2016
- Nafisa Noor, Kadir Cil, Lindsay Sullivan, Sadid Muneer, Faruk Dirisaglik, Adam Cywar, Chung Lam, Yu Zhu, Ali Gokirmak, Helena Silva, **"An experimental study on waveform engineering for Ge2Sb2Te5 phase change memory cells,"** *2015 MRS Fall Meeting & Exhibit, At Boston, Massachusetts, USA*, 2015
- Nafisa Noor, Venkata Manthina, Kadir Cil, Alexander G. Agrios, Helena Silva, Ali Gokirmak, **"Blue and White Light Emission from ZnO Nanoforest Microplasmas,"** *24th Annual CMOC Symposium, Bridgeport, CT, USA*, 2015
- Nafisa Noor, Venkata Manthina, Helena Silva, Alexander G. Agrios, Ali Gokirmak, **"Blue and White Light Emission from ZnO Nanoforests,"** *2014 Materials Research Society Fall Meeting and Exhibit, Boston, MA, USA*, 2014
- Nafisa Noor, Thomas Capuano, Venkata Manthina, Helena Silva, Alexander G. Agrios, Ali Gokirmak, **"Plasma in a ZnO Nano-Forest: Electrical Discharge, and Blue and White Light Emission,"** *8th International Workshop on Zinc Oxide and Related Materials (IWZnO 2014), Niagara Fall, ON, Canada*, 2014
- Sadid Muneer, Nafisa Noor, Yu Zhu, Chung Lam, Ali Gokirmak, Helena Silva, **"Electrical Resistivity and Thermal Conductivity Extraction for GST Micro-bridges,"** *2013 Materials Research Society (MRS) Spring Meeting & Exhibit, San Francisco, CA, USA*, 2013

Book Chapters

- Nafisa Noor, Helena Silva, **"Phase Change Memory for Physical Unclonable Functions,"** *Springer Nature Singapore*, 2020
- Raihan Sayeed Khan, Nafisa Noor, Chenglu Jin, Jake Scoggin, Zachary Woods, Sadid Muneer, Aaron Ciardullo, PHUONG HA NGUYEN, ALI GOKIRMAK, Marten van Dijk, Helena Silva, **"Phase Change Memory and Its Applications in Hardware Security,"** *CRC Press*, 2017

Others

- Nafisa Noor, **"Webinar: Phase Change Memory Nanodevices,"** *IEEE WIE Affinity Group, University of Dhaka*, 2021
- Shalini Tripathi, Matthew Janish, Nafisa Noor, Paul G Kotula, Douglas V Pete, Katherine Leigh Jungjohann, Helena Silva, Clive Barry Carter, **"PCM Materials & Devices: In-Situ TEM Imaging,"** *CINT User's Meeting, Sandia National Lab.(SNL-NM), Albuquerque, NM, USA*, 2018

Research Projects & Grants

OR-NSU CTRG 2020-2021 (BDT 5,00,000)

OR-NSU CTRG 2021-2022 (BDT 5,00,000)

UIU IAR 2023-2024 & OR-NSU (BDT 4,50,000)

Professional Activity

Current affiliation

Assistant Professor, Department of Electrical & Computer Engineering, North South University, Dhaka, Bangladesh, September 2019 to present

Research Coordinator, School of Engineering & Physical Sciences (SEPS), June 2024 to present

Previous affiliations:

Graduate Research/Teaching Assistant, Department of Electrical & Computer Engineering, University of Connecticut, Storrs, CT, USA, August 2012 to March 2019

Lecturer, Department of Electrical & Electronic Engineering, Ahsanullah University of Science & Technology (AUST), Dhaka, Bangladesh, October 2008 to July 2011

System Engineer, Core Network Planning Department, GrameenPhone Limited, Dhaka, Bangladesh, June 2007 to September 2008

DR. SHAFIN RAHMAN [SFR1]

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Research Areas

- Artificial Intelligence & Robotics

Research Interests

Computer vision and Machine Learning

Teaching

- CSE 583 Digital Image Processing
- CSE 467 Digital Image Processing

- CSE 215 Programming Language II
- CSE 215L Programming Language II Lab
- CSE 299 Junior Design Course
- CSE 173 Discrete Mathematics
- CSE 445 Machine Learning

Selected Publications

Journals

- Shafin Rahman, Salman H. Khan, Fatih Porikli, **"Zero-Shot Object Detection: Joint Recognition and Localization of Novel Concepts,"** *International Journal of Computer Vision (IJCV)*, 2020
- Shafin Rahman, Salman H. Khan, Fatih Porikli, **"A unified approach for conventional zero-shot, generalized zero-shot and few-shot learning,"** *IEEE Transaction on Image Processing (TIP)*, 2018
- Neil D. B. Bruce, Shafin Rahman and Diana Carrier, **"Sparse coding in early visual representation: From specific properties to general principles,"** *Neurocomputing, Vol. 171, pp. 1085–1098, ScienceDirect, Elsevier*, 2016
- Neil Bruce, Calden Wloka, Nick Frosst, Shafin Rahman and John K Tsotsos, **"On Computational Modeling of Visual Saliency: Examining What's Right, and What's Left,"** *Vision Research, Vol. 116, Part B, pp. 95–112, ScienceDirect, Elsevier*, 2015
- Shafin Rahman and Neil Bruce, **"Visual Saliency Prediction and Evaluation Across Different Perceptual a Tasks,"** *PLoS ONE*, 2015

Conference Papers

- Ali Cheraghian, Shafin Rahman, Pengfei Fang, Soumava Kumar Roy, Lars Petersson, and Mehrtash Harandi, **"Semantic-aware Knowledge Distillation for Few-Shot Class-Incremental Learning,"** *IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*, 2021
- Ali Cheraghian, Shafin Rahman, Sameera Ramasinghe, Pengfei Fang, Christian Simon, Lars Petersson, Mehrtash Harandi, **"Synthesized Feature based Few-Shot Class-Incremental Learning on a Mixture of Subspaces,"** *IEEE/CVF International Conference on Computer Vision (ICCV)*, 2021
- Yuhao Zhang, Md Zakir Hossain, Shafin Rahman, **"DeepVANet: A Deep End-to-End Network for Multi-modal Emotion Recognition,"** *NTERACT 2021 -18th IFIP TC. 13 International Conference on Human-Computer Interaction*, 2021
- Shafin Rahman, Salman H. Khan, Nick Barnes, **"Improved Visual-Semantic Alignment for Zero-Shot Object Detection,"** *Proceedings of the AAAI Conference on Artificial Intelligence (AAAI)*, 2020
- Shafin Rahman, Salman H. Khan, Nick Barnes, **"Transductive Learning for Zero-Shot Object Detection,"** *IEEE/CVF International Conference on Computer Vision (ICCV)*, 2019
- Shafin Rahman and Neil Bruce, **"Saliency, Scale and Information: Towards a Unifying Theory,"** *Neural Information Processing Systems (NIPS)*, 2015

DR. ASM JAHID HASAN [AJH]

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Research Areas

- Modeling and Simulation
- Power Systems and Renewable Energy

Teaching

- EEE 141 Electrical Circuits I
- EEE 141L Electrical Circuits I Lab
- EEE241/ETE241 Electrical Circuits II
- EEE241L/ETE241L Electrical Circuits II Lab
- EEE 111/ ETE 111 Analog Electronics-I
- EEE 111L/ ETE 111L Analog Electronics-I Lab
- EEE 362 Power Systems
- EEE 362L Power Systems Lab
- EEE 552 Smart Energy Systems
- EEE 556 Smart Grid Design and Operation

Selected Publications

Conference Papers

- ASMJ Hasan, J Yusuf, LF Enriquez-Contreras, S Ula, **"Bad Cell Identification of Utility-Scale Battery Energy Storage System through Statistical Analysis of Electrical and Thermal Properties,"** *IEEE PES ISGT Europe 2021*, 2021
- ASMJ Hasan, LF Enriquez-Contreras, J Yusuf, S Ula, **"A Comprehensive Building Load Optimization Method from Utility Rate Structure Perspective with Renewables and Energy Storage,"** *2021 International Conference on Smart Energy Systems and Technologies (SEST)*, 2021
- ASMJ Hasan, LF Enriquez-Contreras, J Yusuf, MJ Barth, S Ula, **"Demonstration of Microgrid Resiliency with V2G Operation,"** *IEEE Transportation Electrification Conference and Expo (ITEC)*, 2021
- ASMJ Hasan, J Yusuf, S Ula, **"Nonconvex Thermal Modelling and Energy Optimization for Multizone Commercial Buildings with VAV Type HVAC Units,"** *2020 International Conference on Smart Grids and Energy Systems (SGES)*, 2020
- ASMJ Hasan, J Yusuf, RB Faruque, **"Performance comparison of machine learning methods with distinct features to estimate battery SOC,"** *2019 IEEE Green Energy and Smart Systems Conference (IGESSC)*, 2019

DR. MOHAMMAD ABDUL QAYUM [MAQM]

Assistant Professor

Post-doc, Ph.D. in Electrical Engineering (Computer Engineering), New Mexico State University, USA
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Biography

Mohammad Abdul Qayum is currently working as an Assistant Professor in the Electrical and Computer Engineering department of North South University, Dhaka, Bangladesh. He completed his B.Sc. degree in Electrical and Electronic Engineering (EEE) from BUET, Bangladesh. Soon after his graduation, he joined Eastern University of Bangladesh as a lecturer. He also worked in Banglalink, as Rollout Engineer. Later, he went for higher studies and obtained his MSc in Electrical Engineering (major-Computer Engineering) from Oklahoma State University, USA. He then obtained his Ph.D. in Electrical Engineering (major- Computer Engineering) from New Mexico State University, USA. During his M.Sc. and Ph.D., he worked as a Graduate Teaching Assistant and Research Assistant. His M.Sc. thesis was on Designing Multicore MIPS Simulator in SystemC and his Ph.D. work was on Transactional Memory for large scale graph applications. After completion of his Ph.D., he joined as a post-doctoral fellow in New Mexico State University where he worked on OS-friendly microarchitecture. Then he moved to Minnesota State University as Assistant Professor of Computer Engineering at Department of Electrical and Computer Engineering and Technology (ECET) where he taught Microprocessor Engineering II, Real-time Embedded Systems, Smart Sensors and Programmable Hardware Logic. Before joining North South University he worked as investor and developer in a startup based on HIVE blockchain.

Research Areas

- Embedded Systems and Internet of Things (IoT)
- Artificial Intelligence & Robotics
- Cloud Computing and Distributed Systems
- Human Computer Interaction (HCI)

Research Interests

High Performance Computing, Internet of Things (IoT), Robotics, Blockchains

Teaching

- CSE 332 Computer Organization and Architecture
- CSE 331 Microprocessor Interfacing & Embedded System
- CSE 532 Advanced Computer Architecture
- CSE 445 Machine Learning
- CSE499B/EEE499B/ETE499B – Senior Design II
- CSE499A/EEE499A/ETE499A – Senior Design I

Research Projects & Grants

Projects:

Multidisciplinary Solutions to Urban Heat Island Phenomenon: Comfort tower, Eco-friendly Air Cooler, and Foldable SolarDrive Automobile

Robot Dexterity Intelligence: A Reinforcement Learning Framework for Dual Robotic Arms with Blockchain-Enabled AI Skill Marketplace

Grants:

ICT Innovation Fund

NSU CTRG 2023-2024

DR. FARIAH MAHZABEEN [FMA]

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Biography

Dr. Fariah Mahzabeen is currently an assistant professor of ECE at North South University, Bangladesh.Before NSU, she was a tenure-track assistant professor at San Jose State University in USA. She also brings in industry experience from companies like Google, Verily and Meta at Silicon Valley.

Research Areas

- Artificial Intelligence & Robotics
- Embedded Systems and Internet of Things (IoT)
- Human Computer Interaction (HCI)
- Mobile, Wireless and Web Applications Development
- Semiconductor Device and Technology

Research Interests

With the broader research mission to provide: "Personalized, Inclusive and Impactful Innovations to Improve Human Lives", Dr. Mahzabeen has always been interested in interdisciplinary research ideas that combine hardware and software across multiple areas of STEM like: multidisciplinary areas like: **Biosensors, Wearables, IoT, AI, ML, HCI** – to build meaningful solutions to improve human experiences in health, education and the environment. Her current research projects are designed to engage students to solve challenging and meaningful problems.

She has established a research group, Mahzabeen Lab in 2024 at NSU, and welcomes passionate students and collaborators from diverse disciplines.

Teaching

- EEE241/ETE241 Electrical Circuits II
- EEE241L/ETE241L Electrical Circuits II Lab
- EEE 299 Junior Design Project I
- CSE499A/EEE499A/ETE499A – Senior Design I
- CSE499B/EEE499B/ETE499B – Senior Design II
- EEE 321 Introduction to Communications Systems

Research Projects & Grants

Ongoing Research Projects:

1. *Assessing the usability of existing smartwatches among the older population in low-to-middle-income-countries (LMICs) like Bangladesh.*
2. *Developing a biosensor for on-field detection of Typhoid Bacteria*
3. *Skin Disease Detection with Deep Learning* (accepted in IEEE TENCON 2024)
4. *Classification Precision in Endodontic Imaging using Advanced Deep Learning with Adaptive Squeeze-and-Excitation in Enhanced VGG-19 and Feature Pyramid Network* (accepted in IEEE TENCON 2024)
5. *A Machine Learning and Explainable AI-Based Risk Assessment for Heat-Related Illness*
6. *Prediction of Mental Health Risk Levels in University Students Using Machine Learning Techniques*
7. *Developing A Multimodal Fall Detection Sensor for Elderly Care*

8. *Cardiac Risk Monitoring at Home Through Multiple Sensors and ML*

Current Grants: NSU CTRGC, 2023-2024 and Seed Grant (NSU-CHRF MoU)

Professional Activity

- Faculty Advisor: IEEE NSU Student Branch, Women in Engineering Affinity Group
- Reviewer: IEEE TENCON, 2024
- Reviewer: IEEE ICICT Conference, 2024, 2023
- Reviewer – NASA MITTIC Proposals, 2022, 2023
- Next-Gen Biotech Session Co-Chair, Silicon Valley Women in Engineering Conferences – 2021, 2022

DR. MOHAMMAD SHIFAT-E-RABBI [MSRB]

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PhD, Imaging and Data Science Laboratory, Department of Biomedical Engineering, University of Virginia, USA
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Biography

Courses teaching: CSE 115, CSE 215, CSE 440, CSE 445.

Research Areas

- Artificial Intelligence & Robotics
- Signals and Image Processing

Teaching

- CSE 115 Programming Language I
- CSE 215 Programming Language II
- CSE 440 Artificial Intelligence
- CSE 445 Machine Learning
- CSE 299 Junior Design Course
- CSE499A/EEE499A/ETE499A – Senior Design I
- CSE499B/EEE499B/ETE499B – Senior Design II

DR. MAKTUBA MOHID BINNI [MMBA]

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Teaching

- CSE 215 Programming Language II
- CSE 215L Programming Language II Lab
- CSE 327 Software Engineering
- CSE 534 Software Quality Assurance

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DR. M MAKSUD ALAM

Assistant Professor

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BSc in EEE from CUET, Chittagong, Bangladesh

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Research Areas

- Signals and Image Processing
- RF, Microwave and Communication Technology
- Broadband Access and Communication Technologies

Research Interests

- Feedback in Communications Channels
- MIMO Signal Processing for HMI / Medical Imaging
- Signal Processing for Smart Grids
- Error Correcting Codes

Teaching

- EEE311/ ETE311 Analog Electronics II
- EEE 221 Signals and Systems
- EEE241/ETE241 Electrical Circuits II
- EEE 141 Electrical Circuits I

Selected Publications

Conference Papers

- M Maksud Alam, Zahidul Amin, and Md. Serajul Abrar, **"Performance Analysis Of Reed Muller Coded OFDM On Nakagami−m Fading Environment,"** *Proc. 4th IEEE/CIC International Conference on Communications in China, ICCC, Shenzhen, China*, 2015

- M Maksud Alam, Farabi Hasan Chadni and Saiful Ahmed Papon, **"Performance Analysis of MIMO-COFDM under Rayleigh Fading Channel,"** *Proc. 7th IEEE International Conference on Wireless Communications and Signal Processing, WCSP, Nanjing, China*, 2015
- M Maksud Alam, Nusrat J. Disha, Md. Ataur Rahman and Besma Smida, **"Maximum PEP and ICI Over Coset Representatives for 32 Subcarriers Reed- Muller Coded OFDM,"** *Proc. 8th IEEE International Conference on Electrical & Computer Engineering, ICECE, Dhaka, Bangladesh*, 2014
- M Maksud Alam and Besma Smida, **"PAPR and ICI Reduction of OFDM Signals,"** *Proc. 1st International Conference on Control, Engineering and Information Technology, ICCEIT, Tunisia*, 2013
- M Mofazzal Hossain, Y Yao, M Rafiqul Alam, M Maksud Alam and T Watanabe, **"Modeling and Numerical Analysis of Thermal Treatment of Granulated Porous Particles by Induction Plasma,"** *Proc. 4th IEEE International Conference on Electrical & Computer Engineering, ICECE, Dhaka, Bangladesh*, 2008

Others

- M Maksud Alam, **"A coding technique to reduce PAPR and interference of OFDM systems, M. S. Thesis,"** *ProQuest, UMI Dissertations Publishing, Ann Arbor, MI, USA*, 2013

DR. MOHAMMAD MAHMUDUL ALAM [MLD]

Assistant Professor

Ph.D. & M.Sc. in Computer Science, University of Maryland, Baltimore County (UMBC), United States

B.Sc. in Electrical and Electronic Engineering, Bangladesh University of Engineering and Technology (BUET), Bangladesh

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Biography

Mohammad Mahmudul Alam, Ph.D. is a deep learning specialist with over six years of hands-on experience, including internships at Amazon Web Services (AWS) and Analog Devices Inc. (ADI). He has a strong track record of publications in prestigious conferences such as NeurIPS, ICML, AISTATS, AAAI,

KDD, and CVPR. Dr. Alam earned his Ph.D. and M.Sc. in Computer Science from the University of Maryland, Baltimore County (UMBC) and his Bachelors in Electrical and Electronic Engineering from Bangladesh University of Engineering and Technology (BUET).

Research Areas

- Artificial Intelligence & Robotics

Research Interests

Deep Learning, Computer Vision, Generative AI, Sequence Modeling, Natural Language Processing

Teaching

- CSE 445 Machine Learning
- CSE 440 Artificial Intelligence
- CSE 115 Programming Language I
- CSE 115L Programming Language I Lab

Selected Publications

Journals

- Mohammad Mahmudul Alam, Mohammad Tariqul Islam, S. M. Mahbubur Rahman, **"Unified learning approach for egocentric hand gesture recognition and fingertip detection,"** *Pattern Recognition, Elsevier Science Publishers*, 2022

Conference Papers

- Mohammad Mahmudul Alam, Alexander Oberle, Edward Raff, Stella Biderman, Tim Oates, James Holt, **"A Walsh Hadamard Derived Linear Vector Symbolic Architecture,"** *In 38th Annual Conference on Neural Information Processing Systems (NeurIPS), Vancouver, Canada*, 2024
- Mohammad Mahmudul Alam, Edward Raff, Stella Biderman, Tim Oates, James Holt, **"Holographic Global Convolutional Networks for Long-Range Prediction Tasks in Malware Detection,"** *In 27th International Conference on Artificial Intelligence and Statistics (AISTATS), Valencia, Spain*, 2024
- Mohammad Mahmudul Alam, Edward Raff, Stella Biderman, Tim Oates, James Holt, **"Recasting Self-Attention with Holographic Reduced Representations,"** *In 40th International Conference on Machine Learning (ICML), Honolulu, HI, USA*, 2023
- Mohammad Mahmudul Alam, Edward Raff, Tim Oates, James Holt, **"Deploying Convolutional Networks on Untrusted Platforms Using 2D Holographic Reduced Representations,"** *In 39th International Conference on Machine Learning (ICML), Baltimore, MD, USA*, 2022

- # MR. IQBALUR RAHMAN ROKON [IQR]
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MIRZA MOHAMMAD LUTFE ELAHI [MLE]

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Biography

Mirza Mohammad Lutfe Elahi received a B.Sc. degree in Computer Science and Engineering from the University of Dhaka, Bangladesh. He pursued his M.Sc. in Computer Engineering at the University of Texas at Arlington, USA. He worked on modeling and simulation of a General Motors (GM) conveyor system using decision-making optimizer in Masters Thesis. He also worked in CISCO, Milpitas as a Software Engineer Intern. He joined North South University in 2011. His current research interests are primarily in Machine Learning and Computer Vision.

Research Areas

- Artificial Intelligence & Robotics

Research Interests

- Machine Learning
- Computer Vision

Teaching

- CSE 115 Programming Language I
- CSE 115L Programming Language I Lab
- CSE 445 Machine Learning
- CSE 299 Junior Design Course
- CSE499A/EEE499A/ETE499A – Senior Design I
- CSE499B/EEE499B/ETE499B – Senior Design II

Selected Publications

Journals

- Nahian Ahmed, Safin Mahmud, M. M. Lutfe Elahi, Silvia Ahmed, Mohammad Sujauddin, **"Forecasting River Sediment Deposition through Satellite Image Driven Unsupervised Machine Learning Techniques,"** *Remote Sensing Applications: Society and Environment, Volume 13, Pages 435-444*, 2019
- Mirza M. Lutfe Elahi, Karthik Rajpurohit, Jay M. Rosenberger, Gergely Zaruba, John Priest, **"Optimizing real-time vehicle sequencing of a paint shop conveyor system,"** *Omega (The International Journal of Management Science), Volume 55, Pages 61-72*, 2015

Conference Papers

- A. Kamal, M. M. Lutfe Elahi, Bruce Poon, M. Ashraful Amin, **"Fusion Based Approach to Discovering Social Circles in Ego Networks,"** *International Conference on Machine Learning and Cybernetics (ICMLC)*, 2015
- M. Amirul Islam, M. Rasheduzzaman, M. M. Lutfe Elahi, Bruce Poon, M. Ashraful Amin, Hong Yan, **"Feature Fusion for Robust Object Tracking,"** *International Conference on Wavelet Analysis and Pattern Recognition (ICWAPR)*, 2015
- M. M. Lutfe Elahi, R. Yasir, M. A. Syrus, M. S. Q. Z. Nine, I. Hossain, N. Ahmed, **"Computer Vision Based Road Traffic Accident and Anomaly Detection in the Context of Bangladesh,"** *International Conference on Informatics, Electronics and Vision (ICIEV)*, 2014
- Khondekar Mahabub Akram, M. M. Lutfe Elahi, M. Ashraful Amin, **"Multiple Level Set Region based Single Line Road Extraction,"** *International Conference on in Machine Learning and Cybernetics (ICMLC)*, 2013

Research Projects & Grants

- **Funding** TK 500K BDT, ***North South University*** Innovation Funding, 2023-2024
- **Funding** TK 400K BDT, ***North South University*** Innovation Funding, 2018-2019
- **Funding** TK 300K BDT, ***North South University*** Innovation Funding, 2012-2013

MS. SILVIA AHMED [SVA]

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Research Areas

- Human Computer Interaction (HCI)
- Artificial Intelligence & Robotics

Research Interests

- Machine Learning
- Deep Learning
- Application of AI in Environmental Science and Management
- Image Processing
- Human-computer interaction
- Big data

Teaching

- CSE 173 Discrete Mathematics
- CSE 215 Programming Language II
- CSE 215L Programming Language II Lab
- CSE 445 Machine Learning
- CSE 299 Junior Design Course

Selected Publications

Conference Papers

- Nova Ahmed, Lamia Iftekhar, Silvia Ahmed, Ridwan Rahman, Tanveer Reza, Sarah Shoilee, Charisma F. Choudhury, **"Bap re Bap!: Driving Experiences through Multimodal Unruly Traffic on Bumpy Roads,"** *ACM DEV*, 2015
- Michael Klaiber, Donald G. Bailey, Silvia Ahmed, Yousef Baroud, Sven Simon, **"A high-throughput FPGA architecture for parallel connected components analysis based on label reuse.,"** *FPT*, 2013
- M. Klaiber, S. Ahmed, M. Najmabadi, Y. Baroud, W. Li, S. Simon, **"Imaging Sensor with integrated feature extraction using connected component labeling,"** *SENSOR*, 2013
- Zhe Wang, Sven Simon, Michael Klaiber, Silvia Ahmed, Thomas Richter, **"SSPQ – spatial domain perceptual image codec based on subsampling and perceptual quantization.,"** *ICIP*, 2012
- J. Laackmaan, S. Ahmed, R. Sedelmayer, M. Klaiber, W. Pauer, S. Simon, and H.-U. Moritz, **"Investigation of polymerization and drying of polyvinylpyrrolidone in an acoustic levitator using a smart camera for online process measurement,"** *ICLASS*, 2012
- S. Ahmed, Z. Wang, M. Klaiber, S. Wahl, M. Wroblewski, S. Simon, **"Parallel hardware architecture for JPEG-LS basen on domain decomposition.,"** *SPIE Volume 8499*, 2012

Others

- M. Klaiber, S. Ahmed, Z. Wang, L. Rockstroh, Y. Gera, S. Simon, **"Online imaging analysis of spray processes based on a reconfigurable embedded system,"** *10th Workshop über Sprays, Techniken der Fluidzerstäubung und Untersuchungen von Sprühvorgängen*, 2012

MD. NAQIB IMTIAZ HUSSAIN [NQH]

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Biography

Md. Naqib Imtiaz Hussain managed technology and innovation in software industry and Telco for over 16 years. He was the head of Android department at Samsung R&D Institute Bangladesh and managed projects with over 150 engineers that developed software models for over 94 million mobiles in Middle East and Africa market. Prior to that he managed end to end IP network including MPLS Backbone of Robi Axiata Limited, Bangladesh. In the US, he worked on the EMAT project at University of Denver as a researcher, funded by Electric Power Research Institute (EPRI). He holds an MS in EEE from University of Colorado at Boulder, USA and a BS in EEE from Bangladesh University of Engineering and Technology, Bangladesh.

Research Areas

- Technology Transfer and Policy

Research Interests

Technology Innovation and Management

Data Science

Information Architecture

Teaching

- EEE 452 Engineering Economics
- CSE 482 Internet and Web Technology

MS. TANJILA FARAH [TNF]

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Research Areas

- Data Networking and Information Security
- Database and Information Systems
- Artificial Intelligence & Robotics

Research Interests

Internet & Web application security, Computer Networks, Machine Learning,

Teaching

- CSE 311 Database Systems
- EEE 211 Digital Logic Design
- EEE 211L Digital Logic Design Lab
- CSE 338 Data Communication & network
- CSE 332 Computer Organization and Architecture
- CSE 231 Digital Logic design
- CSE 231L Digital Logic design Lab

Selected Publications

Journals

- Touhid Bhuiyan, Delwar Alam, Tanjila Farah, **"Evaluating the Readiness of Cyber Resilient Bangladesh,"** *Journal of Internet Technology and Secured Transactions (JITST), Volume 4, Issue 1, ISSN 2046-3723*, 2015
- Hamdan Kaiser, Mumin Az Zahira Maria, Fatiha Jahan, Tanjila Farah, **"QUEBO,"** *International Journal of Engineering, Applied and Management Sciences Paradigms (IJEAM)*, 2015
- Moniruz Zaman, Delwar Alam, Touhid Bhuiyan, Tanjila Farah , **"A Study of the Effects of Heartbleed Vulnerability in Bangladesh,"** *International Journal of Cyber-Security and Digital Forensics (IJCSDF)*, 2018
- Tanjila Farah, Rashed Shelim, Moniruz Zaman, Delwar Alam, **"Study of Race Condition: A Privilege Escalation Vulnerability,"** *Journal of Systemics, Cybernetics and Informatic (JSCI)*, 2017

Conference Papers

- T. Farah, S. Lally, R. Gill, N. Al-Rousan, R. Paul, D. Xu, and Lj. Trajkovic, **"Collection of BCNET BGP traffic,"** *Proc. 23rd International Teletraffic Congress*, 2011

- S. Lally, T. Farah, R. Gill, R. Paul, N. Al-Rousan, and Lj. Trajkovic, **"Collection and characterization of BCNET BGP traffic,"** *Proc. 2011 IEEE Pacific Rim Conference on Communications, Computers and Signal Processing*, 2011
- R. Gill, T. Farah, and Lj. Trajkovic, **"Comparison of WiMAX and ADSL performance when streaming audio and video content,"** *OPNETWORK 2011*, 2011
- T. Farah and Lj. Trajkovic, **"Anonym: a tool for anonymization of the Internet traffic,"** *Proc. 2013 IEEE International Conference on Cybernetics (CYBCONF 2013)*, 2013
- T. Farah, D. Alam, M. A. Kabir, T. Bhuiyan, **"SQLi Penetration Testing of Financial Web Applications: Investigation of Bangladesh Region,"** *World Congress on Internet Security (WorldCIS-2015)*, 2015
- Tanjila Farah, Moniruzzaman Shojol, Md. Maruf Hassan, Delwar Alam, **"Assessment of vulnerabilities of web applications of Bangladesh: A case study of XSS & CSRF,"** *The Sixth International Conference on Digital Information & Communication Technology & its Applications (DICTAP2016)*, 2016
- D. Alam, T. Farah, M. A. Kabir, **"Exploring the SQL injection vulnerabilities of .bd domain web applications,"** *3rd International Conference on Advances in Computing, Electronics and Communication (ACEC 2015)*, 2015
- D. Alam, T. Bhuiyan, M. A. Kabir, T. Farah, **"SQLi Vulnerabilty in Education Sector Websites of Bangladesh,"** *The Second International Conference on Information Security and Cyber Forensics (InfoSec2015)*, 2015
- Tanjila Farah, Delwar Alam, Md. Nadir Bin Ali, Md. Alamgir Kabir, **"Investigation of Bangladesh Region Based Web Applications: A Case Study of 64 Based, Local, and Global SQLi Vulnerability,"** *IEEE International Women in Engineering (WIE) Conference on Electrical and Computer Engineering (WIECON)*, 2015
- Taoseef Ishtiak, Sajid Ahmed, Mehreen Hossain Anila, Saima Islam, Rashed Shelim, Tanjila Farah, **"Road State Classification of Bangladesh with Convolutional Neural Network Approach,"** *Road State Classification of Bangladesh with Convolutional Neural Network Approach*, 2019
- Taoseef Ishtiak, Sajid Ahmed, Mehreen Hossain Anila, Tanjila Farah, **"A Convolutional Neural Network Approach for Road Anomalies Detection in Bangladesh with Image Thresholding,"** *3rd World Conference on Smart Trends in Systems, Security And Sustainability (WorldS4 2019)*, 2019
- Md. Amanat Khan Shishir, Shahariar Rashid Fahim, Fairuz Maesha Habib, Tanjila Farah, **"EYE ASSISTANT:Using mobile application to help the visually impaired,"** *1st International Conference on Advances in Science, Engineering and Robotics Technology (ICASERT-2019)*, 2019
- 11. D. Alam, M. Zaman, T. Farah, R. Rahman and M. S. Hosain, **"Study of the Dirty Copy on Write, a Linux Kernel memory allocation vulnerability,"** *2017 International Conference on Consumer Electronics and Devices (ICCED)*, 2017
- T. Farah, D. Alam, M. Zaman, and T. Bhuiyan, **"A case study of Blockchain Technology,"** *International Conference on Cyber Security and Computer Science (ICONCS 2018)*, 2018
- 10. M. S. Hossain, Sazzad Hosain, Tanjila Farah, **"A Study of Cyber security threats in core banking system of Bangladesh,"** *7th International Conference on Software and Computing Technologies (ICSCT 2018)*, 2018

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Research Areas

- Human Computer Interaction (HCI)
- Artificial Intelligence & Robotics

Research Interests

Machine Learning, Deep Learning

Teaching

- CSE499A/EEE499A/ETE499A – Senior Design I
- CSE499B/EEE499B/ETE499B – Senior Design II
- CSE 465 Pattern Recognition and Neural Network
- CSE 445 Machine Learning
- CSE 215 Programming Language II
- CSE 215L Programming Language II Lab
- CSE 115 Programming Language I
- CSE 115L Programming Language I Lab
- CSE 231 Digital Logic design
- CSE 231L Digital Logic design Lab
- MAT 116 Pre-Calculus
- MAT 120 Calculus-I
- CSE 299 Junior Design Course

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Biography

Syeda Sarita Hassan has been working as a Core Full Time Faculty Member at North South University (NSU) in the Department of Electrical & Computer Engineering (ECE) since May 2018. She has also been working as the Lab Coordinator for the ECE department, managing all the hardware and software labs. She has achieved her Master's degree in Communications Engineering (Major in Radio Communications) from Aalto University (former Helsinki University of Technology) in Finland with Distinction. Sarita worked as a Graduate Teaching Assistant in the Department of Electronics & Communications Engineering at East West University (EWU) prior to her Master's degree in Finland. After returning to the country, she worked as a Lecturer in the Department of Electrical and Electronic Engineering (EEE) at American International University-Bangladesh (AIUB).
Presently, she is teaching two major courses, namely Electrical Circuits and Analog Electronics, at NSU. Her current research focuses on Photonics and Metamaterials.

Teaching

- EEE 111/ ETE 111 Analog Electronics-I
- EEE 111L/ ETE 111L Analog Electronics-I Lab
- EEE 141 Electrical Circuits I
- EEE 141L Electrical Circuits I Lab
- CSE 299 Junior Design Course
- CSE 231 Digital Logic design
- CSE 231L Digital Logic design Lab

MR. INTISAR TAHMID NAHEEN [ITN]

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Biography

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Research Areas

- Artificial Intelligence & Robotics
- RF, Microwave and Communication Technology

Research Interests

1. Reinforcement Learning
2. Natural Language Processing (NLP)
3. Application of Machine Learning in the field of Renewable Energy

Teaching

- CSE 311 Database Systems
- CSE 299 Junior Design Course
- EEE 111/ ETE 111 Analog Electronics-I

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Research Interests

Computer Network

Network and System Security

Teaching

- CSE 115 Programming Language I
- CSE 299 Junior Design Course
- CSE 311 Database Systems
- CSE 338 Data Communication & network

MR. ABU OBAIDAH [ABO]

Lecturer

MS in Electrical Engineering, University of Akron, Ohio, USA
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Biography

Md. Abu Obaidah was born in Chittagong, Bangladesh. After finishing his secondary schooling, he enrolled in Chittagong Govt. College. He then finished BSc in Electrical and Electronic engineering from Bangladesh University of Engineering and Technology (BUET), Dhaka. In his B.Sc. class he secured 7th merit position among 124 students. Then he worked in the Bangladesh Council of Scientific and Industrial Research (BCSIR), Dhaka as a Research Engineer for almost four years. He then moved to USA and obtained his MS degree in Electrical Engineering from The University of Akron, Ohio, USA. After that he worked as a Lecturer in the department of Computer and Communication Engineering of International Islamic University of Chittagong at Chittagong for two years and nine months. He joined as a Lecturer in the then Electrical Engineering and Computer Science Department of North South University, Dhaka at fall, 2006.

Research Areas

- Mobile, Wireless and Web Applications Development

Research Interests

CDMA, MC-CDMA, OFDM, Multi-User Detection, Channel Coding, Fading Channels

Teaching

- EEE 141 Electrical Circuits I
- EEE 141L Electrical Circuits I Lab
- EEE241/ETE241 Electrical Circuits II
- EEE241L/ETE241L Electrical Circuits II Lab

MR. SYED FATEH AL KASTUR [FKR]

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Biography

Syed Kastur was born in Dhaka, Bangladesh. He finished both secondary and higher secondary from Jhenidah Cadet College. He then finished BSc in Electrical and Electronic engineering from Bangladesh University of Engineering and Technology (BUET), Dhaka. Then he worked in AKTEL currently known as Robi for almost three years. He then moved to USA and obtained his MS degree in Electrical Engineering from The University of Arkansas, Arkansas, USA. Returning from USA he worked in Grameenphone for five years. He joined as a Lecturer in the then Electrical Engineering and Computer Science Department of North South University, Dhaka at Spring, 2011.

Research Areas

- Modeling and Simulation

Research Interests

Electromagnetics
Simulation and Modelling

Teaching

- EEE 141 Electrical Circuits I
- EEE 221 Signals and Systems
- EEE 422/ETE 422 Principles of Digital Communications
- EEE 471 Digital Signal Processing

MR. RIFAT AHMED HASSAN [RIH]

Lecturer

- Master of Information Technology from University of Sydney, Australia
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Research Areas

- Mobile, Wireless and Web Applications Development
- Software Engineering
- Database and Information Systems
- Embedded Systems and Internet of Things (IoT)
- Human Computer Interaction (HCI)

Teaching

- CSE 115 Programming Language I
- CSE 115L Programming Language I Lab
- CSE 215 Programming Language II
- CSE 215L Programming Language II Lab
- CSE 225 Data Structures and Algorithms
- CSE 225L Data Structures and Algorithms Lab
- CSE 299 Junior Design Course
- CSE 311 Database Systems
- CSE 311L Database Systems Lab
- CSE 482 Internet and Web Technology
- CSE 231 Digital Logic design
- CSE 231L Digital Logic design Lab
- CSE 498/EEE 498/ETE 498 Internship/Co-op/Directed Research

MR. MUHAMMAD SHAFAYAT OSHMAN [MUO]

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Biography

Muhammad Shafayat Oshman is currently working as a Lecturer at North South University. He previously worked with Ericsson Canada on research focused on Security Metrics for 5G/NFV environment. He completed his Bachelor's from North South University with a degree in Computer Science with distinction and completed his Master's in Computer Science (MCS) from Carleton University. His research interests are Computer Networks, Data Communications, Computer/Cloud Security. His current researches include analyzing security metrics and 5G Communications.

Research Areas

- Cloud Computing and Distributed Systems
- Data Networking and Information Security
- Software Engineering

Research Interests

Computer Networks, Data Communications, Computer/Cloud Security, Software Security

Teaching

- CSE 215 Programming Language II
- CSE 215L Programming Language II Lab
- CSE 225 Data Structures and Algorithms
- CSE 225L Data Structures and Algorithms Lab
- CSE 299 Junior Design Course
- CSE 373 Design and Analysis of Algorithms
- CSE 325/CSE 425 Concepts of Programming Language
- CSE 493 Special Topics
- CSE 498/EEE 498/ETE 498 Internship/Co-op/Directed Research

Selected Publications

Conference Papers

- Asif Ahmed Neloy, Muhammad Shafayat Oshman, Md. Monzurul Islam, Md. Julhas Hossain, Zunayeed Bin Zahir , **"Content-Based Health Recommender System for ICU Patient,"** *MIWAI 2019: Multi-disciplinary Trends in Artificial Intelligence*, 2019
- Lianying Zhao, Muhammad Shafayat Oshman, Mengyuan Zhang, Fereydoun Farrahi Moghaddam, Shubham Chander, Makan Pourzandi, **"Towards 5G-ready Security Metrics,"** *ICC 2021 – IEEE International Conference on Communications*, 2021
- Labiba Binte Ismail, Mahira Ibnath Joytu, Tasnim Islam Plabon, Muhammad Shafayat Oshman, **"Evaluation of Machine Learning Models to Forecast Inflation: Bangladesh**

as a Case Study," *2023 International Symposium on Networks, Computers and Communications (ISNCC)*, 2023

- Sara Fariha Shanchary, Md Naved Meraz, Ayman Ibne Hakim, Chowdhury Nafis Faiyaz, Muhammad Shafayat Oshman, **"Investigating the Factors Affecting Risky Levels of Alcohol Consumption among Students Using Machine Learning Approach,"** *2024 6th Asia Conference on Machine Learning and Computing (ACMLC 2024)*, 2024

MR. MD. ISHAN AREFIN HOSSAIN [IAH]

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Biography

Md. Ishan Arefin Hossain started his academic journey in the capital of Bangladesh; Dhaka. He attended the SSC exam from a local school in Dhaka and the HSC exam from Dhaka College and passed both exams with the highest GPA. After that, Md. Ishan Arefin Hossain graduated in CSE from BRAC University back in 2018 with the Highest Distinction award. During his undergrad period, he received multiple VC List and Dean's List awards for his excellent academic performance and published a few international research papers. After his graduation, he served at several universities in Bangladesh as a Lecturer and continued his research work.

He was awarded the prestigious "**British Council GREAT Scholarship**" award for pursuing his master's in the UK in 2021. During his post-graduation period, he also served as a Software Developer at Quorum Development Ltd in the Uk. After completing his master's degree in the UK with Distinction, he returned to Bangladesh and he is now passionately serving as a Lecturer at the ECE Department of NSU from 2023.

Research Areas

- Embedded Systems and Internet of Things (IoT)
- Artificial Intelligence & Robotics

Research Interests

- Edge Intelligence
- Smart Cyber-Physical Systems
- IoT-based Intelligent Systems

Teaching

- CSE 311 Database Systems
- CSE 311L Database Systems Lab
- CSE 215 Programming Language II
- CSE 215L Programming Language II Lab
- CSE 299 Junior Design Course
- CSE 225 Data Structures and Algorithms
- CSE 225L Data Structures and Algorithms Lab

Selected Publications

Journals

- Md. Ishan Arefin Hossain, Anika Tabassum, Zia Ush Shamszaman, **"Deep edge intelligence-based solution for heart failure prediction in ambient assisted living,"** *Discover Internet of Things*, 2023
- Dipta Neogi, Mahirul Alam Chowdhury, Mst. Moriom Akter, Md. Ishan Arefin Hossain, **"Mobile detection of cataracts with an optimised lightweight deep Edge Intelligent technique,"** *IET Cyber-Physical Systems: Theory & Applications*, 2024
- Rashik Iram Chowdhury, Jareen Anjom, Md. Ishan Arefin Hossain, **"A novel edge intelligence-based solution for safer footpath navigation of visually impaired using computer vision,"** *Journal of King Saud University – Computer and Information Sciences*, 2024
- Tahiya Tasneem Oishee, Jareen Anjom, Uzma Mohammed, Md. Ishan Arefin Hossain, **"Leveraging Deep Edge Intelligence for Real-time Respiratory Disease Detection,"** *Clinical eHealth*, 2025

Conference Papers

- Md. Ishan Arefin Hossain, Ahmed Kiser, Israt Jahan Mitu, Syeda Mahin Binta Haque, **"Intelligent IoT-based Combined Crop-type and Disease Prediction System with Different Machine Learning & Deep Learning Techniques,"** *10th International Conference on Electrical Engineering, Computer Science and Informatics (EECSI)*, 2023
- S.M. Shahidur Harun Rumy, Md. Ishan Arefin Hossain, forji Jahan, Tanijna Tanvin, **"An IoT based System with Edge Intelligence for Rice Leaf Disease Detection using Machine Learning,"** *IEEE International IOT, Electronics and Mechatronics Conference (IEMTRONICS)*, 2021

- Mariha Afroz, Nazia Hasan, Md. Ishan Arefin Hossain, **"IoT Based Two Way Safety Enabled Intelligent Stove with Age Verication Using Machine Learning,"** *International Conference on Computer Communication and Informatics (ICCCI)*, 2021
- Md. Ishan Arefin Hossain, Mridul Banik, Ismail Hossain, Md. Ashraful Alam, **"IOT based Autonomous Class Attendance System using Non-Biometric Identification,"** *Joint 7th International Conference on Informatics, Electronics & Vision (ICIEV) and 2nd International Conference on Imaging, Vision & Pattern Recognition (icIVPR)*, 2019
- Md. Yousuf Hossain, Ismail Hossain, Mridul Banik, Md. Ishan Arefin Hossain, Amitabha Chakrabarty, **"Embedded System based Bangla Intelligent Social Virtual Robot with Sentiment Analysis,"** *Joint 7th International Conference on Informatics, Electronics & Vision (ICIEV) and 2nd International Conference on Imaging, Vision & Pattern Recognition (icIVPR)*, 2019

Research Projects & Grants

North South University Conference Travel and Research Grant (CTRG) 2023 – 2024

Professional Activity

- Juror, Bangladesh Blockchain Olympiad (Artificial Intelligence Category)
- Invited Speaker, EdgeTech Forum: Exploring Intelligence at the Edge and Shaping Technology Transfer and Policy, IEEE NSU Student Branch

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Research Areas

- Data Networking and Information Security

- Software Engineering

Research Interests

- Network Security
- Web Security
- Browser Security
- Medical Device Security and Health IoT

Teaching

- CSE 373 Design and Analysis of Algorithms
- CSE 225 Data Structures and Algorithms
- CSE 327 Software Engineering

MR. OMAR-IBNE SHAHID [OISD]

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Research Areas

- Artificial Intelligence & Robotics
- Human Computer Interaction (HCI)
- Signals and Image Processing

Research Interests

- AI in Healthcare
- Medical Imaging
- AI Security
- Behavior Modeling

Teaching

- CSE 231 Digital Logic design

- CSE 231L Digital Logic design Lab
- CSE 373 Design and Analysis of Algorithms
- EEE 141 Electrical Circuits I
- EEE 141L Electrical Circuits I Lab
- CSE 465 Pattern Recognition and Neural Network

MR. NABIL BIN HANNAN [NLH]

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Biography

Mr. Nabil Bin Hannan received his Bachelor's degree from the Islamic University of Technology (IUT) in Computer Science and Engineering. He pursued his MSc in Computer Science at Dalhousie University, Canada and is in the process of completing his doctoral degree at the University of Waterloo, Canada. He joined North South University when he came back to Bangladesh. He enjoys his leisure time with his family!

Research Areas

- Human Computer Interaction (HCI)
- Artificial Intelligence & Robotics
- Database and Information Systems
- Mobile, Wireless and Web Applications Development

Research Interests

Human-centered design of technologies in education, healthcare, and computing for human values.

Teaching

- CSE 299 Junior Design Course
- CSE 311 Database Systems

- CSE 311L Database Systems Lab
- CSE 332 Computer Organization and Architecture

MR. SHAUROV DAS [SVD]

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Research Areas

- Signals and Image Processing

Research Interests

Magnetic Resonance Imaging, Arterial Spin Labeling, Signal & Image Processing

Teaching

- EEE 111/ ETE 111 Analog Electronics-I
- EEE 111L/ ETE 111L Analog Electronics-I Lab
- EEE 221 Signals and Systems
- EEE 321 Introduction to Communications Systems
- EEE 321L Introduction to Communications Systems Lab
- EEE 471 Digital Signal Processing
- ETE 471L Digital Signal Processing Lab

MR. MD RAQIBUR RAHMAN [RQN]

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Biography

Md Raqibur Rahman completed his masters in Marine and Maritime Intelligent Robotics from NTNU, Norway and University of Toulon, France as an Erasmus Mundus Scholar. Prior to that he completed his Bsc in EEE from Islamic University of Technology (IUT), Bangladesh.

Research Areas

- Artificial Intelligence & Robotics

Research Interests

- Robotic Perception
- Deep Learning
- Marine Robotics

Teaching

- EEE 141 Electrical Circuits I
- EEE241/ETE241 Electrical Circuits II
- EEE 363 Electrical Machines

Selected Publications

Conference Papers

- Md Raqibur Rahman, Ehtashamul Haque, Sadia Tasneem Rahman, K Habibul Kabir, Yaseen Adnan Ahmed, **"Modelling of an Efficient System for Predicting Ships' Estimated Time of Arrival Using Artificial Neural Network,"** *Computational Intelligence: Select Proceedings of InCITe 2022*, 2023

- Md Raqibur Rahman, Sanzana Tabassum, Ehtashamul Haque, Mirza Muntasir Nishat, Fahim Faisal, Eklas Hossain, **"CNN-based Deep Learning Approach for Micro-crack Detection of Solar Panels,"** *2021 3rd International Conference on Sustainable Technologies for Industry 4.0 (STI)*, 2021

MR. MOHAMMAD SHAFAYET HOSSAIN [MFY]

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Biography

Decarbonizing the power generation sector is one of the highest priority of 21st century. To assist the modern society to achieve net zero emission goal aligned with SDG 7 goal, my career aspirations has been gathered around the renewable electricity generation. Thus, I have accomplished my master's degree in the Desentralised Smart Energy Systems with the esteemed Erasmus Mundus Scholarship offered by the European Commission. I have studied the multidisciplinary prospects of energy systems featuring the electrical, mechanical and electro-chemical energy conversions along while specializing in the global energy market modelling and optimization from KTH Royal Institute of Technology. Currently, my research works is focusing on the grid integration of renewable energy systems through medium voltage power converters along with the optimal sizing and the energy managements of the relevant converters.

Research Areas

- Power Systems and Renewable Energy

Research Interests

Power Electronic Converters, Energy management in Microgrids, Power Systems Optimization

Teaching

- EEE 362 Power Systems
- EEE 312 Power Electronics
- EEE 111/ ETE 111 Analog Electronics-I
- CEE 110 Engineering Drawing (EEE 154)

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Research Interests

Data Mining and Knowledge Discovery

Machine Learning

Teaching

- CSE 115 Programming Language I
- CSE 115L Programming Language I Lab
- CSE 215 Programming Language II
- CSE 215L Programming Language II Lab
- CSE 373 Design and Analysis of Algorithms

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Biography

Dr. Mohammad Junaebur Rashid is a professor of the dept. of Electrical and Electronic Engineering, University of Dhaka, Bangladesh. He has completed his PhD from the University of Nice SA, CNRS-CRHEA, France in 2012. Also he was a post-doctoral researcher of Solar Energy Research Institute (SERI), Universiti Kebangsaan Malaysia (UKM). Earlier he did his MS and BSc from the dept. of Applied Physics, Electronics and Communication Engineering (currently known as EEE), University of Dhaka, Bangladesh. His research interest lies basically in the field of semiconductor materials and nano-photonics. He has published more than 45 journal papers.

Research Areas

- Semiconductor Device and Technology

Research Interests

- Semiconductor materials growth (Group-III Nitride, Nanostructure, Thin film for solar cell)
- Thin film photovoltaic (PV) materials: CZTS, CIGS, Perovskite and CdTe

- Nano-photonics (Photonic crystals, QDs)
- Optical resonators: Microdisks and distributed Bragg reflectors (DBR)

Teaching

- EEE 111/ ETE 111 Analog Electronics-I
- EEE 141 Electrical Circuits I

Professional Activity

Member Optica (Former OSA)

DR. SHAMIM AL MAMUN [SAM3]

Professor (Adjunct)

Office: SAC 1187
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DR. HAFIZ IMTIAZ [HAI]

Professor (Adjunct)

Office: SAC 1052B

Office hours:

Thursday 11.20am – 13.20am

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Research Areas

- Artificial Intelligence & Robotics
- Signals and Image Processing

DR. ABUL KALAM AZAD

Professor (Adjunct)

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DR. MD. SAZZAD HOSSAIN [MDSH]

Professor (Adjunct)

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DR. SAKHAWAT HUSSAIN [SKH1]

Professor (Adjunct)

Ph.D.

Office: SAC 1140

Office hours:

RA: 8.30 am -9.30 am and 1.30pm-2.30pm

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Research Areas

- Semiconductor Device and Technology
- RF, Microwave and Communication Technology

Teaching

- CSE 331 Microprocessor Interfacing & Embedded System

DR. KAMRUDDIN NUR [KMN1]

- **Professor (Adjunct)**
- **Office:** SAC 1022
- **Email:** kamruddin.nur@northsouth.edu

DR. RAFIQUL ISLAM [RIS]

Professor (Adjunct)

PhD in Computer Science from University of New South Wales, Australia

BSc in Computer Science and Engineering from Rajshahi University of Engineering & Technology

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Google Scholar URL: https://scholar.google.com/citations?user=qm0QOXUAAAAJ&hl=en

Biography

Rafiqul Islam is a Professor in the Department of Computer Science and Engineering at Dhaka University of Engineering & Technology, Gazipur. He earned his BSc from Rajshahi University of Engineering and Technology and a PhD in Computer Science from the University of New South Wales, Australia, specializing in Medical Image Reconstruction. His research focuses on Medical Image Processing, Segmentation, Classification, and Reconstruction. He has published extensively in journals and conferences, contributing to advancements in medical imaging and deep learning applications.

Research Areas

- Signals and Image Processing

Research Interests

Medical Image Processing; Image Classification and Segmentation; Deep Learning for medical image and data science.

Teaching

- CSE 115 Programming Language I

DR. MD MAHMUDUR RAHMAN [MDRN]

- **Professor (Adjunct)**
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DR. MOHAMMAD ABDUR ROUF [MDAR]

- **Professor (Adjunct)**
- **Office:** SAC 1071
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DR. AHMEDUL KABIR [ALK1]

Associate Professor (Adjunct)

Ph.D. in Computer Science, WPI, Massachusetts, USA
M.S. & B.Sc. in CSE, University of Dhaka

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Research Areas

- Artificial Intelligence & Robotics
- Software Engineering

Research Interests

AI/ML, NLP, Computer Vision, Software Analytics

Teaching

- CSE 440 Artificial Intelligence

DR. AHSAN HABIB [AHBB]

- **Associate Professor (Adjunct)**
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-

DR. MAINUL HOSSAIN [MHO1]

Associate Professor (Adjunct)

Ph.D. in Electrical Engineering, University of Central Florida, USA

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Google Scholar URL: https://scholar.google.com/citations?user=RLP3qZsAAAAJ

Research Areas

- Semiconductor Device and Technology
- Modeling and Simulation
- VLSI Technology

Teaching

- EEE 111/ ETE 111 Analog Electronics-I
- EEE 111L/ ETE 111L Analog Electronics-I Lab

DR. MD SHOHIDUL ISLAM [MSDL]

Associate Professor (Adjunct)

PhD in Computer Engineering, George Mason University, Virginia, USA

Office: SAC 1019

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Research Areas

- Artificial Intelligence & Robotics

Research Interests

Cybersecurity, Trustworthy Machine Learning

Teaching

- CSE 115 Programming Language I

DR. MUJTABA AHSAN [MUN]

- **Associate Professor (Adjunct)**
- **Office:** SAC 910
- **Email:** mujtaba.ahsan@northsouth.edu
-

- **DR. RASHED MAZUMDER [RMZ1]**
- **Associate Professor (Adjunct)**
- **Office:** SAC 1188
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-

DR. TANZILUR RAHMAN

Associate Professor

(On Leave)

PhD : University of Tokyo, Japan
MSc. : University Of Sheffield, UK
BSc. : North South University, Bangladesh

Office: SAC 1024

Phone: +88 02 55668200 Ext – 6182

Email: tanzilur.rahman@northsouth.edu

Website: https://sites.google.com/site/tanzilctg

Biography

Tanzilur Rahman is currently employed as an Associate Professor in the Department of Electrical and Computer Science and Engineering at North South University. He served as an Assistant Professor for a year in the Department of Computer Science and Engineering of Ahsanullah University of Science and Technology (AUST). He received his BSc. Degree in Computer Engineering from North South University, Bangladesh, MSc. in Electronic Engineering from the University of Sheffield, UK and PhD in Bioengineering from the University of Tokyo. He is the principal investigator of TnR Lab established in 2017 to create the opportunity and environment for Biomedical Research at North South University. He is a former Fellow of MEXT (Ministry of Education, Culture, Sports, Science and Technology), JASSO (Japan Student Services Organization), ISRF (Indian Science & Research Fellowship), Visiting Researcher of iCONM (Innovation Centre of Nano Medicine), Tokyo and Biosensors Lab, IIT Madras.

Research Areas

- Embedded Systems and Internet of Things (IoT)
- Modeling and Simulation
- Semiconductor Device and Technology
- Signals and Image Processing

Research Interests

1. Portable analytical device for disease diagnosis
2. Biomedical Signal Processing
3. Biomedical Device Design
4. Electrochemical sensors

Teaching

- CSE 231 Digital Logic design
- CSE 231L Digital Logic design Lab
- CSE 332 Computer Organization and Architecture
- CSE 331 Microprocessor Interfacing & Embedded System
- CSE 331L Microprocessor Interfacing & Embedded System Lab
- CSE499A/EEE499A/ETE499A – Senior Design I
- CSE499B/EEE499B/ETE499B – Senior Design II
- CSE 496 Special Topics

Research Projects & Grants

AWARDS:

- Indian Science & Research Fellowship (ISRF) 2019
- Japan Student Services Organization (JASSO) Research Fellowship 2017
- Japanese Government (Monbukagakusho) Scholarship, 2012 for studying a PhD
- Secured 2nd place in Japanese Government Scholarship Examination 2012
- Selected as British Council sponsored delegate by British Council, Bangladesh for attending UK Alumni Regional Event, Dubai, 2012
- *Junior Government* Scholarship 1997
- *Japan "PARIBAR"* Scholarship 1996: A Japanese organizational scholarship awarded to the selected Bangladeshi students.

Professional Activity

2016 – Present Assistant Professor Department of ECE, North South University, Dhaka

2015- 2016 Assistant Professor Department of CSE, Ahsanullah University of Science and Technology

2010- 2015 Lecturer (on study leave since 2012) Department of CSE, Premier University, Chittagong

POSITION HELD

Program Coordinator, CSE (2018) Department of ECE, North South University, Dhaka

Lab Coordinator (2017-2018) Department of ECE, North South University, Dhaka

Visiting Researcher Ichiki Lab, iCONM, Tokyo

Associate Editor in The International Journal of Technology, Knowledge and Society, Vol.6, 7 2010.

Representative of CSE Department, Lab Equipments Purchase Committee – 2011, Premier University, Chittagong

Member, Syllabus Moderation Committee – 2011-2012, Premier University, Chittagong

Moderator, Premier University Debating Club (2011-2012), Premier University,Chittagong

Coach, Premier University Football Team (2012), Premier University, Chittagong

Coordinating Member Math Olympiad 2011- Chittagong Region, organized by Bangladesh Academy of Science

MEMBERSHIP

- The Japan Society of Applied Physics Membership No: 0085913
- The Materials Research Society Japan Membership No: 4717
- IEEE Membership No: 80740755.
- Member of IEEE Communication Society
- Sheffield Alumni Membership No: 162117
- IAENG (International Association of Engineers) Membership No: 105664.

MS. RUMMANA RAHMAN

Senior Lecturer & On Leave

MS in Electrical and Computer Engineering , Rutgers, The State University of New Jersey, USA

BS in Applied Physics Electronics and Communication Engineering, University of Dhaka, Dhaka, Bangladesh

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M 01 pm – 03 pm

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Research Areas

- Modeling and Simulation
- Power Systems and Renewable Energy
- Semiconductor Device and Technology

Research Interests

Nano materials and opto-electronics, Thin film solar cells, Optical computations, Renewable energy

Teaching

- EEE311/ ETE311 Analog Electronics II
- EEE241/ETE241 Electrical Circuits II
- EEE 211 Digital Logic Design
- EEE 211L Digital Logic Design Lab
- EEE241L/ETE241L Electrical Circuits II Lab

ISHTIAQUE HOSSAIN

Senior Lecturer & On Leave

MS from Western University, Canada
BS from University of Dhaka

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Biography

Ishtiaque Hossain completed his Bachelorâ€™s degree in Computer Science and Engineering at the University of Dhaka, Bangladesh. He received Masterâ€™s degree in Computer Science from the Western University, Canada. After graduating, he joined the Department of Electrical and Computer Engineering, North South University, Bangladesh as Lecturer. His research interest encompasses Computer Vision, Medical Imaging, Image Compression and Image Quality Analysis. He is also involved in community services as reviewer for Pattern Recognition, Elsevier.

Research Areas

- Artificial Intelligence & Robotics
- Signals and Image Processing

Research Interests

- Computer Vision
- Medical Imaging
- Image Compression
- Image Quality Analysis

Teaching

- CSE 115 Programming Language I
- CSE 115L Programming Language I Lab
- CSE 225 Data Structures and Algorithms
- CSE 225L Data Structures and Algorithms Lab
- CSE 373 Design and Analysis of Algorithms
- CSE 467 Digital Image Processing

Selected Publications

Journals

- I. Hossain, A. Roberts-South, M. Jog, M. R. El-Sakka, **"Semi-automatic Assessment of Hyoid Bone Motion in Digital Videofluoroscopic Images,"** *Computer Methods in Biomechanics and Biomedical Engineering: Imaging and Visualization*, 2014

Conference Papers

- S. M. Sarwar, I. Hossain, **"A Novel Reduced Reference Image Quality Analysis Metric for JPEG Compressed Images Based on Image Segmentation,"** *International Conference on Informatics, Electronics and Vision (ICIEV)*, 2013
- I. Hossain, A. Roberts-South, M. Jog, M. R. El-Sakka, **"Computer Assisted Quantification of Hyoid Bone Motion in Fluoroscopic Videos,"** *International Conference on Computer Vision Theory and Applications (VISAPP)*, 2013
- I. Hossain, M. El-Sakka, **"Prediction with Partial Match Using Two-dimensional Approximate Contexts,"** *Picture Coding Symposium (PCS)*, 2012

MR. RASHED SHELIM

Senior Lecturer & On Leave

MS in Telecommunication Engineering, RWTH Aachen University, Germany

BS in Electronics and Telecommunication Engineering, North South University, Dhaka, Bangladesh

Office hours:

ST 10:20 AM – 11:20 AM,

MW 1:00 PM – 2:40 PM,

Email: rashed.shelim@northsouth.edu

Research Areas

- Broadband Access and Communication Technologies
- Mobile, Wireless and Web Applications Development
- RF, Microwave and Communication Technology

Research Interests

- Millimeter-wave
- Small cell and Massive MIMO
- Relay Network
- Cognitive Radio
- Ultra Wide Band Communication Systems
- Channel Coding
- MIMO-OFDM

Teaching

- CSE 115 Programming Language I
- CSE 115L Programming Language I Lab
- ETE 424 Mobile and Wireless Communication System
- ETE 424L Mobile and Wireless Communication System Lab
- EEE 331 Data Communications & Networks

Selected Publications

Journals

- R. Shelim, M. A. Matin and A.U. Alam, **"Performance Analysis of High-Rate Full-Diversity Space Time Frequency/Space Frequency Codes for Multiuser MIMO-OFDM,"** *WSEAS Transactions on Communications, ISSN: 1109-2742, vol. 13, no.2,pp. 51-61*, 2014

- R. Shelim, M. A. Matin and A.U. Alam, **"A Systematic Design of High-Rate Full-Diversity Space-Frequency Codes for Multiuser MIMO-OFDM System,"** *WSEAS Transactions on Communications, ISSN: 1109-2742, vol. 12, no.4,* , 2013
- R S Topu, A Alam, M A Matin, **"High-Rate Full-Diversity Space-Time-Frequency Code for Multiuser MIMO-OFDM Systems over Frequency Selective Multiple Access Channels,"** *Journal of Convergence Information Technology (JCIT), South Korea,vol.6,no.8, pp. 8-22, (Scopus Indexed)*, 2011
- T Farah, R Shelim, M Zaman, MM Hassan, D Alam, **"Study of a Privilege Escalation Vulnerability in UNIX like system: Race Condition,"** *Journal of Systemics, Cybernetics and Informatics, JSCI (scopus indexed)*, 2018

Conference Papers

- R S Topu, A Alam and M A Matin, **"High-rate full-diversity multiuser space- frequency codes,"** *ICCIT 2010 Proceedings, Nov. 30-Dec.2, Korea, pp.411-416.*, 2010
- Farah, T., Shelim, R., Zaman, M., Hassan, M. M., & Alam, D, **"Study of race condition: A privilege escalation vulnerability,"** *WMSCI 2017 – 21st World Multi- Conference on Systemics, Cybernetics and Informatics (Scopus Indexed)*, 2017

Professional Activity

Research Assistant

Organization : P3 Communications

Department : Network Optimization (3G,LTE)

From : April 23, 2013

To : March 31, 2015

Core Network Engineer, Packet Switching

Organization : Huawei Technologies (Bangladesh) LTD

Department : Network Integration Service Department (PS-Core)

From : November 3, 2011

To : June 30, 2012

MS. TAMANNA MOTAHAR

Senior Lecturer & On Leave

Ph.D in Computer Science (Ongoing), University of Utah, USA

M. Eng. , University Of Alberta, Canada

M.Sc. in Electronics and Telecommunication, North South University

B. Sc. in Computer Engineering, American International University , Bangladesh (AIUB)

HSC & SSC, Mymensingh Girls' Cadet College

Office hours:

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Research Areas

- Human Computer Interaction (HCI)
- Mobile, Wireless and Web Applications Development
- Embedded Systems and Internet of Things (IoT)
- Modeling and Simulation

Research Interests

Human-Computer Interaction (HCI), Personal Informatics, Computer Supported Cooperative Work (CSCW), Internet of Things (IOT)

Teaching

- CSE 115 Programming Language I
- CSE 115L Programming Language I Lab
- CSE 225 Data Structures and Algorithms
- CSE 225L Data Structures and Algorithms Lab
- CSE 299 Junior Design Course
- CSE 498/EEE 498/ETE 498 Internship/Co-op/Directed Research

Selected Publications

Conference Papers

- Nova Ahmed, Tamanna Motahar, Sharmin Kabir ,Munir Hasan, **"Supporting Missing Daughters,"** *HCI across Borders, (CHI 2018) /** Best Poster Award**/*, 2018
- Nova Ahmed , Tamanna Motahar, **"Enabling Undergraduate Female Students in Hands on Learning through Programming Contests,"** *The European Conference on Education (ECE2018)*, 2018
- Tamanna Motahar, Rummana Rahman , Rafiya Hossain, **"A Simulation study on Light Scattering Effect on Waterborne Bacteriophage Virus using Mie Analysis,"** *IEEE 17th International Conference on Bioinformatics and Bio engineering,(BIBE 2017)*, 2017

Professional Activity

Founding Faculty Advisor, NSU ACM-W Student Chapter

ADNAN FIROZE

Lecturer & On Leave

MS in Computer Science, Columbia University, NY, USA
MS in Journalism, Columbia University, NY, USA
BS in Computer Science and Engineering, North South University, Dhaka, Bangladesh

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STMW: 1 pm -2:30 pm

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Biography

I am a Core Faculty Member at North South University, Bangladesh and formerly a Teaching Fellow at the Computer Science Department in Columbia University in the City of New York. I completed my Dual M.S. in computer science and journalism in 2016 with distinction from Columbia. I graduated summa cum laude in B.S. in Computer Science from North South University, Dhaka, Bangladesh in 2012. After that I worked at Computer Vision and Cybernetics Group, Bangladesh (http://www.cvcrbd.org/researchers). My interdisciplinary research works are based on digital image processing, machine learning, fuzzy logic, neural networks and data mining. My previous research works have appeared in numerous prestigious conferences and journals, namely, IEEE's 2012 International Conference on Machine Learning and Cybernetics (ICMLC), ACM's 13th International Conference on Enterprise Information Systems (ICEIS), International Journal of Healthcare Information Systems and Informatics (IJHISI), to mention a few. In 2015, I co-authored a book chapter

on hospital surveillance data analysis in Springer's 'Intelligent Information and Database Systems'. The story of post-2015 can be found in my publication and funding list below my bio.

My present research is based on real time triangulation of mass calamities using NASA's satellite imagery and also perception of visual data by artificial intelligence. A more ambitious research I have undertaken is detecting and classifying violent action in surveillance and cell phone videos.

I was also the recipient of the Genius Hunt Competition held by ACM in 2011 for my work in Bengali speech recognition.

On a different note, I am using DataCamp for independent learners for my Junior Design class in Summer 2017. It is an excellent platform to assign online courses on many CS areas. I highly recommend you check it out if you are a teacher (or a student). Harvard and Princeton are already on board in case you were wondering. They provide their premium content to universities and yours truly availed it and have been getting very good feedback from students.

The easy going happy-go-lucky faculty member (me!) invites your emails and presence at his office hours if you want to talk about research, computer science, political science and of course – Star Wars.

Research Areas

- Signals and Image Processing
- Artificial Intelligence & Robotics
- Database and Information Systems
- Modeling and Simulation

Research Interests

- Digital Image Processing
- Computer Vision
- Machine Learning
- Visual Data Mining
- Streaming Data
- Fuzzy Logic and Fuzzy Systems
- Artificial Neural Networks and Deep Learning
- Computational Journalism
- Intelligent User Interfaces

Teaching

- CSE 173 Discrete Mathematics
- CSE 215 Programming Language II
- CSE 311 Database Systems

- CSE 311L Database Systems Lab
- CSE 445 Machine Learning
- CSE 465 Pattern Recognition and Neural Network
- CSE 573 Theory of Fuzzy Systems
- EEE 521 Neural and Fuzzy Systems
- EEE 565 Pattern Recognition
- CSE 467 Digital Image Processing
- EEE 660 Computer Vision Systems

Selected Publications

Journals

- Adnan Firoze, Tousif Osman, Shahreen Shahjahan Psyche, Tonmoay Deb, Rashedur M Rahman, **"A synthetic approach to estimate cognitive aesthetic of framed images and improvements taking human's psychology into account,"** *Journal of Information and Telecommunication – Taylor & Francis. V(4,3)*, 2018
- Adnan Firoze, Tonmoay Deb, Rashedur M Rahman, **"Deep Learning and Data Balancing Approaches in Mining Hospital Surveillance Data,"** *Handbook of Research on Emerging Perspectives on Healthcare Information Systems and Informatics*, 2018
- Adnan Firoze, Rashedur M Rahman, **"Critical condition classification of patients from ICCDR, B hospital surveillance data,"** *International Journal of Advanced Intelligence Paradigms*, 2017
- Adnan Firoze, M. Shamsul Arifin, Rashedur M. Rahman, **"Bangla User Adaptive Word Speech Recognition – Approaches and Comparisons,"** *International Journal of Fuzzy System Applications (IJFSA)*, 2013
- Adnan Firoze, Rashedur M. Rahman, **"Mining ICDDR, B Hospital Surveillance Data and Exhibiting Strategies for Balancing Large Unbalanced Datasets,"** *International Journal of Healthcare Information Systems and Informatics (IJHISI)*, 2015

Conference Papers

- Adnan Firoze, Aziz Arman, Tonmoay Deb, **"Machine Cognition of Violence in Videos using Novel Outlier-Resistant VLAD,"** *The 17th IEEE International Conference on Machine Learning and Applications (IEEE ICMLA'18)*, 2018
- Adnan Firoze, Tonmoay Deb, **"Face Recognition Time Reduction Based on Partitioned Faces without Compromising Accuracy and a Review of state-of-the-art Face Recognition Approaches,"** *Proceedings of the 2018 International Conference on Image and Graphics Processing (ACM)*, 2018
- Shamsul Arifin, Adnan Firoze, M. Ashraful Amin, Hong Yan, **"Dermatological Disease Diagnosis using Color-skin Images,"** *International Conference on Machine Learning and Cybernetics (ICMLC)*, 2012
- Adnan Firoze, M. Shamsul Arifin, Ryana Quadir, Rashedur M. Rahman, **"BANGLA Isolated Word Speech Recognition,"** *International Conference on Enterprise Information Systems (ICEIS)* , 2011

Book Chapters

- Adnan Firoze, Shahreen Shahjahan Psyche, Tonmoay Deb, Tousif Osman, Rashedur M Rahman, **"Differential Color Harmony: A robust approach for extracting Harmonic Color features and perceive aesthetics in a large dataset,"** *International Conference on Big Data and Cloud Computing (ICBDCC'18). Springer.*, 2018
- Adnan Firoze, Tousif Osman, Shahreen Shahjahan Psyche, Rashedur M Rahman, **"Scoring Photographic Rule of Thirds in a Large MIRFLICKR Dataset: A Showdown Between Machine Perception and Human Perception of Image Aesthetics,"** *Springer Lecture Notes in Computer Science book series (LNCS, volume 10751)*, 2018
- Adnan Firoze, Rashedur M Rahman, **"Mining ICDDR, B Hospital Surveillance Data Using Locally Linear Embedding Based SMOTE Algorithm and Multilayer Perceptron,"** *Lecture Notes in Computer Science (Springer)*, 2015

Research Projects & Grants

- University Research grant for the fiscal year 2016-17, North South University for the research "Can Artificial Intelligence evaluate Beauty?"
- Using NASA Satellite Imagery to Triangulate Fires and Other Calamities in Real Time (supported by The Tow Center, Columbia Journalism School)
- Research grant from Columbia Journalism School to predict and analyze US Presidential Election candidates from multiple news outlets
- Natural Language Processing (NLP) system to recognize real-time bengali utterances (appeared in a conference, a journal and was runner-up at ACM Genius Hunt)
- Dermatological Disease Diagnosis using Color Skin Images
- BANGLA Isolated Word Speech Recognition
- TravelBD – a web based application integrating Google Maps API to promote tourism in Bangladesh
- Spoti.SPOT – a novel Spotify search engine
- Real time triangulation of mass calamities using NASA's satellite imagery

Professional Activity

- Reviewer at Elsevier International and Springer
- Contributing Author at The Huffington Post (Profile)
- Long-form Author at the award-winning New York based magazine – The Big Roundtable (profile)
- Geffen Scholar in Magazine Writing
- Best Position Paper – winner at Dhaka+20 Model United Nations

MR. ABDULLAH-AL- MAMUN

Lecturer & On Leave

PhD in Computer Science (ongoing), Purdue University, West Lafayette, Indiana, USA
MS in Computer Science, Memorial University of Newfoundland (MUN), Canada
BS in Computer Science, Islamic University of Technology (IUT), Bangladesh

Email: abdullah.mamun03@northsouth.edu

Research Areas

- Database and Information Systems
- Artificial Intelligence & Robotics

Research Interests

Database Systems (DB) + Machine Learning (ML)
ML for DB: Learned Multi-dimensional Indexes
DB for ML: Extending DB to support efficient ML workloads

Teaching

- CSE 173 Discrete Mathematics
- CSE 225 Data Structures and Algorithms
- CSE 311 Database Systems
- CSE 327 Software Engineering
- CSE 473 Theory of Computation

Selected Publications

Conference Papers

- Sheikh Muhammad Sarwar, Abdullah-Al-Mamun, **"Next Word Prediction for Phonetic Typing by Grouping Language Models,"** *In Proceedings of 2nd International Conference on Information Management (ICIM), p. 73-76, IEEE*, 2016
- Abdullah-Al-Mamun, Antonina Kolokolova, Dan Brake, **"Detecting Contextual Anomalies from Time-Changing Sensor Data Streams,"** *In Proceedings of the Doctoral Consortium of 25th European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (ECML PKDD), p.13*, 2015
- Sheikh Muhammad, Md Anowarul Abedin, A. H. M. Ullah, Abdullah-Al-Mamun, **"Personalized Query Expansion for Web Search Using Social Keywords,"** *In Proceedings of 15th International Conference on Information Integration and Web-based Applications & Services (iiWAS), p. 610. ACM*, 2013
- Abdullah-Al-Mamun, Md. Anowarul Abedin, Md. Al Arman, Prof. Dr. M.A. Mottalib, Mohammad Rezwanul Huq, **"Mining Data Stream from a Higher Level of Abstraction: A Class Window Approach,"** *In Proceedings of the International Conference on Informatics Engineering & Information Science (ICIEIS), p.461. Springer*, 2011

Others

- Umme Hafsa Billah, Sheikh Muhammad Sarwar, Abdullah-Al-Mamun, **"Personalized Language Models for Computer-mediated Communication,"** *In Proceedings of 3rd International Workshop on Concept Discovery in Unstructured Data (workshop co-located with the 13th International Conference on Concept Lattices and Their Applications), p. 2-12*, 2016

MR. RISHAD ARFIN

Lecturer & On Leave

M.A.Sc. in Electrical & Computer Engineering (ECE), McMaster University, Canada
B.Sc. in Electric & Electronic Engineering (EEE), Islamic University of Technology (IUT), Bangladesh

Office hours:

Sundays, Mondays, Tuesdays, & Wednesdays (4.10 pm – 5.50 pm)
Saturdays, Thursdays (2.40 pm – 5.50 pm)

Email: rishad.arfin@northsouth.edu

Research Areas

- Modeling and Simulation
- RF, Microwave and Communication Technology
- Semiconductor Device and Technology
- Signals and Image Processing

Research Interests

- Computational Electromagnetics
- Energy Harvesting Devices i.e. Optical antennas at THz or IR regime
- Photonics, Optical & THz Devices
- Terahertz Rectification, MIM Diodes

Teaching

- CSE 231 Digital Logic design
- CSE 231L Digital Logic design Lab
- CSE 331 Microprocessor Interfacing & Embedded System
- CSE 331L Microprocessor Interfacing & Embedded System Lab
- CSE 173 Discrete Mathematics

Research Projects & Grants

Ultrasound Imaging i.e. Elastography for Cancer detection (2011-2013)
Energy Harvesting at THz and IR Regime using Optical antennas (2015-2018)
Photonics & Optical Devices (2018-2019)
Terahertz Rectification, MIM Diodes (2020 – Present)

MR. ZUNAYEED BIN ZAHIR

Lecturer & On Leave

M.S. in Electrical Engineering, The State University of New York at Buffalo, New York, USA

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Research Areas

- RF, Microwave and Communication Technology
- Data Networking and Information Security
- Broadband Access and Communication Technologies

Teaching

- EEE 321 Introduction to Communications Systems
- EEE 141 Electrical Circuits I
- CSE 482 Internet and Web Technology

AKM BAHALUL HAQUE

Lecturer & On Leave

D.Sc. Software Engineering (Ongoing), LUT University, Finland

M.Sc. Information Technology, Kiel University of Applied Sciences, Germany
B.Sc. in Computer Science & Telecommunication Engineering,NSTU

Email: bahalul.haque@northsouth.edu

Website: https://sites.google.com/view/apollosec/home

Biography

Mr. Bahalul Haque has achieved his Bachelor of Science in Computer Science and Telecommunication Engineering from NSTU and M.Sc. in Information Technology from Fachhochschule Kiel, Germany. He received study grant during his Master thesis.

His research area comprises of AI technologies, especially XAI, Social Computing, and Blockchain. He is open for research and project collaboration and also open for suggestion.

Research Areas

- Data Networking and Information Security
- Cloud Computing and Distributed Systems
- Mobile, Wireless and Web Applications Development
- Software Engineering

Research Interests

- AI technologies, especially XAI
- Blockchain Technologies
- Social Computing
- Data Privacy & Protection, Cyber Security
- Cloud Computing & Security
- Big Data

Teaching

- CSE 215 Programming Language II
- CSE 215L Programming Language II Lab
- CSE 323 Operating Systems Design
- CSE 327 Software Engineering
- CSE 299 Junior Design Course
- CSE499A/EEE499A/ETE499A – Senior Design I
- CSE499B/EEE499B/ETE499B – Senior Design II

Selected Publications

Journals

- AKM Bahalul Haque, Mahbubur Rahman, **"Blockchain Technology: Methodology, Application and Security Issues,"** *International Journal of Computer Science and Network Security, (WoS; ESCI Indexed)*, 2020
- Tahmid Hasan Pranto, Abdulla All Noman, Atik Mahmud, AKM Bahalul Haque , **"Blockchain and smart contract for IoT enabled smart agriculture,"** *PeerJ Computer Science, USA*, 2021
- AKM Bahalul Haque, Sonia Tasmin, **"Security Threats and Research Challenges of IoT – A Review,"** *Journal of Engineering Advancements*, 2020

- A K M Bahalul Haque, Md Rifat Hasan, Md. Oahiduzzaman Mondol Zihad , **"SmartOil: Blockchain and Smart Contract-based Oil Supply Chain Management,"** *IET Blockchain, The Institution of Engineering and Technology, UK*, 2021

Conference Papers

- Mohammad Fahim Hossain, Sudipta Barman, AKM Bahalul Haque, **"Augmented Reality for Education; AR Children's Book,"** *IEEE TENCON 2019*, 2019
- Ekra Bin Syed Mojib, AKM Bahalul Haque, Md. Nafis Raihan, Mahbubur Rahman , Fahad Bin Alam, **"A Novel Approach for Border Security; Surveillance Drone with Live Intrusion Monitoring,"** *2019 IEEE International Conference on Robotics, Automation, Artificial-intelligence and Internet-of-Things (RAAICON)*, 2019
- Shayekh Mohiuddin Ahmed Navid,Shamima Haque Priya , Nabiul Hoque Khandakar,Zannatul Ferdous , AKM Bahalul Haque, **"Signature Verification Using Convolutional Neural Network,"** *2019 IEEE International Conference on Robotics, Automation, Artificial-intelligence and Internet-of-Things (RAAICON)*, 2019
- A K M Bahalul Haque, Shawan Shurid, Afsana Tasnim, Md. Shadman Sadique, Abu Sayem Mohammad Asaduzzaman, **"A Novel Design of Gesture and Voice Controlled Solar-Powered Smart Wheel Chair with Obstacle Detection,"** *IEEE International Conference on Informatics, IoT, and Enabling Technologies (ICIoT'20)*, 2020
- Rezowana Akter, Jahid Khandaker, Shakil Ahmed, Muhtasim Munem Mugdho, A K M Bahalul Haque, **"RFID Based Smart Transportation System With Android Application,"** *International Conference on Innovative Mechanisms for Industry Applications (ICIMIA 2020), IEEE & Scopus Indexed*, 2020
- AKM Bahalul Haque; Ayman Muniat; Parisha Rafiq Ullah; Shimin Mushsharat, **"An Automated Approach towards Smart Healthcare with Blockchain and Smart Contracts,"** *2021 International Conference on Computing, Communication, and Intelligent Systems (ICCCIS)*, 2021
- Shahriar Rahman1, Shazzadur Rahman1 and A K M Bahalul Haque1, **"Prediction of Solar Radiation Using Artificial Neural Network,"** *Journal of Physics: Conference Series*, 2021
- Sadman Chowdhury Siam; Abrar Faisal; Niazi Mahrab; AKM Bahalul Haque; Md. Naimul Islam Suvon, **"Automated Student Review System with Computer Vision and Convolutional Neural Network,"** *2021 International Conference on Computing, Communication, and Intelligent Systems (ICCCIS)*, 2021
- Mohammad Fahim Hossain; Sudipta Barman; Niloy Biswas; A K M Bahalul Haque, **"Augmented Reality in Medical Education: AR Bones,"** *2021 International Conference on Computing, Communication, and Intelligent Systems (ICCCIS)*, 2021
- Mohammad Fahim , Niloy Biswas, Sudipta Barman, A K M Bahalul Haque, **"Professional Information Visualization Using Augmented Reality; AR Visiting Card,"** *2020 2nd International Conference on Sustainable Technologies for Industry 4.0 (STI)*, 2021

Book Chapters

- AKM Bahalul Haque, Bharat Bhushan, **"Emergence of Blockchain Technology: A Reliable and Secure Solution for IoT Systems,"** *Blockchain Technology for Data Privacy Management ; Edition: 1. Chapter: 8. Publisher: CRC Press, Taylor & Francis, USA*, 2021

- AKM Bahalul Haque, Bharat Bhushan, **"Security Attacks and Countermeasures in Wireless Sensor Network,"** *Integration of WSNs into Internet of Things: A Security Perspective. Edition: 1st. Chapter: 2. Publisher: CRC Press, Taylor & Francis Group, USA*, 2021

Professional Activity

Network Manager (Intern) – Rx71 Ltd.
Network Manager (Full-Time) – Rx71 Ltd.

SHAIKH SHAWON AREFIN SHIMON

Lecturer & On Leave

Ph. D, Computer Science, University of Waterloo (Ongoing)
Waterloo, ON, Canada (Sep 2021 – Present)

M.S, Computer Science, Colorado State University (CSU)
Fort Collins, CO, USA

B.Sc, Computer Science And Engineering (CSE), Bangladesh University of Engineering & Technology (BUET)
Dhaka, Bangladesh

Office hours:

On study leave (Fall 2021 – Present).

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Website: http://www.shawonarefin.com

Google Scholar URL: https://scholar.google.ca/citations?user=JHiIjlcAAAAJ&hl=en

Scopus Profile: https://www.scopus.com/authid/detail.uri?authorId=57147941500

Biography

I joined ECE, NSU as a full-time faculty in April 2018. Before joining NSU ranks, I was a software engineer in Mobile devices and Electronic Design Automation industry across US and Asia for 6+ years. I obtained my B.Sc in Computer Science and Engineering (CSE) from Bangladesh University of Engineering and Technolgy (BUET); and went on to obtain an MS in Computer Science from Colorado State University (CSU), Fort Collins, Colorado, USA. During my time at CSU Fort Collins, I worked as a

research assistant in Mobile Human-Computer Interaction area at Ruiz HCI Lab (Presently relocated to University of Florida Gainsville, USA) under Dr. Jaime Ruiz. Besides working as a full-time faculty at NSU ECE – I also worked as a Co-ordinator for School of Engineering and Physical Sciences (SEPS) at NSU Career and Placement Center (CPC), leading industry-academia collaboration for School of Engineering from 2018 to 2020.

Currently, I am a doctoral candidate in School of Computer Science (SCS), University of Waterloo, ON, Canada and on an academic leave from North South University.
My current research area focuses on exploring interaction modalities for gesture-sensing earable (i.e., ear-mounted wearable) devices. During my doctoral research, I collaborated with Huawei Human-Machine Interaction (HMI) lab in Markham, ON, Canada.
More info about my current research area and research group in University of Waterloo can be found here.

I am well experienced in Agile SCRUM/XP/Kanban, Incremental / RAD / V-model Software Development Life Cycle (SDLC), Software Version Controlling, Software Project Management / Bug tracking / Quality Assurance process, and well-acquainted with Continuous Integration / Deployment (CI/CD) & build automation process. As a software engineer – I received best employee award at SRBD for Software Development work on Samsung Rex 70 Middle East Asia (MEA) release in 2013.

If you are considering approaching me for a Letter of Recommendation (LOR) for graduate school or professional reference, please read this guideline.

I can be reached via the following emails outside of NSU:

- skshimon[at]alumni[dot]colostate[dot]edu
- ssarefin[at]uwaterloo[dot]ca

Research Areas

- Human Computer Interaction (HCI)
- Software Engineering
- Mobile, Wireless and Web Applications Development

Research Interests

Data Science & Analytics	:	Data Visualization & Interaction, Data Pipeline
Human-Computer Interaction (HCI)	:	Augmented Reality (AR), Virtual Reality (VR), Large Screen Surface Displays (Tabletops, Public Display, Automotive displays), Mobile & Wearable Devices & Interaction.
Computer Supported Cooperative Work (CSCW)	:	Collaborative Educational Technology

Societal Computing	:	Computing Technology & Policy, Computing for Social Good

If you are interested in working with me, send me an email
at <shaikh[dot]shimon[at]northsouth[dot]edu> .
Please read the guideline for communicating with me as a current NSU student.

Note: A great way to understand if a faculty is a good fit for working with on research is to do a course under him.

If you already have done a course under him/her, you are well aware of the faculty's supervision style and the faculty is well aware of your potential as a hard worker.

Teaching

- CSE 498/EEE 498/ETE 498 Internship/Co-op/Directed Research
- CSE 486 Mobile and Wireless Application Development
- CSE 427 Software Quality Assurances & Testing
- CSE 373 Design and Analysis of Algorithms
- CSE 332 Computer Organization and Architecture
- CSE 299 Junior Design Course
- CSE 225 Data Structures and Algorithms
- CSE 225L Data Structures and Algorithms Lab
- CSE 215 Programming Language II
- CSE 215L Programming Language II Lab
- CSE499A/EEE499A/ETE499A – Senior Design I
- CSE499B/EEE499B/ETE499B – Senior Design II

Selected Publications

Journals

- Shaikh Shawon Arefin Shimon, Ali Neshati, Junwei Sun, Qiang Xu, Jian Zhao, **"Exploring Uni-manual Around Ear Off-Device Gestures for Earables,"** *Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies, Volume 8, Issue 1*, 2024

Conference Papers

- Shaikh Shawon Arefin Shimon , Courtney Lutton , Zichun Xu ,Sarah Morrison-Smith , Christina Boucher , Jaime Ruiz, **"Exploring Non-touchscreen gestures for smartwatches,"** *CHI '16* , 2016

- Shaikh Shawon Arefin Shimon , Sarah Morrison-Smith , Noah John , Ghazal Fahimi , Jaime Ruiz, **"Exploring User-Defined Back-Of-Device Gestures for Mobile Devices,"** *MobileHCI'15*, 2015
- Mohammad Rayed, Tawfique Elahi, SHAIKH SHAWON AREFIN SHIMON, Nova Ahmed, **"MFS Design in Appstore-enabled Smart Featurephones for Low-literate, Marginalized Communities,"** *CHI2023*, 2023

Professional Activity

Career coordinator, School of Engineering & Physical Science (SEPS)
Career & Placement Center (CPC), North South University
(June 2018- June 2020)

MR. FAHIMUL HAQUE

Lecturer & On Leave

Master of Science (MSc), Electrical Engineering, The University of Calgary, Canada, 2016-2018

Bachelor of Science (BSc), Electrical and Electronic Engineering, BRAC University, Dhaka, Bangladesh 2011-2014

Email: fahimul.haque02@northsouth.edu

Research Areas

- Artificial Intelligence & Robotics
- Signals and Image Processing

Research Interests

Machine/Deep Learning, Sensor Fusion, SLAM, Robotics and Intelligent Systems

Teaching

- EEE 111/ ETE 111 Analog Electronics-I
- EEE 111L/ ETE 111L Analog Electronics-I Lab
- EEE 211 Digital Logic Design
- EEE 211L Digital Logic Design Lab
- CSE 231 Digital Logic design
- CSE 231L Digital Logic design Lab
- CSE499A/EEE499A/ETE499A – Senior Design I
- CSE499B/EEE499B/ETE499B – Senior Design II

Selected Publications

Journals

- F. Haque, V. Dehghanian, A. O. Fapojuwo and J. Nielsen, **"A Sensor Fusion-Based Framework for Floor Localization,"** *IEEE Sensors Journal*, 2019
- F. Haque, A. Azad, **"Luminous measurement of LED lights in cost effective way using cylindrical method,"** *Measurement, ELSEVIER*, 2017

Conference Papers

- F. Haque, V. Dehghanian and A. O. Fapojuwo, **"Sensor fusion for floor detection,"** *2017 8th IEEE Annual Information Technology, Electronics and Mobile Communication Conference (IEMCON)*, 2017
- F. Haque, S. J. Chowdhury, S. S. Ahsan, Z. Rahman and M. Z. Ali, **"Fiber to the Antenna: Solution in integrated optical and wireless networks,"** *The 8th International Conference on Software, Knowledge, Information Management and Applications (SKIMA 2014)*, 2014

Professional Activity

Branch Counselor, IEEE North South University Student Branch

AHNAF RASHIK HASSAN

Lecturer & On Leave

MASc in Biomedical Engineering, University of Toronto (2018)

BSc in Electrical and Electronic Engineering, Bangladesh University of Engineering and Technology (2015)

Office hours:

Tuesday: 9.30 AM – 12.30 PM, 2 PM – 3.30 PM

Thursday and Saturday: 11.10 AM – 12.40 PM

Email: ahnaf.hassan@northsouth.edu

Website: https://scholar.google.com/citations?user=HBTGKRkAAAAJ&hl=en

Research Areas

- Signals and Image Processing

Research Interests

Neural mechanisms of spatial navigation and memory processing in the entorhinal-hippocampal system. Biomedical signal processing. Machine learning

Teaching

- EEE 141 Electrical Circuits I
- EEE 141L Electrical Circuits I Lab
- EEE 211 Digital Logic Design
- EEE 211L Digital Logic Design Lab
- EEE 221 Signals and Systems

MS. MEEM TASFIA ZAMAN [MEZ]

Lecturer & On Leave

MSc. – Electrical Engineering, Texas A&M University-Kingsville (TAMUK), TX, USA, 2019
BSc. – Electrical and Electronic Engineering, North South University (NSU), Dhaka, Bangladesh, 2015

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Office: SAC 11105

Phone: +88 02 55668200 Ext – 6189

Email: zaman.tasfia@northsouth.edu

Research Areas

- Power Systems and Renewable Energy
- Semiconductor Device and Technology
- Artificial Intelligence & Robotics

Research Interests

Power & Energy Systems

Power Electronics

Renewable Energy Integration

Artificial Intelligence

Teaching

- CSE 115 Programming Language I
- CSE 115L Programming Language I Lab
- CSE 299 Junior Design Course
- EEE 111/ ETE 111 Analog Electronics-I
- EEE 111L/ ETE 111L Analog Electronics-I Lab
- EEE 211 Digital Logic Design
- EEE 211L Digital Logic Design Lab
- EEE 299 Junior Design Project I
- EEE 362 Power Systems
- EEE 362L Power Systems Lab
- CSE 498/EEE 498/ETE 498 Internship/Co-op/Directed Research

MR. AHMED FAHMIN

Lecturer & On Leave

Master of Information Technology (with Distinction), The University of Melbourne, Australia
B.Sc. in Computer Science and Engineering (CSE), Bangladesh University of Engineering and Technology, Bangladesh

Email: ahmed.fahmin@northsouth.edu

Research Areas

- Database and Information Systems
- Cloud Computing and Distributed Systems
- Artificial Intelligence & Robotics

Teaching

- CSE 225 Data Structures and Algorithms
- CSE 299 Junior Design Course
- CSE 311 Database Systems
- CSE 373 Design and Analysis of Algorithms
- CSE 498/EEE 498/ETE 498 Internship/Co-op/Directed Research

Selected Publications

Journals

- Ahmed Fahmin, Yuan-Cheng Lai, Md. Shohrab Hossain, Ying-Dar Lin, **"Performance Modeling and Comparison of NFV Integrated with SDN: Under or Aside?,"** *Journal of Network and Computer Applications (Elsevier), Vol. 113, pp.119-129.*, 2018
- Mohammad Nafis Ul Islam, Ahmed Fahmin, Md Shohrab Hossain, Mohammed Atiquzzaman, **"Denial-of-Service Attacks on Wireless Sensor Network and Defense Techniques,"** *Wireless Personal Communications*, 2021

Conference Papers

- Ahmed Fahmin, Yuan-Cheng Lai, Md Shohrab Hossain, Ying-Dar Lin, Dipon Saha, **"Performance modeling of sdn with nfv under or aside the controller,"** *2017 5th International Conference on Future Internet of Things and Cloud Workshops (FiCloudW)*, 2017
- Shafayat Bin Shabbir Mugdha, Sayeda Muntaha Ferdous, Ahmed Fahmin, **"Evaluating Machine Learning Algorithms For Bengali Fake News Detection,"** *2020 23rd International Conference on Computer and Information Technology (ICCIT)*, 2020
- Marian Binte Mohammed, Lubaba Salsabil, Sabrina Sultana Tanaaz, Mahir Shahriar, Ahmed Fahmin, **"An Extensive Analysis of the Effect of Social Distancing in Transmission of COVID-19 in Bangladesh by the Aid of a Modified SEIRD Model,"** *2020 2nd International Conference on Advanced Information and Communication Technology (ICAICT)*, 2020

MS. ASHFIA BINTE HABIB

Senior Lecturer & On Leave

MSc. from Wichita State University, Kansas, USA.
BSc from North South University, Dhaka, Bangladesh.

Office: SAC 1192

Office hours:

During Covid-19 My office hour are flexible. Email me with either of the following subjects:

[Seeking help] : If having problems with schedule, syllabus
[Covid Crisis] : If you or your family is in tough situation of Covid and you need some time to recover
[Exam issues] : Anything regarding exams, or problem you faced during exams. Remember- TOGETHER (I & my students) we can be a Good TEAM
[Need Office Hour] : If you have some questions on the topics we have studied in the class and

somehow need more clarification on the study subject. We will have a conversation through email's and will give you a link (google meet link) for discussions.

Please email from your NSU email address.

Phone: +88 02 55668200 Ext – 6194

Email: ashfia.habib@northsouth.edu

Website: https://scholar.google.com/citations?user=3Yf3BPUAAAAJ&hl=en

Research Areas

- Artificial Intelligence & Robotics
- Signals and Image Processing
- Modeling and Simulation

Teaching

- CSE 373 Design and Analysis of Algorithms
- CSE 231 Digital Logic design
- CSE 231L Digital Logic design Lab
- EEE 211 Digital Logic Design
- EEE 211L Digital Logic Design Lab
- CSE 115 Programming Language I
- CSE 115L Programming Language I Lab
- EEE 321 Introduction to Communications Systems
- EEE 321L Introduction to Communications Systems Lab

Research Projects & Grants

Recent Research Projects on:

* Machine Learning
* Artificial Intelligence
* Deep Learning
* Citizen Science

MR. TAREK IBNE MIZAN

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