Md. Saifur Rahman, Ph.D.
(Big Data, Data Science, and Machine Learning)

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GoogleScholar: https://scholar.google.com/citations?hl=en&user=cf3bfR0AAAAJ
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Current Position

University of Texas Health Science Center at Houston - January 2024 to present.
- Assistant Professor, School of Public Health, Department of Biostatistics and Data Science

Teaching and Research Experience

University of Texas Health Science Center at Houston - January 2024 to present.
- Assistant Professor, School of Public Health, Department of Biostatistics and Data Science

University of Minnesota (Crookston Campus) - January 2023 to December 2023.
- Assistant Professor, Department of Math, Science and Technology
- Lecturer, Department of Math, Science and Technology

University of North Dakota (UND) – January 2019 to December 2022
- Graduate Teaching Assistant and Lab Instructor in Python programming lab, School of Electrical Engineering and Computer Science (SEECS)
- Graduate Research Assistant, Department of Communication at UND
- Graduate Research Assistant Engineer, Institute of Energy Studies at UND

Noakhali Science & Technology University (NSTU) - March 2014 to December 2018
- Assistant Professor, Dept. of Information and Communication Engineering (March 2016 – March 2018)
- Lecturer, Dept. of Information and Communication Engineering (March 2014 – March 2016)

Feni University (FU) - August 2018 to November 2018
- Adjunct Faculty, Dept. of Computer Science and Engineering

University of Development Alternative (UODA) - September 2012 to March 2014
- Lecturer, Dept. of Computer Science and Engineering

Awards and Recognition
- Teaching Innovation Award for AY 2024-2025, School of Public Health, University of Texas Health Science Center at Houston.
- Editorial Board Member, American Journal of Neural Networks and Applications (AJNNA), (Feb 2022 to present)

Administrative Experience

- Facilitator and Executive Member, AI Training Program for UTHealth Houston Faculty, University of Texas Health Science Center at Houston
- CEPH Accreditation Committee Member, Department of Biostatistics and Data Science, University of Texas Health Science Center at Houston
- UTHealth Houston AI Task Force (Education Subcommittee), University of Texas Health Science Center at Houston
- UTHealth Houston AI Task Force (Technology and Implementation Subcommittee), University of Texas Health Science Center at Houston
- Executive Member, AI in Teaching and Learning, University of Texas Health Science Center at Houston
- Executive Member, Student Admission Committee, University of Texas Health Science Center at Houston
- Executive Member, Data Science Task Force, University of Texas Health Science Center at Houston
- Executive Member, Data Science Program Committee, University of Texas Health Science Center at Houston

- Executive Member, Teaching Quality and Efficiency, University of Texas Health Science Center at Houston
- Executive Member, Online Teaching/New Education Program Development, University of Texas Health Science Center at Houston
- Assistant Director of Cyber Center, Noakhali Science and Technology University
- Syllabus design and evaluation committee member, Noakhali Science and Technology University
- RFQ purchase committee member, Noakhali Science and Technology University
- Academic committee member, Noakhali Science and Technology University
- Examination committee member, Noakhali Science and Technology University
- Seminar library committee member, Noakhali Science and Technology University
- Examination committee member, University of Development Alternative
- Examination committee member (external), Jatiya Kobi Kazi Nazrul Islam University
- Examination committee member (external), Barisal University

Industry Experience

- Data Analyst Intern, Apex Clean Energy (June 2022 – August 2022)
- Internship, Energy & Environmental Research Center (EERC) (May 2020 – August 2020)
- Internship, GramenPhone Ltd. (Telenor) (January 2011 – March 2011)

Education

- Ph.D. in Computer Science, 2023(Big Data, Data Science, and Machine Learning), University of North Dakota, Grand Forks, North Dakota, United States
  - CGPA: 4.00 out of 4.00

- Master's in Computer Science (2022), University of North Dakota, Grand Forks, North Dakota, United States
  - CGPA: 4.00 out of 4.00
- Bachelors in Computer Science & Telecommunication Engineering (2011), Noakhali Science and Technology University, Noakhali, Bangladesh
  - CGPA: 3.73 out of 4.00 (2nd in merit position)

Professional Certification

- Learning Analytics Certificate, University of North Dakota, Grand Forks, North Dakota, United States
  - CGPA: 4.00 out of 4.00

Research Publication

- **Rahman Md. Saifur**, Reza H. Hybrid Deep Learning Approaches for Accurate Electricity Price Forecasting: A Day-Ahead US Energy Market Analysis with Renewable Energy. *Machine Learning and Knowledge Extraction*. 2025; 7(4):120. https://doi.org/10.3390/make7040120
- Hasan, Munjur; **Rahman, Md Saifur;** Islam, Sabrina; Ahmed, Tanvir; Rifat, Nafiz; Ahsan, Mostofa; Gomes, Rahul; and Chowdhury, Md.**;** "Vision Transformer-based Classification for Lung and Colon Cancer using Histopathology Images," 2023 International Conference on Machine Learning and Applications (ICMLA), Jacksonville, FL, USA, 2023, pp. 1300-1304, doi: 10.1109/ICMLA58977.2023.00196.
- **Rahman, Md. Saifur,** H. Reza and E. Kim, "A Hybrid Deep Neural Network Model to Forecast Day-Ahead Electricity Prices in the USA Energy Market," 2023 IEEE World AI IoT Congress (AIIoT), Seattle, WA, USA, 2023, pp. 0525-0534, doi: 10.1109/AIIoT58121.2023.10174342.
- **Rahman, Md. Saifur,** N. Rifat, M. Ahsan, S. Islam, M. Chowdhury and R. Gomes, "Deep Learning Application for Detection of Malaria," 2023 IEEE International Conference on Electro Information Technology (eIT), Romeoville, IL, USA, 2023, pp. 1-5, doi: 10.1109/eIT57321.2023.10187342.
- M. M. Chowdhury, N. Rifat, M. Ahsan, S. Latif, R. Gomes and **Rahman, Md. Saifur** "ChatGPT: A Threat Against the CIA Triad of Cyber Security," 2023 IEEE International Conference on Electro Information Technology (eIT), Romeoville, IL, USA, 2023, pp. 1-6, doi: 10.1109/eIT57321.2023.10187355.
- M. Chowdhury, N. Rifat, S. Latif, M. Ahsan, **Rahman, Md. Saifur** and R. Gomes, "ChatGPT: The Curious Case of Attack Vectors' Supply Chain Management Improvement," 2023 IEEE International Conference

on Electro Information Technology (eIT), Romeoville, IL, USA, 2023, pp. 499-504, doi: 10.1109/eIT57321.2023.10187385.

- **Rahman, Md Saifur**, and Hassan Reza. "A Systematic Review Towards Big Data Analytics in Social Media." *Big Data Mining and Analytics* 5.3 (2022): 228-244.
- **Rahman, Md Saifur**, and Hassan Reza. "Big data analytics in social media: A triple T (types, techniques, and taxonomy) study." *ITNG 2021 18th International Conference on Information Technology-New Generations*. Cham: Springer International Publishing, 2021.
- Alam, Md Mahbubul, and **Md Saifur Rahman**. "Research Article Data Analysis for Book Reading Preferences: Bangladesh Perspective." *Information Technology Journal* 20.1 (2021): 8-14.
- **Rahman, Md Saifur**, and Hassan Reza. "Systematic mapping study of non-functional requirements in big data system." *2020 IEEE International Conference on Electro Information Technology (EIT)*. IEEE, 2020.
- Ahammad, Ishtiaq & Khan, Dr. Md. Ashikur & **Rahman, Md. Saifur** & Khan, Tanvir & Nath, Nishu. (2020). Giga-Scale Integration System-On-A-Chip Design Challenges and Noteworthy Solutions. International Journal of Recent Technology and Engineering. 8. 741-746. 10.35940/ijrte.F7225.038620.
- Khan, Md Ashikur Rahman, M. M. Rahman, and **Md Saifur Rahman**. "Optimal set-up and surface finish characteristics in electrical discharge machining on Ti-5Al-2.5 Sn using graphite." *Perspectives in Science* 8 (2016): 440-443.
- **Rahman, M. S.**, Noor, M. M. E., Islam, T., Tiwari, R., Kalia, K., & Kumar, T. (2016). SSTL Input/Output Standard Based Energy Efficient Multiplier Design Using Urdhva Tiryagbhyam on 28nm FPGA. *International Journal of Control and Automation*, *9*(4), 245-252.
- Nagah, S., Pandey, B., Kalia, K., Kaur, R., & **Rahman, M. S.** (2015). I/O StandardsBased on Green Communication UsingFibonacci GeneratorDesign on FPGA. *International Journal of Control and Automation*, *8*(8), 113-118.
- Mahbub-E-Noor, Md, Shah Md Tanvir Siddiquee, and **Md Saifur Rahman**. "Evaluation of OpenStack (Havana Release) and CloudStack (4.3 Release) Open Source Cloud Solutions." *Information Technology Journal* 13.16 (2014): 2508.
- **Rahman, M. S.**, Hossain, M. B., Hossain, M. J., & Baowaly, M. K. (2009). Performance Comparison and Improvement of Broadcasting Protocols in Mobile Ad-hoc Network.

Book Publications

- Broadcasting Protocols in Mobile Ad-hoc Network: Performance comparison, improvement, and suggestion, Author: **Md. Saifur Rahman**, ISBN-13: 9783659159220, Publication Date: June 2012.

Professional Affiliations

- Editorial Board Member, American Journal of Neural Networks and Applications (AJNNA)
- Professional Member, Association for Computing Machinery (ACM), Member number: 6771532
- Professional Member, IEEE, USA, Member number: 100062948
- Member, IEEE Young Professional
- Member, IEEE Computer Society
- Program committee member: 4th international conference on Green Computing and Engineering Technologies (ICGCET-2018), Esbjerg, Denmark.
- Program committee member: 2nd international conference on Recent Trends in Computer Science and Electronics (RTCSE-2017), Kuala Lumpur, Malaysia.
- Program committee member: Fourth international conference on signal, Image Processing and Pattern Recognition (SIPP-2016), Zurich, Switzerland.
- Associate member, Bangladesh Computer Society, membership no.: AM-10437.
- Member: Gyancity Research Lab, India.

Community Engagement

- Judge – Poster Presentation, Research Day on April 4, 2024, Organized by SPHSA, UTHealth.
- Preliminary Exam Proctoring, Biostatistics and Data Science, School of Public Health, UTHealth Houston (2024, 2025)

Voluntary & Leadership Experience

- Executive member, Bangladesh Association of North Dakota (2022 – 2023)
- Executive member, Bangladesh Association of North Dakota (2020 – 2021)
- Secretary, Bangladesh Student Association- UND (2020 - 2021)
- Member, IEEE – UND Chapter
- Member, ACM – UND Chapter
- Google Local Guide (level 5)
- Volunteer: Khan Academy, Wikipedia, Google
- President, Noakhali Science & Technology University Open-Source Network (NSTU_OSN)- 2009 to 2011
- Core Member and Coordinator, IDEA (Information Development and Exchange Association) (2009 to present)

Technical skills and Competence

- Expertise: Data Analytics, Data Mining, Machine Learning, Deep Neural Networks, Statistical Analysis
- Programming language: Python, Pandas, NumPy, R, Java, SQL, PHP, JavaScript, HTML, C++, C, Perl, CGI
- Deep Learning Framework: TensorFlow, Keras, SageMaker, PyTorch
- Notebook: Jupitar Notebook, Google CoLab
- Database: Oracle, MySQL, Microsoft Access
- Data Analysis Tools: SPSS, PowerBI, Tableau
- Notebook: Jupitar notebook, Google CoLab
- Mobile app development by the Android Studio
- CMS: WordPress, Drupal, Joomla
- Operation System: Windows, Linux
- Microsoft Office: Word, PowerPoint, Excel, Access.

Courses Taught

University of Texas Health Science Center at Houston
- Introduction to Data Science
- Fundamentals of Data Analytics and Predictions
- Programming with Python for Data Science
- Programming with R for Data Science
- Advance Data Analytics and Machine Learning
- Advanced Data Analytic Methods: AI and Deep Learning

University of Minnesota - Crookston
- Human-Computer Interaction
- Software Engineering
- Website Development
- Microprocessor Operating System
- Programming Language II (Advance Java Programming)
- Software Requirement Analysis
- Software Construction

University of North Dakota
- Computer Science I – Lab (Python Programming Language)

Noakhali Science and Technology University
- Database Management System
- Digital Logic Design
- Object Oriented Programming Java
- Embedded Software Design
- Software Analysis and Design
- Introduction to Information Technology
- Introduction to Computer Science

University of Development Alternative
- Discrete Mathematics
- Management Information System
- System Analysis and Design
- Computer Organization and Architecture

Feni University
- Software Engineering

Project Work

- Day-Ahead Electricity Price Forecasting via Machine Learning: Develop a deep learning neural network model to predict day ahead (24 hours) electricity price based on prior 7 days (168 hours). Utilizing LSTM deep learning, Z – score normalization, data preparation & splitting, MAE, RMSE, Adam Optimizer, CAISO dataset and so on. Later, improve this model by adding more features like air temperature, wind, power load etc, tuning parameters, and modifying LSTM model (regularization, dropout etc). Due to data privacy, I cannot share the improved version publicly!
  GitHub: https://github.com/Quazi-07/Day-Ahead-Electricity-Price-Forecasting-via-Machine-Learning
- Sentiment Analysis using Basic Text Classification (NLP).
  GitHub: https://github.com/Quazi-07/Sentiment-Analysis-using-Basic-Text-Classification-NLP-
- Dog vs. Cat Image Classification using CNN.
  GitHub: https://github.com/Quazi-07/Dog-vs.-Cat-Image-Classification
- Classification of Images of Flowers using CNN.
  GitHub: https://github.com/Quazi-07/Classification-of-Images-of-Flowers
- Video inbetweening using 3D convolutions.
  GitHub: https://github.com/Quazi-07/Video-inbetweening-using-3D-convolutions
- Data analysis and visualization with R. Tidy the data, ggplot2, filter data, subset data, Bar chart, stacked bar chart, grouped bar chart, line chart, multiple line chart, histogram, scatter plot, violin plot, box plot, area chart, polygon, blend plot, mixed plot and so on.
  GitHub: https://github.com/Quazi-07/Data-Visualization-with-R
- Design a C++ program which measures performance of transpose operation of a 2D matrix.
  GitHub: https://github.com/Quazi-07/MatrixTransposeInOpenMP
- Develop a Focused Search Engine using Java, Perl, HTML, SQL, Mysql server, UNIX command, etc.
  GitHub: https://github.com/Quazi-07/Focused-Search-Engine
- Develop an Online Book Store Management System using Oracle object-relational database. Implement CGI, Perl, Java, HTML, SQL programming language.
  GitHub: https://github.com/Quazi-07/OnlineBookstore-Oracle-ORDBMS-
         https://github.com/Quazi-07/Online-BookStore-1st-version-
- Location Activity: Develop a mobile app that can draw a route direction in between two places (google API).
  GitHub: https://github.com/Quazi-07/Location-Activity
- Develop a mobile app named "Restaurant System" using Android Studio.
  GitHub: https://github.com/Quazi-07/Restaurant-App