Md Salman Rahman

CONTACT INFORMATION

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RESEARCH INTERESTS

Data Science, Machine Learning, Business Analytic, Game Theory, Computational Social Science, Computational Sustainability, and AI for Good.

EDUCATION

University of Texas Rio Grande Valley — *Edinburg, TX*
M.S. in Applied Statistics and Data Science, CGPA: **4.00/4.00** — *Present*
Thesis title: *Human Cultural Dimensions and Behavior during COVID-19 Can Lead to Economic Losses: A Perspective from Game Theory Analysis*

Chittagong University of Engineering and Technology — *Bangladesh*
B.Sc. in Civil Engineering with Honors, CGPA: **3.84/4.00** — *July 2018*
Class Rank: Summa Cum Laude (top 1-2% in a class of 126 students)

AWARDS

- Presidential Graduate Research Assistantship for master's study. 2020
- Dean's list award for academic excellence at all levels of undergraduate study, Bangladesh. 2018
- University merit scholarship for academic excellence at all levels of undergraduate study, Bangladesh. 2014-2018
- High school scholarship awarded by government of Bangladesh. 2008
- Primary school talent pool scholarship awarded by UNICEF & government of Bangladesh. 2005

PUBLICATIONS

Peer-reviewed Journal (*denotes co-first author)

[1] Tamal Chowdhury, Hemal Chowdhury, Samiul Hasan, **Md Salman Rahman**, M.M.K.Bhuiya, Piyal Chowdhury. *Design of a stand-alone energy hybrid system for a makeshift health care center: A case study.* In Journal of Building Engineering, 40, 102346, 2021. (Impact Factor: 3.379). [Link]

[2] Monirul Islam Miskat, Ashfaq Ahmed, **Md Salman Rahman**, Hemal Chowdhury, Tamal Chowdhury, Piyal Chowdhury, Sadiq M. Sait, Young-Kwon Park. *An overview of the hydropower production potential in Bangladesh to meet the energy requirements.* In Environmental Engineering Research, 26(6), 200514, 2020. (Impact Factor: 1.438). [Link]

[3] 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.* In Remote Sensing, 12(20), 3347, 2020. (Impact Factor: 4.118). [Link]

Conference Abstract

[1] **Md Salman Rahman**, Md Reaz Akter Mullick, Panjarul Haque, Nadia Sultana Nisha. *Effect of Climate Change to Irrigation Water Requirement in an Irrigation Project of Bangladesh.* In American Geophysical Union (AGU) fall meeting in San Francisco, USA (December 2019). [Link]

[2] Emon Roy, **Md Salman Rahman**, Nadia Sultana Nisha. *Climate Change Induced Disaster and Adaption Strategy at Coastal Region of Bangladesh: a Case Study on Saint Martin Island.* In American Geophysical Union (AGU) fall meeting in San Francisco, USA (December 2019). [Link]

[3] **Md Salman Rahman**, Rupom Kanti Dhar, Md Reaz Akter Mullick. *Seasonal Weather Prediction for Bangladesh Based on ENSO Condition.* In American Geophysical Union (AGU) fall meeting in San Francisco, USA (December 2019). [Link]

[4] **Md Salman Rahman**, Nadia Sultana Nisha. *Sustainability Impact on Bangladesh Due to Influx of the Rohingya Immigrants.* In International Conference on the Rohingya Crisis in Comparative Perspective, UCL Institute for Risk and Disaster Reduction, University College London, UK (July-2019). [Link]

Others

[1] Emon Roy, **Md Salman Rahman**, Nadia Sultana Nisha, Amlan Majumder. *Water Vulnerability Scenario of a Typical Populous City of Least Developed Country.* In 5th International Conference on Civil Engineering for Sustainable Development (ICCESD 2020). [Link]

[2] **Md Salman Rahman**, Sultan Mohammad Farooq, Md Aftabur Rahman. *Improvement of Soft Soil by Physical and Chemical Interaction.* In 4th International Conference on Advances in Civil Engineering (ICACE 2018). [Link]

In Review

[1] Tamal Chowdhury, Hemal Chowdhury, **Md Salman Rahman**, Monirul Islam Miskat, Nazia Hossain, Piyal Chowdhury, Sadiq M. Sait. *Progress of Solar Energy Application in Bangladesh, Techno-economic Analysis and Implementation of Artificial Intelligence* (Under review in Utilities Policy, Impact Factor : 1.835).

[2] Md Reaz Akter Mullick, **Md Salman Rahman**, Md Panjarul Haque. *More Crops Whilst Saving Drops Using an Optimization Model – a Case from Bangladesh* (Under review in Irrigation and Drainage, Impact Factor : 1.027).

[3] *Monirul Islam Miskat, ***Md Salman Rahman**, Nazia Hossain, Md. Fazleh Rabbi, Nadia Sultana Nisha, Hasan Yildizhan. *Assessment of Sustainability for Turkey's Residential Sector with Advanced Thermodynamics Analysis* (Under review in Journal of Building Engineering, Impact Factor : 3.379).

[4] *Monirul Islam Miskat, ***Md Salman Rahman**, Nazia Hossain, Md. Fazleh Rabbi, Nadia Sultana Nisha, Hasan Yildizhan. *Energy, Exergy, and Sustainability Analysis of Fossil-fuel Applications in the Industrial Sector of Iran: A Case Study* (Under review in Environmental Science and Pollution Research, Impact Factor : 3.056).

[5] Hemal Chowdhury, Tamal Chowdhury, **Md Salman Rahman**, Monirul Islam Miskat. *Estimating the Medical Waste Generation During COVID-19 Pandemic in Bangladesh* (Under review in Resources, Conservation & Recycling, Impact Factor : 8.086).

SERVICES

Journal Reviewer [ORCiD]

- Water Resources Management

TALKS

Remote Sensing Data Processing. North South University, Bangladesh, November 2020.
Fundamental of Satellite Remote Sensing. North South University, Bangladesh, October 2020.
Data Science and Machine Learning to Tackle Societal Challenges. SPIE Student Chapter Seminar, University of Texas RGV, USA, August 2020.

RESEARCH EXPERIENCE

AI for social good [Remote sensing Journal]

- Develop a machine learning-based landslide susceptibility map for Rohingya refugee with a better spatial agreement and minimizing the uncertainty involved in various methods.

Machine learning and optimization for sustainable agriculture

- Designed a linear programming optimization model to maximize crop production and subsequently net benefit considering the climate change effects.

WORK EXPERIENCE

Research Assistant, School of Mathematical and Statistical Sciences, University of Texas Rio Grande Valley Spring 2021 - Present
Supervisor: Professor Tamer Oraby
Project Title: Human cultural dimensions and behavior during COVID-19 can lead to economic losses: a perspective from game theory analysis.

Research Assistant, ECE Department, North South University Fall 2020
Supervisor: Professor M. Rashedur Rahman
Project Title: Dense prediction under pseudo-random and non-random noise in multi-dimensional labels.

TECHNICAL SKILLS

Languages: Python, C++, R, MATLAB, OCTAVE, C, Java.
Frameworks: TensorFlow, PyTorch, Flask, Keras, Django, REST Api, Bootstrap.
Libraries: Numpy, Scikit-learn, Seaborn, Pandas, Matplotlib, SciPy.
Statistics: R, IBM.
Database: MySQL.
Remote sensing: ArcGIS, Google Earth Engine, R.
Data Structures and Algorithms: Familiar with concepts used in data mining and machine learning.
Others: Data analysis using Python & R, Google Colab, IBM Watson Studio, IBM Developer Skills Network Labs, Jupyter & Zeppelin Notebook.

REFERENCE

Available upon request