

# Md Salman Rahman

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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](#)]

## Book Chapters

- [1] Tamal Chowdhury, Hemal Chowdhury, Monirul Islam Miskat, **Md Salman Rahman**, Nazia Chowdhury. *Membrane based hybrid processes for wastewater treatment*. In book: Membrane-Based Hybrid Processes for Wastewater Treatment. Edited by Maulin P. Shah and Susana Rodriguez-Couto. Chapter 19. Elsevier, 2021. [[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	<b>Journal Reviewer</b> <a href="#">[ORCiD]</a> <ul style="list-style-type: none"> <li>Water Resources Management</li> </ul>
TALKS	<b>Remote Sensing Data Processing.</b> North South University, Bangladesh, November 2020. <b>Fundamental of Satellite Remote Sensing.</b> North South University, Bangladesh, October 2020. <b>Data Science and Machine Learning to Tackle Societal Challenges.</b> SPIE Student Chapter Seminar, University of Texas RGV, USA, August 2020.
RESEARCH EXPERIENCE	<b>AI for social good</b> [Remote sensing Journal] <ul style="list-style-type: none"> <li>Develop a machine learning-based landslide susceptibility map for Rohingya refugee with a better spatial agreement and minimizing the uncertainty involved in various methods.</li> </ul> <b>Machine learning and optimization for sustainable agriculture</b> <ul style="list-style-type: none"> <li>Designed a linear programming optimization model to maximize crop production and subsequently net benefit considering the climate change effects.</li> </ul>
WORK EXPERIENCE	Research Assistant, School of Mathematical and Statistical Sciences, University of Texas Rio Grande Valley <span style="float: right;">Spring 2021 - Present</span> Supervisor: <a href="#">Professor Tamer Oraby</a> 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 <span style="float: right;">Fall 2020</span> Supervisor: <a href="#">Professor M. Rashedur Rahman</a> 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