

Md SALMAN RAHMAN

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RESEARCH INTERESTS

Artificial Intelligence, Machine Learning, Computational Sustainability, Optimization, Decision Making Under Uncertainty, Applied Data Science, and Remote Sensing.

EDUCATION

Chittagong University of Engineering and Technology
B.Sc. in Civil Engineering with Honors, CGPA: **3.84/4.00**
Class Rank: Summa Cum Laude (2nd in a class of 126 students)

Bangladesh
July 2018

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. 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

- [1] Md Sarfaraz Goni Adnan, **Md Salman Rahman**, Nahian Ahmed, Bayes Ahmed, Md. Fazleh Rabbi, Rushedul Haque. *Improving spatial agreement in machine learning-based landslide susceptibility mapping* (Under review in Remote Sensing, Impact Factor : 4.118).
- [2] 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).
- [3] Tamal Chowdhury, Hemal Chowdhury, **Md Salman Rahman**, Monirul Islam Miskat, Piyal Chowdhury, Sadiq M. Sait. *A Review of the Hydropower Production Potential in Bangladesh to Encounter the Energy Requirements* (Under review IEEE Access, Impact Factor : 4.098).
- [4] Tamal Chowdhury, Hemal Chowdhury, **Md Salman Rahman**, Piyal Chowdhury, Muhammad Bhuiya. *Preliminary Design of a Stand-Alone Energy Hybrid System for a Makeshift COVID-19 Health Care Center: A Case Study* (Under review Journal of Building Engineering, Impact Factor : 3.379).
- [5] 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).

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 Barua. *Water Vulnerability Scenario of a Typical Populous City of Least Developed Country*. In 5th International Conference on Civil Engineering for Sustainable Development (ICCESD 2020).
- [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). [\[Link\]](#)

SERVICES

Journal Reviewer [\[ORCiD\]](#)

- Water Resources Management

TALKS

Data Science and Machine Learning to Tackle Societal Challenges [\[Details\]](#)

University of Texas RGV, SPIE Student Chapter Seminar, August 2020

RESEARCH EXPERIENCE

AI for social good [Remote sensing Journal]

- Develop a machine learning-based landslide susceptibility map for Rohingya refugees 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.

RELEVANT COURSEWORK

Undergraduate (summary)

- Courses in engineering mathematics (Differential & integral calculus, vector calculus, linear & vector algebra, differential equations, matrices, probability, Laplace & solid geometry, spherical trigonometry, Fourier analysis & harmonics), programming, and basic science.
- Courses related to sustainability, smart buildings and cities, climate & hydrology, surveying (remote sensing), sustainable agricultural system, advancement towards sustainable development, transportation & operation research, and environmental engineering.

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