MD SALMAN RAHMAN

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RESEARCH INTERESTS

Machine Learning, Computer Vision, Deep Learning, Computational Sustainability, Remote Sensing, Image Processing, Optimization, AI for Good, and Applied Data Science.

EDUCATION

Chittagong University of Engineering and Technology *Bangladesh*
B.Sc. in Civil Engineering with Honors, CGPA: **3.84/4.00** *Fall 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. 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] 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]
[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, 12(20), 3347, 2020. (Impact Factor: 1.438). [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] 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 in Journal of Building Engineering, Impact Factor : 3.379).

[6] 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, ECE Department, North South University Fall 2020 - Present Supervisor: Professor M. Rashedur Rahman

Project Title: Dense prediction under pseudo-random and non-random noise in multidimensional 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