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EDUCATION

Masters of Science in Geography Dec 2020
Geography Department, Ohio University CGPA: **3.81**/4.0
Masters of Science in Water Resource Development May 2018
Bangladesh University of Engineering and Technology CGPA: 3.33/4.0
Bachelor of Urban and Regional Planning July 2014
Bangladesh University of Engineering and Technology CGPA: 3.62/4.0

SELECTED PROJECTS

GIS and Remote Sensing based hurricane damage assessment, US Feb 2019 - present

- Analyzed Landsat satellite images utilizing ArcGIS Pro, model builder and python script to correlate different intensity hurricane effects
- Measured pre and post hurricane effects by masking clouds, mosaicking scenes, calculating remote sensing indices and buffering around hurricane tracks
- Applied spatial queries and spatial analysis to evaluate the results
- Classified images to prepare digital maps for visualizing hurricane damage recovery

Image processing to prepare land cover map of Columbus, Ohio Aug 2018 - Dec 2018

- Processed hyperspectral images through radiometric correction, dark subtraction, histogram analysis, image filtering, band ratioing, supervised classification, unsupervised classification, post processing and spectral library building to prepare land cover map utilizing ENVI

Development of analytical model for assessment of salinity hazard Nov 2015 - July 2018

- Improved an existing tidal prism model to quantify salinity residence time for an estuarine environment
- Calculated parameters of the model through Delft3D, and processed data using ArcGIS, ArcPy and MATLAB
- Developed a new indicator named Non-Dimensional Index for Salinity (NDIS) to assess salinity hazard based on non-dimensional analysis
- Generated salinity hazard map for present and future scenarios which had been considered for local level coastal planning in Bangladesh

Salinity and hydrologic modeling of GBM Delta June 2015 - July 2018

- Established 2D salinity model, calibrated, and validated model for Bangladesh coast using Delft3D
- Analyzed database using SQL, Excel, ArcGIS and formulated analytical representation through graphs, charts and tables
- Simulated scenarios such as sea level rise, superimposed cyclone, and flooding to examine salinity intrusion condition in Bangladesh coast and GBM Delta using Delft3D, ArcGIS and satellite imagery.
- Utilized GPS, GIS and programming scripts to analyze results and prepare maps

Coastal hazard vulnerability mapping Apr 2015-May 2015

- Conducted ArcGIS based spatial analysis, queries, slope analysis, DEM analysis, projection transformation and mapping to identify hazard vulnerability in Bangladesh coast

PROFESSIONAL EXPERIENCES

Graduate Teaching Assistant Aug 2018-Dec 2019
Geography Department, Ohio University

- Taught lab sections of Introduction to GIS and Mapping Sciences, and Principles of GIS
- Graded and evaluated submitted labs and provided assistance to students

Adjunct Faculty May 2018-July 2018
Department of Civil Engineering, Presidency University, Bangladesh

- Delivered lectures on Introduction to GIS (6 credits) course
- Graded exam papers and evaluated student performance

Research Assistant June 2015 - July 2018
DECCMA project, Institute of Water and Flood Management, Bangladesh University of Engineering and Technology

- Utilized salinity data, calibrated and validated numeric model, analyzed data and processed output applying ArcGIS, ArcPy, MATLAB and SQL
- Presented outputs in project meeting, workshops and prepared project reports

Research Assistant Jan 2015 - May 2015
Postgraduate programs on Disaster Management, BRAC University

- Coordinated postgraduate program and helped students in coursework

Intern Oct 2013 - Nov 2013
Dhaka City Corporation, Bangladesh

- Designed the layout plan and studied site for Redevelopment of Bahadur Shah Park project, funded by World Bank

SKILLS

GIS: ArcGIS 10.7, ArcGIS Pro 2.4.2, ArcGIS Online
Image analysis and processing: ENVI
Programming Language: Python, MATLAB, C, HTML, CSS, JavaScripts, SQL
Database: MySQL, MSSQL, PostGIS, PostgreSQL
Data Visualization: Tableau
Mathematic and Numeric Modeling suites: Delft3D, Hec-RAS
Others: AutoCAD, SPSS, MS Project, Adobe products, Corel draw, GPS technology

SELECTED COURSES

Principles of GIS, Principles of Remote Sensing, GIS and Remote Sensing Studio, Air Photo Interpretation, Mathematical Modeling, Programming Techniques, Surveying and Cartography, Elements of Solid Mechanics, Elements of Civil Engineering Structures, Operations Research and Systems Analysis

SELECTED PUBLICATIONS

- The Dominant Climate Change Event for Salinity Intrusion in the GBM Delta. *Climate*, 2019
- Mapping of Climate Vulnerability of the Coastal Regions of Bangladesh using Principal Component Analysis. *Journal of Applied Geography, Elsevier*, 2018
- Conservation Planning of Built Heritages of Old Dhaka, Bangladesh. *Journal of Cultural Heritage Management and Sustainable Development*, 2017

Conference Publications: Nine International conference publications*, one Forum publication*, one research presentation at the regional meeting of The American Association of Geographers (AAG) 2018
*Google Scholar: https://scholar.google.com/citations?user=Hmf8QhIAAAAJ&hl=en