ATIKUL HOQUE
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RESEARCH INTEREST

Vegetation Remote Sensing (Optical and Radar), GIS, Timeseries analysis, Land Cover/ Land Use Change, Agriculture and Drought monitoring, Phenology

PROFESSIONAL EXPERIENCE

Graduate Research Assistant, **Spatial Application Research Center (SpARC)** August 2022 – Present
Department of Geography, New Mexico State University, Las Cruces, NM

- Reviewing literature to find the appropriate remote sensing methods and sensors to map and monitor woody plant encroachment in arid and semi-arid environments.
- Leading a research team in the field to collect field spectral information with spectroradiometer and UAS imageries to calibrate and validate remote sensing data.
- Conducted pilot studies based on the reviewed methods and presented the initial results at AAG, Denver 2023 and SWAAG, Arkansas 2022.
- Provide tech support (Google Earth Engine, R, ENVI, ArcGIS/GQIS) to other projects e.g., 'Using Multi-temporal Optical and Radar imagery for landcover mapping in Panama' and 'Predicting distribution of Acequias using Geospatial Artificial Intelligence (GeoAI).

Research Intern, German Remote Sensing Data Center January 2022 – March 2022
German Aerospace Center (DLR), Munich, Germany

- Developed Google Earth Engine workflow to derive temporal profiles of Sentinel-2 (EVI) and Indices value across different phenology phases of wheat.
- Determined the variability of winter wheat phenology and compared the phenology development with weather and soil data.
- Processed field parcel data with Python and QGIS for input in crop-type classification.

Teaching and Research Assistant, Geography and Environmental Studies February 2019 – July 2020
University of Chittagong, Bangladesh

- Acted as an instructor of record for undergraduate course 'Remote Sensing and Satellite Imagery'.
- Acted as lab instructor for undergraduate course 'Geographic Information System'.
- Geospatial and climatic data acquisition, analysis and visualization.
- Writing research reports, conducting field surveys and reviewing literature.

ACADEMIC CREDENTIALS

New Mexico State University (NMSU), Las Cruces, NM August 2022 – Present
Master of Science in Applied Geography

Relevant Courses: Advanced Remote Sensing, Cartography and GIS, Geographic Theory and Application, Integrative Research Design, Fundamentals of GIS, Southwest Environment

Grade: 3.95/ 4.0 (Semester 2/4)

Geo-Information Science and Earth Observation (ITC), University of Twente, The Netherlands
Master of Science in Natural Resource Management August 2020 – July 2022

Relevant Courses: GI Science and Modelling, Earth Observation, Data Integration, Systems Approach for Management of Natural Resources, From Data to Geo-Information for NRM, Earth Observation for NRM, Global Challenge Local Action, Environmental Modelling: Causes and Impacts of Changing Resources, Weather Impact Analysis, Quantitative Remote Sensing for Vegetation Parameters

Grade: 7.95/ 10 (Semester 4/4)

Thesis title: Variability of wheat phenology from Sentinel-1 and -2 time series: a case study for Brandenburg, Germany

University of Chittagong, Chattogram, Bangladesh January 2015 – June 2019
Bachelor of Science in Geography and Environmental Studies

Relevant Courses: Geographic Information System, Remote Sensing and Satellite Imagery, Digital Image Processing, Digital Cartography, Geo-Statistics, Research Methodology, Application of GIS

Grade: 3.70/ 4.0 (Semester 8/8)

PUBLICATIONS AND PRESENTATIONS

Rashid, K. J., **Hoque, M. A.**, Esha, T. A., Rahman, M. A., & Paul, A. (2021). Spatiotemporal changes of vegetation and land surface temperature in the refugee camps and its surrounding areas of Bangladesh after the Rohingya influx from Myanmar. *Environment, Development and Sustainability*, 23, 3562-3577. https://doi.org/10.1007/s10668-020-00733-x

Hoque, A., Schlund, M., Vrieling, A. Spatial and temporal variability of winter wheat phenology from Sentinel-1 and -2 time series. Forthcoming.

Hoque, A., Buenemann, M. (2023). Monitoring changes of Rangeland vegetation with remote sensing (AAG conference, Denver 2023).

Buenemann, M., Akrasi, O., **Hoque, A.** (2023) Use of multi-temporal optical, radar, and fused optical-radar images for mapping land cover changes in the north-central Panama (AAG conference, Denver 2023)

Hoque, A., Ransom, A., Buenemann, M., Reichenborn, M. (2022). Use of Remote Sensing for monitoring Rangeland Vegetation Changes following herbicide treatment (Poster presentation, SWAAG conference, Arkansas 2022).

GRANTS AND SCHOLARSHIP

- SWAAG Student Summer Research Scholarship 2023 (April 2023)
- Spring/Summer 2023 College of Arts & Sciences Graduate Student Travel Grant award (February, 2023)
- AAG-GTU Travel Grant award (February, 2023)
- NMSU Department of Geography and Environmental Studies Travel Grant award (March, 2023)
- NMSU Grad Success Scholarship (Fall 2022 & Spring 2023).
- Erasmus Mobility Exchange Fund to do internship in Germany (December 2021).
- Orange Knowledge Programme (OKP) Scholarship from Dutch Government (June 2020)
- ITC Excellence Scholarship from Faculty ITC, The Netherlands (February 2020)
- National Science and Technology (NST) Government of Bangladesh Award 2020 for research proposal (May 2020).

TECHNICAL SKILLS

- Programming Languages: R, Python
- Remote Sensing: Google Earth Engine, ENVI, SNAP, eCognition, FRAGSTATS, TIMESAT
- GIS: QGIS, ArcGIS (Pro, Desktop and online)
- R packages: dplyr, tidyr, raster, sf, greenbrown, ggplot2

PROFESSIONAL AFFILIATION

▪ Kappa Xi Gamma Theta Upsilon (NMSU Chapter) – Secretary	2022 - Present
▪ American Association of Geographers – Graduate Member	2022 – Present
▪ Geography Graduate Student Organization of NMSU – Graduate Member	2022 – Present
▪ Chittagong University Scientific Society – Founding Member	2018 - Present
▪ Bangladesh Geographical Society – Member	2018 - 2020

COMMUNICATION AND INTERPERSONAL SKILLS

- Taught students of grade 9 & 10 and prepared them for entrance exam of top-tiered high schools in Bangladesh
- Co-founder of an Environmental awareness organization called 'National Environmental Awareness and Restoration (NEAR). Organized several workshops and poster competitions.
- Organized 'GIS Day' program through the undergraduate study (2016 – 2019)