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 and UAS imageries to calibrate and validate remote sensing data.

▪ Preparing an NSF-DDRI proposal entitled ‘Monitoring Mesquite Encroachment with Remote Sensing’ as a co-PI.

▪ Conducted pilot studies based on the reviewed methods and presented the initial results at AAG, Denver 2023 and SWAAG, Arkansas 2022.

**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.

**Research Assistant, Geography and Environmental Studies** February 2019 – July 2020

University of Chittagong, Bangladesh

▪ Geospatial and climatic data acquisition, analysis and visualization.

▪ Acted as an instructor of ‘Introduction to Remote Sensing’ course for freshman year.

▪ 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](https://essay.utwente.nl/92055/)

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

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

**Hoque, M.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 (March, 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 (June 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 (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).