

Md Khadem Ali

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Education

National University, Bangladesh

B.Sc. in Geography and Environment (3rd Year)

2022–Present

St. Joseph's School and College

HSC in Science

2020–2021

Research Interests

- Remote Sensing and GIS Applications in Environmental Studies
- Climate Change Assessment and Hazard Modeling
- Land Use/Land Cover Analysis and Landscape Dynamics
- Geospatial Data Analytics for Ecosystem and Wetland Monitoring
- Machine Learning Techniques for Earth Observation and Spatial Modeling

Languages

Bengali: Native

English: Professional working proficiency

Duolingo English Test: 129 (CEFR C1), Oct 2025

[View my Duolingo Profile](#)

Skills

GIS & Remote Sensing: ArcGIS Pro, ArcMap, QGIS, Google Earth Engine

Programming & Scripting: Python, R, JavaScript (GEE)

Machine Learning & GeoAI: Scikit-Learn, TensorFlow

Data Analysis & Visualization: Pandas, NumPy, SPSS, Excel, Power BI, Matplotlib

Geospatial Tools: GeoPandas, Rasterio, GDAL/OGR, Shapely

Academic Tools: LaTeX, MS Word, MS PowerPoint, Zotero

Projects

Last updated: 2 Dec 2025. More projects available on [GitHub](#) • [Portfolio](#) (Projects Section)

LULC, NDWI & Water Bodies of Natore District

Spatial analysis of land cover, NDWI, and water bodies using Landsat-8 data and ArcGIS Pro under SERC Wetland Conservation Program. (Project ID: SP-7/24)

South Carolina Land Use & Land Cover Change Prediction (2019–2030)

Visualizing existing land cover and predicting changes using Google Earth Engine and rule-based urban growth models.

[GitHub](#)

Bangladesh Topography & Water Map

High-resolution elevation and hydrological mapping using GEE and multiple DEM datasets.

[GitHub](#)

World Continent Population Visualization (2024)

Global population distribution mapping with continent-wise comparative bar charts.

[GitHub](#)

Population Density Analysis of Rajshahi Division (2020)

Spatial distribution of population with district-wise comparison using GEE and Python.

[GitHub](#)

Flood Risk Mapping (Natore District)

Flood vulnerability assessment using Sentinel-1 SAR, SRTM, and NDVI datasets.

[GitHub](#)

Urbanization and Infrastructure Analysis (Natore District)

Analysis of urban growth, population density, and infrastructure development using geospatial data.

[GitHub](#)

Certifications

Last updated: 3 Dec 2025. See full list and verified certificates in my [Portfolio](#) (Certifications Section)

Esri – The ArcGIS Imagery MOOC: Foundations and Frontiers	December 3, 2025
Esri – Spatial Data Science: The New Frontier in Analytics	October 30, 2025
Esri – Cartography (MOOC)	October 1, 2025
Esri – Web Courses (13 ArcGIS Courses)	April 27, 2025
Esri – Free Certification Course (6-Day Program)	April 15, 2025
Alison – Advanced Diploma in Geographic Information Systems	March 13, 2025
DataCamp – Machine Learning Fundamentals (4-Course Track)	April 14, 2025
DataCamp – Associate Data Scientist (23-Course Track)	May 24, 2025

Professional Experience

Learning Point Coaching Center <i>Geography & Environment Instructor (Part-Time)</i> Taught Geography and Environmental Science to students of Classes Nine and Ten, maintaining clear communication to ensure strong conceptual understanding. Contributed to the development of educational graphics and learning materials, and gained practical teaching and teamwork experience aligned with academic interests.	Pabna 27 Jan 2025 – 01 Sep 2025
Polash Cadet School <i>Assistant Teacher (Part-Time)</i> Worked with students of Classes Three, Four, and Five, serving primarily as the Class Five instructor. Focused on teaching General Mathematics, General Science, and Bengali while fostering an engaging, supportive, and well-structured learning environment through effective communication and collaboration.	Pabna 14 May 2024 – 31 May 2025

Achievements & Awards

Mapathon: Cartography – 2nd Runner-Up <i>Organized by RUET GIS Club (GeoPlan 1.0) & Esri Recognized</i> Project: "Vegetation Dynamics in Natore Zila (2015–2025) Using Landsat 8 NDVI on Google Earth Engine"	December 06, 2025
Recreational Games Competition – 2nd Place <i>Organized by St. Joseph's School & College</i>	April, 2024
Science Olympiad – First Place (Senior Category) <i>Organized by Taranga Science Club</i>	February, 2018
Project Showcase – First Place (Senior Category) <i>Organized by Taranga Science Club</i>	February, 2018

Activities & Volunteering

Taranga Science Club	Jan 2015 – Present
○ Finance Secretary (Treasurer) (Sep 2025 – Present) : Managed finances, budgeting, fund allocation, and fundraising initiatives.	
○ Magazine Sub-Editor, IT & Project (Jan 2019 – Sep 2025) : Edited articles, handled IT tasks, led tech projects, and contributed to event planning.	
○ Member (Jan 2015 – Dec 2018) : Participated actively in club activities and volunteer programs.	
Space & Environment Research Center (SERC)	Jun 2025 – Present
○ Program Executive (Jun 26, 2025 – Present) : Executed NDWI and LULC mapping, led urban–rural GIS classification projects. Project ID: SP-7/24	
○ Volunteer (SERC-V20250602) (Jun 04 – Jun 25, 2025) : Assisted in GIS & Remote Sensing projects and related tasks.	
Durbin	Apr 2024 – Present
Volunteer : Science education and astronomy awareness campaigns.	
Safe Woman of Bangladesh	May 2023 – May 2024
Youth Delegate : Engaged in international relations and public speaking.	
Tachyon	Jun 2024 – Present
Content Writer & Proofreader : Focused on writing, editing, and presentation support.	

Interests

Professional: Geospatial research, environmental data analysis, teaching and mentoring, academic writing, science communication
Personal: Reading fiction and non-fiction, watching films, travel and nature photography, recreational sports (cricket and football)