

DRUBO PAUL

GIS Analyst | Remote Sensing & Environmental Analytics

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Research Interests

Remote Sensing & GIS • Forest and Coastal Ecosystem Monitoring • Mangrove Health Assessment • Machine Learning & Deep Learning for Environmental Applications • Spatiotemporal Analysis • Satellite Data Fusion (Optical & SAR) • Land Use/Land Cover Change Detection • Climate Change Impact Assessment

Education

Master of Science in Forestry

University of Chittagong

Bangladesh

Session: 2021–2022 | January 2024 – June 2025

CGPA: 3.73/4.00

- Total Credits: 36
- Thesis: “Assessment of Soil Organic Carbon and Factors Influencing Carbon Stock in Chittagong City Corporation Area”
- Supervisor: Dr. A. T. M. Rafiqul Hoque, Professor, Institute of Forestry and Environmental Sciences

Bachelor of Science in Forestry (Honours)

University of Chittagong

Bangladesh

Session: 2018–2021 | January 2018 – December 2023

CGPA: 3.68/4.00

- Total Credits: 192 | Last Semester CGPA: 3.75/4.00
- Undergraduate Research: “Composition and Diversity of Natural Regeneration in Batali Hill, Chittagong”
- Supervisor: Dr. M. Main Uddin, Professor, Institute of Forestry and Environmental Sciences

Professional Experience

GIS Analyst

Institute of Water Modelling (IWM)

Dhaka, Bangladesh

February 2025 – Present

- Apply spatial modeling and statistical analysis for hydrological and environmental research
- Process and analyze satellite imagery (optical & SAR) for flood monitoring and land cover classification
- Automate geospatial workflows using Python (GeoPandas, Rasterio) and Google Earth Engine
- Develop geospatial databases supporting water resource management and climate adaptation research
- Collaborate with multidisciplinary teams on flood risk assessment and environmental modeling projects
- Integrate remote sensing data with GIS workflows for environmental decision-support systems

Research Projects

SAR Surface Water Explorer (Google Earth Engine App)

Research Project | 2024–Present | Live App: [earthengine.app](#)

- Developed an interactive web application using Google Earth Engine to analyze monthly, seasonal, and interannual surface water dynamics for Bangladesh
- Implemented SAR (VV) thresholding, change detection, and spatial aggregation with export functionality (Geo-TIFF)

SurveyScriber – OCR & NLP Automation Tool

Software Development Project | 2024 | Live link: [surveyscriber.netlify.app](#)

- Developed cross-platform web-based application using Tauri, React, and Python
- Integrated multiple OCR engines (PaddleOCR, Google Vision AI, Azure Cognitive Services)
- Implemented NLP-based text analysis pipeline for structured data extraction from field surveys

VectorMatrix – Geospatial Data Processing Suite

Software Development Project | 2024 | GitHub: [DruboPaul/vector-matrix](#)

- Built GIS utility tool for vector data cleaning, validation, and topological analysis
- Developed algorithms for duplicate feature detection and geometric error correction

Field & Applied Research Experience

Forest Management Planning – Teknaf South Forest Division, Chittagong (8th Semester)

Comprehensive forest management planning; ecological assessments and stakeholder consultations

Baseline Survey Enumerator – Cox's Bazar Bamboo Afforestation Project

Household surveys and GIS-based location tracking for “Climate Action through Bamboo Afforestation”

Household & Visitor Survey Enumerator – Eco Park Masterplan Project

Demographic and perception-based data collection for Sitakunda, Banshkhali, Rajeshpur Eco Parks

Technical Skills

Programming: Python (Pandas, NumPy, Scikit-learn, TensorFlow, PyTorch), R, JavaScript, SQL

Geospatial/GIS: ArcGIS Pro, ArcGIS, QGIS, Google Earth Engine, Spatial Analysis, SAR Processing

Data Science: Machine Learning, Deep Learning, NLP, Statistical Modeling, Time Series

Cloud & Tools: AWS, Google Cloud, Azure ML, Spark, Git, Docker, Tableau, Power BI

Publications

Manuscripts in Preparation

References

Dr. M. Main Uddin

Professor

Institute of Forestry and Environmental Sciences

University of Chittagong, Bangladesh

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Md. Zahid Hasan Siddiquee

Associate GIS/RS Specialist

ICT, GIS & Remote Sensing Division

Institute of Water Modelling (IWM)

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