

Jintu Moni Bhuyan



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Research Interests

Remote Sensing, Carbon Cycle, Forest Carbon Dynamics, Carbon Bookkeeping Modelling, Forest Structural Dynamics, Ecosystem Modelling, Carbon Flux, Biogeochemistry-Climate Interactions, Forest Ecophysiology, UAV, LiDAR, Machine learning, and Deep learning.

Research Experience

Project Research Associate (*Ongoing*)

Indian Institute of Technology, Bombay
Research Project: Maharashtra Drone Mission
Sub Theme: Forest Dynamics (Related to forest fire)
Supervisor: Prof. Parmeshwar D. Udmale

Research Intern (*Feb, 2024 – May, 2024*)

International Water Management Institute (IWMI)
Delhi, India
Research Theme/Project: Water data Science and Digital Innovation.
Supervisor: Dr. Surajit Ghosh, Regional Researcher – Water Risk and Data Sciences Specialist.

Academic Projects

M.Tech. Project

Title: Carbon Bookkeeping for Large-Scale Tropical Deforestation in Eastern Himalayan Foothills, Northeast India.
Supervisor: Dr. Subrata Nandy (Scientist SF, Indian Institute of Remote Sensing)

M.Sc. Project

Title: Geo-environmental setting of a proposed bird sanctuary: a case study of Satajaan Beel, Lakhimpur, Assam.
Supervisor: Dr. Pallavi Sarma (Asstt. Prof., Gauhati University)

Education

M.Tech. in Remote Sensing and GIS [CGPA: 8.48] – 2022 to 2024
(Specialization: Forest Resources and Ecosystem Analysis)
Indian Institute of Remote Sensing, ISRO
Dehradun, IN

M.Sc. in Environmental Science [CGPA:8.81] –2020 to 2022
Gauhati University
Assam, IN

B.Sc. Geography [CGPA:8.65] –2017 to 2020
Gauhati University
Assam, IN

Achievements

DGCA certified UAV pilot (upto 25 kg).
Qualified GATE (GE) -2023, organized by IIT, Kanpur.
Qualified GATE (GE) -2024, organized by IISc, Bangalore.
Received the second prize for poster presentation at the Hindi Songusthi-2023, organized by IIRS-ISRS.

Module short Projects

Creating Cloud-based Web Applications for generating various indices and their 3D Visualisation. (2023)
Link: <https://jintu-moni-bhuyan.users.earthengine.app/view/indexextracter>
Collaborator: Mridul Yadav (Geoscience Department, IIRS)

	<p>Seasonal variation analysis of land surface temperature (LST) with normalized difference vegetation (NDVI) index and estimation of evapotranspiration (ET) using Python. (2023) Co-author: Prasun Kumar Gupta (Scientist SF, Geoinformatics, IIRS)</p> <p>Forest fire risk mapping using analytical hierarchy process (AHP) in GIS software: a case of Malkangiri, Odisha. (2022) Co-author: Kakali Deka (Urban & Regional Studies Department, IIRS)</p> <p>Habitat suitability analysis using AHP for Indian Pangolin (<i>Manis crassicaudata</i>) in Motichur Block, Uttarakhand, India. (2022) Collaborator: Aatreyee Nath (Forestry and Ecology Department, IIRS)</p> <p>Road network analysis using GIS techniques in the interest of finding the shortest routes for healthcare emergency situations, in Tezpur, Sonitpur, Assam. (2019) Co-author: Anshuman Udipta Khanikar (Ast. Professor, Darrang College, Assam)</p>
Field Experiences	<p>Conducted field measurements of tree diameter at breast height (DBH) and tree height, alongside collecting samples of shrubs, herbs, and litter in Northeast Himalaya Foothills.</p> <p>Conducted field sampling to evaluate physical and chemical parameters of wetland water for assessment purposes.</p>
Paper/Poster Presentations	<p>Bhuyan, J., Nandy, S., (2024). Monitoring tropical deforestation using time series satellite data and deep learning in Eastern Himalaya. IIRS Academia Meet, 2024. (<i>Poster Presentation</i>)</p> <p>Bhuyan, J., Yadav, M., & Kumar, B. (2023). Temporal Analysis of Urbanization and Urban Heat Island (UHI) Development in Kamrup District, Assam: An Investigation Utilizing Satellite Data. Hindi Sangusthi, IIRS-ISRS, 2023. (<i>Paper Presentation</i>)</p> <p>Deka, K., Bhuyan, J., & Pandey, K. (2023). GIS-based Assessment of Flood-Induced Ecological Vulnerability and Risk in Flood Prone Areas: A Case Study of Dhemaji and Dibrugarh District, Assam. ISG-ISRS National Symposium, 2023. Pune. (<i>Paper Presentation</i>)</p>
Publications	<p>Bhuyan, J. M., & Sharma, P. (2023). A study on the water quality and the change detection of the aquatic vegetation of Satajaan beel, North Lakhimpur, Assam. <i>Research Square</i>. DOI: 10.21203/rs.3.rs-2302522/v1</p> <p>Bhuyan, J. M. (2021). Environmental degradation of Satajaan beel, Lakhimpur, Assam. <i>International Journal for Research in Applied Science and Engineering Technology</i>, 9(9), 947– 954. DOI: https://doi.org/10.22214/ijraset.2021.38087</p>
Programming Skills	Python (Proficient), R (Proficient)
Software / Platform Skills	ArcGIS (Proficient), QGIS (Proficient), ERDAS (Good), SNAP (Good), Google Earth Engine (Good), Microsoft Office (Proficient)
Remote Sensing Skills	Optical, LiDAR, Microwave, and Thermal Remote Sensing.
Languages	English (Proficient), Hindi, Assamese

References

Dr. Subrata Nandy, Scientist "SF", Forestry and Ecology Department
Indian Institute of Remote Sensing,
Indian Space Research Organization
Email: nandy@iirs.gov.in

Dr. Taibanganba Watham, Scientist "SE", Forestry and Ecology Department
Indian Institute of Remote Sensing,
Indian Space Research Organization
Email: taibang@iirs.gov.in

Prof. Parmeshwar D. Udmale
Centre for Technology Alternatives for Rural Areas (CTARA)
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