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G20 भारत 2023 INDIA

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भारतीय सुदूर संवेदन संस्थान
Indian Institute of Remote Sensing

देहरादून / Dehradun

Placement Brochure 2025

- M.Tech.
- M.Sc.
- PGD

Vision

"Achieve excellence and remain in the forefront for capacity building in Remote Sensing & Geoinformatics and their applications"

Mission

"Transfer technology through capacity building and research in the field of Remote Sensing and Geoinformatics for sustainable development"

DIRECTOR'S DESK

Indian Institute of Remote Sensing (IIRS) under Indian Space Research Organisation (ISRO), Department of Space, Govt. of India is a premier training and educational Institute established in 1966 and committed to prepare Professionals in the field of Remote sensing, Geoinformatics and GPS Technology for Natural Resources, Environment and Disaster Management. The Institute also hosts Centre for Space Science & Technology Education in Asia and Pacific (affiliated to United Nations) and conducts International Training Programmes. The training and education programmes conducted by the Institute include: i) M.Tech (RS & GIS) in nine disciplines conducted in collaboration with Andhra University, Visakhapatnam, the course is approved by the All India Council for Technical Education (AICTE) ii) M.Sc. and PG Diploma courses in Geoinformatics conducted in collaboration with the Faculty of Geo-information Science & Earth Observation (ITC) of the University of Twente (UT), The Netherlands iii) Post-graduate Diploma (PGD) in Remote Sensing and GIS in nine disciplines. The Institute also conducts various other courses, namely i) Certificate programmes (including NNRMS-ISRO sponsored programme for University faculty) ii) Special on demand/tailor-made courses. The Institute has so far trained 15,614 professionals representing 115 countries from the Asia, Africa and South America.

Under the Outreach Programmes, the Institute conducts several courses for working professionals, researchers and students through state-of-the-art studio and e-learning concept. Currently, 3833 Institutes/Organizations spread across India are networked with IIRS. More than ten lakh participants have benefitted so far from IIRS Outreach Programmes.

The Placement Brochure of 2025 includes the skills acquired by IIRS students through training/education and project work that they have carried out as a part of their Course Curricula. I am sure that the Placement Brochure shall be helpful to the Geospatial Industry, Academia and other Institutions to pick the talent and also provide opportunity to the course participants for their placement.

I wish very bright future and steady career for our students.

Dr. Raghavendra Pratap Singh
Director, Indian Institute of Remote Sensing

Contents

Profile of the Institute

The Indian Institute of Remote Sensing (IIRS) is a constituent unit of Indian Space Research Organisation (ISRO), Department of Space, Govt. of India. Since its establishment in 1966, IIRS is a key player for training and capacity building in geospatial technologies and its applications through training, education and research in Southeast Asia. The training, education and capacity building programmes of the Institute are designed to meet the requirements of Professionals at working levels, fresh graduates, researchers, academia, and decision makers. IIRS is also one of the most sought after Institute for conducting specially designed courses for the officers from Central and State Government Ministries and stakeholder departments for the effective utilization of Earth Observation (EO) data. About 40 courses are conducted every year and 15,614 professionals and students have been trained/educated so far.

To widen its outreach, IIRS has started live and interactive Distance Learning Programme (DLP) since 2007. As on date, 3833 Institutes/Organizations are networked with IIRS and more than ten lakhs participants have attended various basic and advanced courses conducted by the Institute through DLP. IIRS has also launched e-learning course on Remote Sensing and Geo-information Science since August, 2014.

The Institute has a strong, multi-disciplinary and solution-oriented research agenda that focuses on developing improved methods / techniques for processing, visualization and dissemination of EO data & Geo-information for various societal applications and better understanding of Earth's system processes. Microwave, hyperspectral and high-resolution EO data processing and their applications is the main research focus, currently. State-of-the-art laboratory and field-based instrumentation and observatories network help meeting the research goals and objectives.

IIRS hosts headquarters of Centre for Space Science and Technology Education in Asia and the Pacific (CSSTEAP), affiliated to the United Nations and provides support in conducting the Remote Sensing and GIS training and education programmes. IIRS also plays a key role in the activities of Indian Society of Remote Sensing (ISRS), which is one of the largest non-governmental Scientific Societies in the country.

Training, Education & Capacity Building Programmes

The training and capacity building programmes of the Institute are designed to meet the requirements of various target/user groups, i.e., for professionals at working, middle and supervisory levels, fresh graduates, researchers, academia and decision makers. The duration of courses ranges from one-week to two-years. The programmes are meticulously designed by the domain experts, and are then approved by the Board of Studies and Academic Council consisting of eminent subject experts. A team of sixty eight dedicated scientists at IIRS contribute in delivering the course contents. Guest faculty from reputed Institutes in the country and abroad are regularly invited to share their knowledge and experience with the course participants. The training and education programmes conducted by the Institute include:

1. M.Tech. (RS & GIS) in nine disciplines conducted in collaboration with Andhra University, Visakhapatnam. The course is approved by the AICTE.

2. M.Sc. and PGD in in Geoinformatics conducted in collaboration with the Faculty of Geo-information Science & Earth Observation (ITC) of the University of Twente (UT), The Netherlands.

3. PGD in Remote Sensing and GIS in nine disciplines,

The Institute also conducts various other courses, namely i) Certificate programmes (including NNRMS-ISRO sponsored programme for University faculty), ii) Special on-demand/tailor-made courses. The Institute has so far trained 15,614 professionals representing 115 countries from the Asia, Africa and South America.

Under the Outreach Programmes, the Institute conducts several courses for working professionals, researchers and students through state-of-the-art studio and e-learning concept. Currently, 3833 institutions and organizations spread across India are networked with IIRS. More than nine lakh participants have benefitted so far from IIRS Outreach Programmes.

The Institute also provides opportunities to external students to pursue their research under the guidance of IIRS faculty. IIRS is a recognized centre for carrying out research leading to Ph.D. by Forest Research Institute (Deemed University), University of Pune, Doon University, Kumaon University, Uttarakhand Technical University and IIT, Roorkee. About 50 researchers who have worked under IIRS faculty have received PhD degrees till date from different universities. External Post-graduate/ Graduate students are also given opportunity to conduct their project work under the guidance of IIRS faculty.

For further details please visit IIRS website at https://www.iirs.gov.in

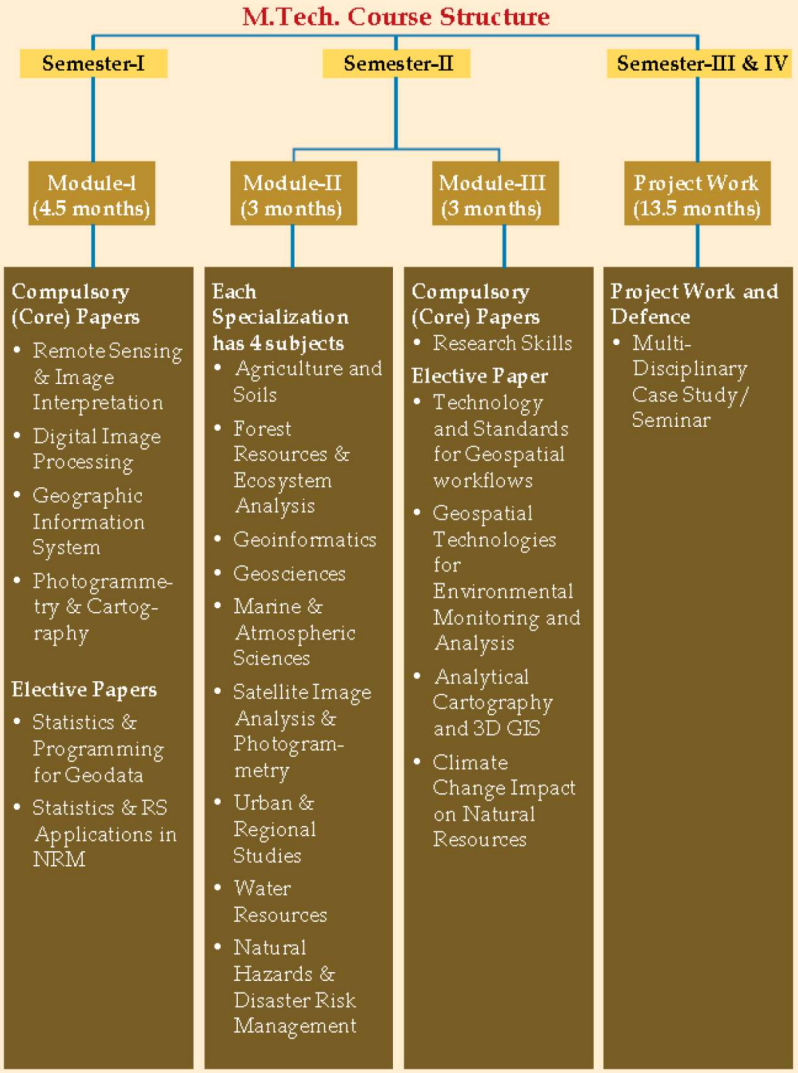
Brief profile of final year students

Long-term courses: M.Tech., M.Sc. & P.G.D.

The aim of the M.Tech. (RS&GIS) course is to provide in-depth understanding of Remote Sensing, Satellite Image Analysis, Geographic Information System (GIS) and Global Navigation Satellite System (GNSS) & LiDAR Technologies and their applications in natural resources survey and monitoring including Agriculture and Soils, Forestry and Ecology, Geology and Mineral Resources, Water Resources, Marine and Atmospheric Sciences, Urban and Regional Planning and Disaster Management.

It is a four-semester course in which first two semesters are devoted to exhaustive course work and other two semesters have a research project. The course work consists of 5 core papers in technology area, 4 core papers in subject specialization, 1 core paper in research skill development and 3 choice based elective papers. Two elective papers, include advanced geospatial technology such as Web Technology, Geodata Visualization, Statistics & Programming of Geodata, Natural Resources Management, Environmental Monitoring and Climate Change Studies. In the third elective paper, a candidate needs to carry out a theme-specific multidisciplinary case study of seminar out of the 60 topics offered from 9 specializations.

- Agriculture and Soils
- Forest Resources & Ecosystem Analysis
- Geoinformatics
- Geosciences
- Marine & Atmospheric Sciences
- Satellite Image Analysis & Photogrammetry
- Urban & Regional Studies
- Natural Hazards & Disaster Management
- Water Resources



aakashrnair@gmail.com

Aakash R Nair

Qualifications

M. Tech in Remote Sensing & GIS (Geosciences); B. Tech in Civil Engineering

Area of Interest

ML in Earth Sciences, Earthquake Monitoring & Prediction, GNSS/GPS Geodetic Prospecting, GIS for Socioeconomic & Hazard Studies, Ionospheric & Seismotectonic Modelling, Remote Sensing & Satellite Image Processing, Geospatial Data Automation & Integration, and Predictive Modeling for Earth System Processes

Software Skills

Python, R, PostgreSQL, C/C++, HTML, CSS, Bash Scripting, Linux, Git, GAMIT/GLOBK (GPS Processing), GMT, ERDAS Imagine, ENVI, QGIS, ARCGIS, SNAP, ILWIS, Google Earth Engine, Blender, CityEngine, Geoserver, AutoCAD 2D & 3D, Autodesk Revit, STAAD Pro, CSi ETABS, MS Office

Thesis

Integrated Approach for Analysing Multiparametric EO and in-situ data for detection of early signature of Earthquake precursors in the Himalayan Belt

Abstract

This study presents an integrated approach for analyzing multiparametric Earth Observation (EO) and in-situ data to identify early signatures of earthquake precursors in the Himalayan Belt. Utilizing remote sensing data, geodetic measurements, and environmental parameters, it focuses on detecting patterns and anomalies associated with pre-seismic activity. A robust analytical framework, incorporating advanced machine learning models and spatial filtering techniques, is employed to process and interpret diverse datasets. Validation through case studies of recent seismic events demonstrates the framework's potential to enhance early warning systems and strengthen disaster preparedness in the region.

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Aanchal Goel

Qualifications

MTech. (Remote Sensing & GIS (Marine & Atmospheric Sciences); M.Sc. (Atmospheric & Ocean Science); B.Sc. (Physical Science)

Area of Interest

Atmospheric modelling, Air pollution and aerosols studies using satellite and numerical weather model, Fog, Air-sea interaction, Tropical cyclones, Data assimilation, machine learning, statistics, Flood mapping, climate modelling

Software Skills

: Python, ArcGIS, ERDAS IMAGINE, shell scripting, WRF, WRF-chem, WRF-solar, Panoply, GRADS, HDF-view, R, MATLAB, ENVI, QGIS, Hy-split model, High Performance Computing (HPC), Irfan-view

Thesis

Sensitivity analysis of different land surface models coupled to WRF for the simulation of extreme rainfall events over NWH region

Abstract

This study explores numerical weather prediction (NWP) using the Weather Research and Forecasting (WRF) model with various Land Surface Models (LSMs) to simulate an extreme rainfall event (ERE) over the North-West Himalayas (NWH). By integrating distinct land use and land cover (LULC) datasets, it examines surface process influences on ERE. A detailed thermodynamic and physical analysis captures precursors and triggers of extreme precipitation, while synoptic-scale analyses during the Indian Summer Monsoon (ISM) assess atmospheric conditions driving catastrophic rainfall. Simulated results are validated against observational, reanalysis, and satellite datasets using statistical methods to evaluate model performance and improve understanding of extreme rainfall processes in complex terrain.

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Aditi Goel

Qualifications

MTech Remote Sensing & GIS (Satellite Image Analysis & Photogrammetry), B.Tech. (Computer Science Engineering); M.Sc. (Data Science)

Area of Interest

AI/ML/DL, Computer Vision, Data Science, Geographic Information Systems, Spatial Data Analysis, Non-Spatial Data Analysis, Visual Analytics, Web Scraping & Mining, Statistics, Mathematics, Search Engine Optimization (SEO), Digital Marketing, Content Writing & Blogging, Web Development

Software Skills

Python, R, Java, C, Prolog, SQL, NoSQL, HTML, Web Development Languages, SAS (Statistical Analysis Software), Hadoop, Apache Spark, Hive, ERDAS, ENVI, QGIS, ArcGIS, Blender, TinkerCAD, Tableau, Gretl, PowerBI, MS Office, Google Earth Pro, MySQL, Oracle, PostgreGIS, Canvas, Camunda, Tomcat Apache

Thesis

Evaluating Effectiveness of Transfer Learning Approach using ML/DL Models for Poppy/Aromatic Crop Mapping

Abstract

Mapping and monitoring poppy and aromatic crops is crucial for regulatory compliance, sustainable agriculture, and resource management. Remote sensing data combined with learning-based techniques offer promising solutions for this task. This research has leveraged machine learning and deep learning techniques, implementing transfer learning approach and super-resolution of lower resolution imagery, to accurately map poppy and aromatic crops at the field level. By utilizing temporal satellite imagery, the study has investigated the impact of temporal variations to counter spectral overlap between crops, ISM approach for handling heterogeneity, and the effectiveness of transfer learning in different scenarios to reduce training data requirements.

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Advaith C A

Qualifications

M. Tech in Remote Sensing & GIS (Satellite Image Analysis & Photogrammetry)., B. Tech in Computer Science Engineering

Area of Interest

Remote Sensing and Geospatial Analysis, Image Processing and Enhancement Algorithms, Machine Learning and Deep Learning for Satellite Imagery, Generative AI and Adversarial Networks, Multispectral and Hyperspectral Image Fusion, Software Development for GIS Applications, Change Detection and Land Use/Land Cover Analysis

Software Skills

Python, R, C, C++, Java, JavaScript, ReactJS, Django, Streamlit, Folium, Leaflet, QGIS, ENVI, ERDAS Imagine, eCognition, Orfeo Toolbox, Google Earth Engine, PyTorch, TensorFlow, SQL (MySQL, SQLite), NoSQL (MongoDB), Google Cloud Platform, Git, Bash, Linux (Debian-based, Arch-based), Windows Command Line

Thesis

Deep Learning Based Urban Land Use Land Cover Change Detection using Multi-Sensor Remote Sensing Data.

Abstract

Change Detection is a critical component in remote sensing, it offers insights into the dynamic nature of environmental, urban and ecological transformations. The aim of this study is to devise a framework for Automatic Change Detection that leverages deep learning techniques to extract different classes from multi-temporal images using features provided by multi-sensor inputs (Optical, SAR, Thermal, Elevation etc.) and detecting changes within classes with a concentration on Urban Built-up areas. The study area chosen for analysis is Delhi.

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Ajoy Karmakar

Qualifications

M.Tech in Remote Sensing & GIS (Forest Resources & Ecosystem Analysis), M.Sc. in Environmental Sciences, B.Sc. in Zoology

Area of Interest

Forest Carbon, In Situ Carbon Accounting, Vegetation Productivity, Carbon Flux, Climate Change, Biosphere-Atmosphere Interaction, Dynamic Global Vegetation Model, Forest Fire, Eddy Covariance, Geoecology

Software Skills

Python, R, CDO, GrADS,, ERDAS Imagine, ENVI, SNAP, 3D Forest,Google Earth Engine (JS & Python API),ArcGIS, QGIS

Thesis

Impact of fire on carbon flux in north-western Himalaya.

Abstract

This study investigates carbon flux dynamics in the North-Western Himalaya using an integrated approach combining remote sensing, in situ measurements, and land surface modeling. The research evaluates the impact of forest fires on carbon flux, focusing on spatial and temporal variability, to enhance understanding of ecosystem responses to climatic and anthropogenic factors in this ecologically sensitive region.

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Akanksha

Qualifications

M.Tech Remote Sensing & GIS (Agriculture and soils), B.Sc. Agriculture (Hons.)

Area of Interest

AI/ML in crop monitoring and assessment, polarimetric SAR, Interferometric SAR, yield estimation, soil health assessment, Drought assessment, Agrometeorology, Agri-informatics

Software Skills

Python, R, Google Earth engine, ERDAS, ENVI, QGIS, ArcGIS, MS Office, Google Earth Pro, MIDAS, SNAP.

Thesis

Crop Biomass assessment Using PolSAR and InSAR Techniques with Multisource RS.

Abstract

The research project aims to leverage the potential of PolSAR, InSAR, and multisource remote sensing techniques for accurate crop biomass estimation in the Dehradun Valley. By integrating data from diverse platforms like Sentinel-1, Sentinel-2, and EOS-04, we aim to develop robust models for crop classification and biomass assessment. Through rigorous analysis and machine learning techniques, while seeking to establish correlations between crop field parameters, remote sensing data, and biomass. This research holds the potential to enhance agricultural management practices and contribute to sustainable agricultural development in the region.

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Akkapathri Percy Rebekah

Qualifications

M.Tech in Remote Sensing & GIS (Forest Resources & Ecosystem Analysis), B.Sc. (Hons) Forestry

Area of Interest

Biodiversity assessment and conservation, Diversity Modelling, Forest Spatial Ecology, Climate change, Environmental Impact Assessment, Biodiversity metrics, Data science and research methodology, Habitat Suitability Analysis, Machine learning, Forest fire Impact Assessment, Greenhouse gases

Software Skills

R, Python, ArcGIS, QGIS, ERDAS Imagine, SNAP, ENVI, Fragstats, MaxEnt, PC-ORD, PAST, DINAMICA EGO, 3D Forest, Google Earth Engine
, R, Fortran, IDL, NumPy, Mintpy, GDAL, MATLAB, ADCIRC, ArcGIS, QGIS, HEC-RAS, HEC-HMS, SNAP, ERDAS Imagine, SMS Aquaveo, ENVI, AERMOD, GrADS, SPSS, Google CoLab, Google Earth Engine

Thesis

Assessing influence of environmental variability on spatial patterns of Western Himalayan alpine plant diversity using field inventory and Earth Observation data

Abstract

The Himalayan alpine plant diversity is fascinating yet threatened by climate change and land-use shifts. This study examined spatial heterogeneity in plant diversity and its environmental drivers using field inventory data, terrain, soil, climate variables, and Sentinel-2 remote sensing proxies in the Western Himalaya. Machine learning models (Random Forest, Generalized Boosting Model, Generalized Dissimilarity Model) and multivariate analyses (NMDS, CCA, SDM) were applied to assess biodiversity patterns. The findings highlight key environmental factors shaping biodiversity and identify hotspots for conservation and ecosystem management.

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Ananya Kar

Qualifications

M.Tech Remote Sensing & GIS (Urban and Regional Studies), B. Arch

Area of Interest

Urban Studies, Urban Microclimate, UHI, Data Driven Urban Management, Automation, Machine Learning & Data Science, WebGIS, Climate Change Studies, Urban Climatology, New and Renewable Energy, Urban Growth Modelling, Urban Utility and Services Management, Smart Cities, Urban Transport

Software Skills

ArcGIS, QGIS, ArcGIS Pro, ERDAS Imagine, Google Earth Engine, ENVI, SNAP, R Studio, Python, Google Earth Pro, Google Colab, Matlab, eCongition, IDRISI Tiaga, Microsoft Office, AutoCAD, Sketchup, Revit, Enscape, V-Ray, Lumion, 3Ds Max, Photoshop, Power Bi, SQL, JavaScript, Java

Thesis

Simulating Urban Heating Parameters Using Machine Learning

Abstract

This study investigates urban thermal and pollution dynamics using machine learning, focusing on anthropogenic factors (population, nighttime lights, albedo, urbanization), climatic variables (air temperature, solar radiation, sensible and latent heat flux, evapotranspiration, relative humidity), and land-based factors (land cover, EVI, NDWI, soil moisture, elevation). A detailed urban land cover classification framework is developed using Object-Based Image Analysis (OBIA) for high spatial accuracy. Advanced statistical methods, including feature engineering and multivariate correlation analyses, inform predictive modeling. Long Short-Term Memory (LSTM) networks are applied for spatiotemporal forecasting of thermal and pollution patterns for 2028. By integrating multi-source geospatial data, this research provides critical insights for sustainable urban planning and climate resilience strategies.

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Ankush Charavande

Qualifications

MTech Remote Sensing & GIS (Natural Hazards and Disaster Risk Management), Integrated M.Sc. Environmental Science

Area of Interest

Hydrodynamic Modelling, Numerical Simulation of Coastal and Inland Flooding, Flood Risk Management, Flood Impact Assessment, Extreme Weather Monitoring, Climate Change, Coastal Hazard Assessment and Resilience Planning, GIS-Based Decision Support Systems

Software Skills

Python, R, Fortran, IDL, NumPy, Mintpy, GDAL, MATLAB, ADCIRC, ArcGIS, QGIS, HEC-RAS, HEC-HMS, SNAP, ERDAS Imagine, SMS Aquaveo, ENVI, AERMOD, GrADS, SPSS, Google CoLab, Google Earth Engine

Thesis

Assessment of Coastal Compound Flooding using Coupled Hydrodynamic Modelling Technique

Abstract

Tropical cyclone-induced flooding is a major threat to coastal regions, particularly in eastern India. This study examines coastal compound flooding caused by Cyclone Fani (2019) and Cyclone DANA (2024), focusing on the Odisha coast and Mahanadi River. The research integrates hydrodynamic (ADCIRC) and hydraulic (HEC-RAS) models to simulate storm surge, river discharge, rainfall, and tidal interactions. Coupled simulations provide a comprehensive flood inundation assessment, validated using tidal data, Sentinel-1A imagery, and CYGNSS GNSS-R data for real-time flood mapping. The study highlights the importance of coupled modeling for accurate flood prediction, emphasizing its role in enhancing flood risk management and preparedness in cyclone-prone regions, where compound flooding remains a critical challenge.

aparajitaghosh200@gmail.com

Aparajita Ghosh

Qualifications

M.Tech in Remote Sensing& GIS (Natural Hazard and Disaster Risk Management), B.sc in Geography, M.sc in Disaster Management and Climate Sustainability Studies.

Area of Interest

Glacier, Landslide, GLOF, ML, AI, DL

Software Skills

Python, ArcGIS, QGIS ,R ,GRADS Hec RAS and HEC HMS ,Google earth engine

Thesis

Degradation in Glacial lake Dynamics

Abstract

Permafrost is one of the ECVs and has immense climatic importance. Since it's a sub-surface phenomenon, it can't be traced directly from remote sensing or satellite imageries but due to its immense climatic and hydrological importance mapping of permafrost is of huge importance. Also climate change and increasing global temperature leads to degradation of permafrost which ultimately leads to changes in glacial lake dynamics which can accelerate the chances of glacial hazards such as GLOF. For this reason climatic variables and geological variables are taken in account for and modelled using statistical and machine learning model to map the permafrost and time series of satellite images is analysed to trace out changes in glacial lake dynamics.s

avijnan.iirs@gmail.com

Avijnan Das

Qualifications

M.Tech. in Remote Sensing & GIS (Marine and Atmospheric Science), M.Sc. in Geography (Cartography), B.Ed. (Social Science), B.Sc. (Hons.) in Geography

Area of Interest

Numerical Weather Prediction and Climate Modelling, Satellite and Conventional Weather Data Assimilation, Extreme Weather Event Forecasting, Satellite Meteorology, Hydrodynamic Modelling, Multi-model Coupling (Atmospheric, Hydrodynamic and Cryosphere Model), Climate Change Impact Assessment, Machine Learning

Software Skills

Python, R, Matlab, Bash Scripting, wrf-python, CDO, NCL, GrADS, GEE, WRF-ARW, WRFDA, HEC-RAS (2D), ArcGIS, QGIS, ERDAS-IMAGINE, SNAP, ENVI, J2000

Thesis

Impact assessment of ATMS data assimilation on Tropical Cyclone forecasting using Hybrid 3D-EnVar technique

Abstract

The accurate representation of initial atmospheric state in numerical weather prediction (NWP) models is vital for accurate weather forecasting. This study aims to address the issue by assimilating Advanced Technology Microwave Sounder (ATMS) data into the Weather Research and Forecasting (WRF) model using two advanced assimilation techniques i.e., 3DVar and 3DEnVar, which leads to comparative forecast accuracy assessment between them. Vortex-following nested domain was used to track tropical cyclones over the Bay of Bengal region. Forecasts, validated against ERA5 reanalysis and satellite observations, reveal that ATMS data assimilation, particularly with hybrid 3DEnVar technique, significantly improves forecast accuracy of cyclone track and intensity.

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Bhumika Vinod Shudrik

Qualifications

M.Tech in Remote Sensing & GIS (Forest Resources & Ecosystem Analysis), B.Tech in Biotechnology

Area of Interest

Biodiversity assessment, Ecological modelling, Spatial data analysis, GPP, SIF, Forest fire, Climate change, Machine Learning, & Biogeoinformatics

Software Skills

Python, C/C++, R, DSA, Google Earth Engine, QGIS, ArcGIS, SNAP, ERDAS Imagine, MaxEnt, GrADS, 3D Forest, ENVI, & AutoCAD

Thesis

Assessing multi-dimensional functional diversity of subtropical forests using Remote Sensing & Machine Learning

Abstract

Subtropical forests in India are shaped by varied environmental conditions, creating microhabitats that support unique plant communities, rich species diversity, and provide essential ecosystem services like nutrient cycling, habitat structure etc. This study aims to assess the multi-dimensional functional diversities (FDs) of subtropical forests using key structural/functional traits and explore linkages between FDs and ecosystem services like GPP. Multispectral (Sentinel-2), hyperspectral (PRISMA), and GEDI LiDAR data are being used to retrieve physiological and structural traits. Machine learning models (Random Forest, GAM, and GLM) are being applied to analyze spatial patterns of plant traits and use Rao's Q Index to quantify FDs at various spatial scales. Correlation analysis is being conducted to assess the relationship between FDs and ecosystem services and their importance.

catherinetheresa21@gmail.com

Catherine Theresa

Qualifications

M.Tech in Remote Sensing & GIS (Marine & Atmospheric Science), M.Sc Marine Sciences (Physical Oceanography), B.Sc (Hons.) in Physics

Area of Interest

Ocean circulation and dynamics, air-sea interaction, climate dynamics, carbon flux and pCO_2 variability, coastal and marine biogeochemical processes, ocean variability and climate change, ocean colour studies, oceanic time series analysis, ocean modelling.

Software Skills

Matlab, python, R, GraDs, CDO, ArcGIS, QGIS, ERDAS, ENVI, SNAP, Surfer, Grapher, OriginLab, MS Office

Thesis

Study on the pCO_2 and Air-Sea CO_2 flux variability over the Tropical Indian Ocean

Abstract

This study explores the variability of partial pressure of carbon dioxide (pCO2), and air-sea CO_2 flux, over the tropical Indian Ocean, a crucial region for global carbon cycling. By integrating ocean and climate models, satellite-derived and in-situ datasets, spatiotemporal patterns of pCO_2 are analysed alongside air flux to understand their relationship with sea surface temperature (SST), salinity, and biological productivity. Seasonal and interannual variations, driven by monsoonal dynamics and climatic phenomena like the Indian Ocean Dipole (IOD), are examined. The results provide insights into the region's role in carbon exchange, improving the understanding of air-sea interactions and carbon flux dynamics.

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Devraj Gogoi

Qualifications

M.Tech Remote Sensing & GIS (Geosciences), B.Sc in Geology, M.Sc in Geology

Area of Interest

Glacier dynamics, Disaster Risk Management, Geological Insights, Hydrological Modelling, Geological Mapping, Mass Balance and Glacier Monitoring, Glacial Geomorphology, Glacier-Climate Interactions

Software Skills

Python, MATLAB, IDL, Google Earth Engine, SNAP, ENVI, ERDAS, ArcGIS, QGIS, HEC-RAS, HEC-HMS, SWAT

Thesis

Assessment of debris cover impact on glacier-glacier lake dynamics and glacier hazards in Indian Himalaya

Abstract

This study focuses on the dynamics of debris-covered glaciers and their impact on glacier-lake formation and hazards in the Indian Himalayas. The project uses remote sensing (Landsat, Sentinel, ASTER) and field data to investigate how debris cover influences glacier melt rates, ice velocity, and the development of supraglacial lakes. The research aims to assess the role of debris in altering glacier mass balance and the likelihood of Glacial Lake Outburst Floods (GLOFs). A hydrological modelling approach will be employed, using HEC-HMS to simulate runoff and HEC-RAS for floodplain analysis, to evaluate the risks posed by these lakes under different climate scenarios. The study provides insights into glacier-lake dynamics and aims to improve hazard assessment and risk mitigation strategies for vulnerable downstream regions. This work integrates glaciology, hydrology, and remote sensing to offer a comprehensive understanding of glacier hazards in the Himalayan region.

eshna.singh10@gmail.com

Eshna Singh

Qualifications

M.Tech in Remote Sensing & GIS Urban & Regional Studies Department), Btech Architecture

Area of Interest

Remote Sensing & GIS, Urban and Regional Planning, LiDAR, Urban Growth Modelling, Urban Flood Mapping and analysis, LULC Prediction, Climate Change, Urban Flood Risk Mapping, Hydrological Modelling, Machine Learning

Software Skills

Python, ArcGIS, ERDAS, ENVI, Google Earth Engine, QGIS, Microsoft Office, eCongition, Blender, ArcGISPro, IDRISI taiga, TerrSet, SNAP, QSWAT, Arc SWAT, HEC-HMS, HEC-RAS, Revit, AutoCAD, Lumion, Sketchup, Adobe Designing Software's

Thesis

Modelling the Impact of Climate Change and Urban Expansion on Water Balance

Abstract

Climate change and urban expansion are increasingly altering the natural water balance in urban areas, posing significant challenges for water resource management and urban planning. This study investigates the synergistic impacts of climate change and urbanization on the water balance by integrating climate projections, land-use change scenarios, and hydrological modelling

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Ganithi Sandhya

Qualifications

M.Tech in Remote Sensing & GIS (Forest Resources & Ecosystem Analysis), B.Sc. (Hons) Forestry

Area of Interest

Wetland Carbon Dynamics, wetland Biomass, Wetland hydroperiod analysis, Forest carbon, Forest Biomass, Ecosystem services (InVEST Modeling), Machine Learning, Deep Learning, Climate Change studies , Heatwave analysis, Environmental Impact Assessment, Habitat Suitability Analysis, Forest fire Impact Assessment

Software Skills

ArcGIS, QGIS, ERDAS Imagine, Google Earth Engine, SNAP, ENVI, Python, R, Fragstats, MaxEnt, 3D Forest

Thesis

Unravelling the spatial and temporal carbon dynamics of Son Beel wetland,Assam

Abstract

Wetlands are vital carbon reservoirs, storing organic carbon over long periods, but they face threats from both natural and human-induced activities. This study focuses on the spatio-temporal carbon dynamics of Sonbeel wetland in Assam, India, Asia's second-largest freshwater wetland. The research aims to analyze these dynamics on seasonal and annual scales, develop predictive models using multi-sensor Earth observation data and deep learning techniques, and apply the InVEST model to estimate both historical and future carbon storage. It also evaluates the impact of various drivers on carbon dynamics. The findings emphasize Sonbeel's role in climate change mitigation, highlighting the importance of sustainable management for balancing ecological integrity and carbon dynamics. This study is the first of its kind in India to model wetland carbon storage and analyze source/sink dynamics.

gautamd1224@gmail.com

Gautam Dubey

Qualifications

M.Tech in Remote Sensing & GIS (Geosciences), M.Sc. in Geology, B.Sc. with (Physics, Math, Geology)

Area of Interest

Landslide Hazard Mapping, Slope Stability Analysis, Remote Sensing and GIS Applications, ML, Terrain Analysis, Machine Learning, Disaster Risk Reduction, and Predictive Modeling

Software Skills

Google Earth Engine, QGIS, ArcGIS, ERDAS Imagine, ENVI, SNAP, ILWIS, RAMMS: Rockfall, RAMMS: Debrisflow, Rocscience – RS-2, Rocscience –SLIDE2 CorelDraw,

Thesis

Large scale mapping, slope stability characterization and predictive modelling of selected most vulnerable landslides of Northeast part of Kerala

Abstract

This study aims to enhance landslide hazard assessment in Wayanad District, Northern Kerala, by integrating remote sensing, geotechnical analysis, and predictive modeling. Satellite-based mapping of active, old, and stabilized slopes, along with change detection, reveals their evolution and potential for future instability. Geological and geophysical factors, such as lithology, structure, slope, and rainfall, are analyzed to understand the conditioning and triggering factors behind landslides, supporting the development of a Landslide Early Warning System (LEWS). Geotechnical aspects uses Finite element methods (FEM) and Rock Mass Rating (RMS/SMR) to assess spatial variations in Factor of Safety (FoS), identifying high-risk areas. Predictive numerical modeling of landslide run-out and geophysical parameters such as mass, momentum, runout length etc enhances risk preparedness, enabling effective mitigation strategies for future events.

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Isha Singhal

Qualifications

M.Tech in Remote Sensing & GIS (Geoinformatics), B.Tech in Computer Science & Engineering

Area of Interest

Artificial Intelligence, Machine/ Deep Learning, Computer Vision, Web Development, 3D GIS, Web GIS, Generative AI, Data Analytics, Statistics, Data Science, Digital Image Processing

Software Skills

Python, C/C++, JavaScript, R, Google Earth Engine, QGIS, ArcGIS, MySQL, PostgreSQL, HTML, CSS, Flask, PHP

Thesis

Building Extraction from Multispectral Images using Deep Learning and Generative AI

Abstract

Extracting buildings from high-resolution remotely sensed images is highly significant in geospatial analysis, supporting applications such as land use and land cover evaluation and urban morphology monitoring. This work aims to assess the performance of the latest deep learning (DL) algorithms for building extraction in both planned and unplanned urban areas, with a focus on convolutional neural networks (CNNs) and generative adversarial networks (GANs).

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Iswarya Muralidharan

Qualifications

M.TECH in Remote Sensing & GIS (Satellite Image Analysis & Photogrammetry), BE- (Electronics)

Area of Interest

Python, Machine Learning, Digital Image Processing, Embedded Systems

Software Skills

Arcgis, Qgis, Google Earth Engine, ENVI, ERDAS, SNAP,Python, Embedded C

Thesis

Estimation of $PM_{2.5}$ from satellite data using Machine Learning

Abstract

Air pollution, particularly $PM_{2.5}$, poses severe risks to public health and the environment. Ground monitoring stations provide accurate $PM_{2.5}$ data but lack extensive spatial coverage, especially in developing areas. Satellite remote sensing offers a broader alternative, capturing large-scale data. This study estimates $PM_{2.5}$ using satellite data combined with machine learning (ML) techniques. Key datasets include Aerosol Optical Depth (AOD) from MODIS and Sentinel-5P, meteorological variables like ERA5, and land-use data, integrated with ground $PM_{2.5}$ measurements. ML models like Random Forest , Gradient Boosting demonstrated high accuracy in capturing spatial- temporal trends. Enhanced by multi source data fusion, the findings highlight ML's potential in satellite- based air quality estimation, aiding policymakers in addressing air pollution in under monitored regions.

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Jageeta Mahata

Qualifications

M.Tech in Remote Sensing & GIS (Water Resources)
B.Tech (Agricultural Engineering)

Area of Interest

Satellite Altimetry: Spaceborne Lidar, ML/DL for Geospatial application, River and Near-shore Bathymetry, Hydrological and Hydrodynamic modelling, Ground water modelling, Geospatial modelling for Water Resource Management, Disaster Management, Watershed Development, Watershed Prioritization, Satellite Altimetry, Water quality mapping and monitoring, Climate change

Software Skills

Python, R, ArcGIS, QGIS, ERDAS, ENVI, SNAP, SWAT, HEC-HMS, HEC-RAS, CROPWAT, ILWIS, SWMM, EPANET, BRAT, MODFLOW, Google Earth Engine, Blender, AutoCAD, Microsoft Office

Thesis

Integration of multispectral and laser derived Digital Bathymetry Elevation Model (DBEM) in hydrodynamic model

Abstract

Satellite data for river bathymetry is essential for efficient, cost-effective monitoring of riverbeds, particularly in remote areas. It improves flood management, sediment analysis, and environmental conservation. This research aims to extract river bathymetry data from point cloud data: ICESat-2. The primary objective is to generate satellite derived bathymetric Dem (SDB_{Dem}) using digital bathymetric elevation model in cooperated with ML and DL and using SDB_{Dem} in hydrodynamic modelling for improve discharge estimation.

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Kartikey Pandey

Qualifications

M. Tech in Remote Sensing & GIS (Urban and Regional), MBA(Projects Management), NICMAR EPGPACM, B. Tech(Civil)

Area of Interest

Air Pollution Monitoring, Climate Adaptation & Mitigation, Critical Infrastructure, Urban Studies, Urban Microclimate, Solar Potential, UHI, Chemical Transport Studies

Software Skills

ArcGIS, QGIS, ERDAS Imagine, GEE, ENVI, SNAP, R Studio, Python, , WRF-ARW, NCL, eCongition, GrADS, Blender, Fragstats, IDRISI Tiaga, HEC-HMS,Meteoinfo, AutoCAD, Sketchup, Revit, Enscape, V-Ray, ETABS, StaadPro, Lumion, Navisworks, Tekla Structures, Microstation, BIM 360, Civil 3D, 3Ds Max, Power Rail, Open Designer

Thesis

Source Apportionment Study of Criteria Air Pollutants in Agra Airshed

Abstract

Agra, a prominent city in India, faces severe air pollution challenges, with criteria air pollutants significantly affecting public health and heritage structures, including the iconic Taj Mahal. This study focuses on the source apportionment of criteria air pollutants (PM10, PM2.5, NOx, SO2, CO) in the Agra airshed for the year 2023.Ambient air quality data were collected from monitoring stations across the airshed, supplemented with meteorological data from the Weather Research and Forecasting (WRF) model. Emissions from transport, industries, biomass burning, construction activities, and domestic sources were estimated using the latest activity data and emission factors specific to India. The WRF-Chem model was employed for source attribution, calibrated using local measurements and validated against observed pollutant concentrations.

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Kepsiba D

Qualifications

MTech in Remote Sensing & GIS (Natural Hazards and Disaster Risk Management); B.E. Geoinformatics

Area of Interest

Spatial Data Analytics, Image Processing, Web GIS, ML, DL, Gen AI, LLM for GIS, Multi-hazard susceptibility analysis, predictive analysis for floods, landslides & forest fires.

Software Skills

ArcGIS, QGIS, Erdas Imagine, ENVI, GEE, SNAP, HEC-HMS, HEC-RAS, Blender, PostGIS, Geoserver, Python, HTML, CSS, Vue.js, Three.js, Langchain, RAG.

Thesis

Multi-hazard susceptibility spatial decision analysis using Generative AI based Large Language Model (LLM) for disaster prone areas in Uttarakhand

Abstract

This research investigates the application of Generative AI-based Large Language Models (LLMs) to enhance spatial decision-making and enable intelligent spatial querying within Web GIS for disaster-specific applications. By integrating agentic LLMs into traditional Geographic Information System (GIS) workflows, the research introduces advanced methodologies for improved geospatial analysis. The approach utilizes multi-hazard datasets, including landslides, floods, and forest fires, to identify vulnerable areas, susceptible regions and prioritize mitigation efforts. The study emphasizes the capability of LLMs to understand natural language, process complex geometrical datasets, produce precise spatial maps for rapid decision making. This innovative framework serves as a powerful tool for policymakers and disaster management teams, aiming to strengthen resilience and reduce risks in complex environments.

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Korremula Sharath Kumar Chari

Qualifications

MTech in Remote Sensing & GIS (Geoinformatics); BTech Civil Engineering

Area of Interest

ML/DL approaches on Rainfall prediction, Geospatial analysis, Statistical Analysis, Site Suitability Analysis, 3D Modeling, Web GIS, GIS Applications

Software Skills

ArcGIS, QGIS, ERDAS Imagine, Python, R, Google Earth Engine, Geoserver, Mapstore, Blender, AutoCAD, ML, DL, PostGIS

Thesis

Comparative Analysis of Various Algorithms for Downscaling Rainfall Data for Uttarakhand

Abstract

Indian Meteorological Department (IMD) provide the rainfall data in coarser resolution of 25 km it is less useful for localized prediction. So the main objective of this study is to create a high resolution of 10 km rainfall maps for July 2023 in Uttarakhand, using AWS point rainfall data along with Elevation and NDVI as Auxiliary data as additional inputs. Here in this study we are going to perform Deterministic, Stochastic and Deep Learning methods to generate the rainfall map of 10 km resolution which will predict the rainfall accurately. This will helpful in the agriculture and disaster management which will give accurate rainfall information.

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Madhavan S

Qualifications

M. Tech in Remote Sensing & GIS (Specialization: Satellite Image Analysis and Photogrammetry), B.E Civil Engineering

Area of Interest

Machine Learning & Deep Learning, Digital Twin, Drone Technology, 3D Mapping & Modelling, Photogrammetry, LiDAR Remote Sensing, Point Cloud Data Processing, Satellite Image Analysis, Feature Extraction, Heritage Building Information Modelling (HBIM)

Software Skills

Python, MATLAB, Quantum-GIS, ArcGIS, ERDAS Imagine, ENVI, eCognition, Google Earth Engine, AutoCAD, CloudCompare, Bently ContextCapture, Pix4D, Agisoft Metashape

Thesis

Deep Learning Based Semantic Segmentation of Point Cloud for Historic Building Information Modelling.

Abstract

Historic Building Information Modelling (HBIM) plays a vital role in preserving cultural heritage sites by documenting their architectural features. However, current workflows are predominantly manual and inefficient. Point cloud data has emerged as a promising tool for automating HBIM processes, but challenges persist due to the unstructured nature of point clouds. This research addresses these limitations by developing a benchmark dataset for semantic segmentation of point cloud data specific to Indian Nagara temple architecture. The dataset enables the classification of elements such as walls, Mandapa, Garbhagriha, Shikhara, and Amalaka, streamlining HBIM workflows. By employing advanced deep learning algorithms, the study automates segmentation and facilitates the development of HBIM models. This innovative approach improves 3D modelling and data management, addressing key gaps in automation for conserving India's unique architectural legacy.

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Mansi Rautela

Qualifications

M. Tech in Remote Sensing & GIS (Urban and Regional Studies), M.Sc. (GIS & Remote Sensing), B.Sc. (Geology, Physics, Mathematics).

Area of Interest

Remote Sensing & GIS, Thermal Remote Sensing, SAR Interferometry(InSAR), OBIA, Time series analysis, Urban Subsidence, SAR application in Land Subsidence Studies, Urban Studies, Urban Planning, Urban growth, Urban Disaster Management, Urban Heat Islands, DEM, LiDAR

Software Skills

ArcGIS, ArcGIS Pro, QGIS, ERDAS Imagine, Google Earth Engine, Google Earth Pro, ENVI, SNAP, ENVI-SRRscape, SARPROZ, PolSAR Pro, MintPy, RStudio, Python, eCongition, IDRISI Tiaga, MS Office

Thesis

Persistent Scatterer Interferometry SAR-Based Urban Land Subsidence Analysis

Abstract

This research aims to study urban land subsidence caused by groundwater extraction, which poses significant environmental challenges and impacts infrastructure integrity and socio-economic stability. Traditional monitoring techniques are costly and spatially limited. To address this, Synthetic Aperture Radar (SAR) interferometry, specifically Persistent Scatterer Interferometry (PSI), is utilized to achieve millimeter-scale accuracy in mapping and monitoring subsidence over 10 years. A framework integrating multiple parameters for Persistent Scatterer selection is developed to enhance detection and analysis. The findings reveal a strong correlation between groundwater extraction and subsidence, providing critical insights for sustainable urban planning and resource management.

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Mitesh Kumar Jha

Qualifications

M. Tech. in Remote Sensing & GIS (Agriculture and Soils) , B.Sc. (Hons.) Agriculture

Area of Interest

Digital Soil Mapping, Land Suitability Analysis, Digital Terrain Analysis, Precision Agriculture, Geostatistics, Crop Inventory and Assessment, Crop Biophysical parameter retrieval, Crop acreage estimation, Crop condition monitoring and assessment, Geospatial Modeling using FOSS, Analytical Cartography, 3D Geo-visualization, Web Visualization, WebGIS, BPMN

Software Skills

Python, R, Google Earth Engine, Dash, Leaflet, QGIS, SAGA GIS, WhiteboxTools, SNAP, ArcGIS, ERDAS IMAGINE, ENVI, Blender, Camunda, MS Office, Adobe InDesign, LibreOffice

Thesis

Geospatial Modeling for Land Suitability Analysis of Medicinal and Horticultural Crops using Machine Learning Methods

Abstract

This study analyses land suitability with special focus on medicinal and horticultural crops in the Lower Himalayan Region. The study involves integration of Remote Sensing data analysis, Digital Soil Mapping (DSM) methods, and Machine Learning (ML) in geospatial modeling for assessing crop suitability on spatially explicit basis.

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Nibha Kumari

Qualifications

M.Tech in Remote Sensing & GIS (Satellite Image Analysis and Photogrammetry), B-Tech (Electronics and Communication Engineering)

Area of Interest

Airborne and Spaceborne SAR Processing, Land Subsidence Monitoring using SAR interferometry, Polarimetric Calibration, Low-Voltage Low-Power CMOS circuit design, Quality Control Management, Lean Manufacturing

Software Skills

C++, Python (GDAL, OpenCV, Geopandas, matplotlib, Rasterio, PIL, Folium, Basemap, etc.), MATLAB (Image Processing, Camera Calibration, Wavelet Analyzer, Signal Processing), ERDAS, QGIS, ArcGIS, Blender, City Engine, Leica Photogrammetry Suite, SNAP, eCognition, ENVI, Cadence Virtuoso, MS Office

Thesis

Development of Methodological Framework for Analyzing Polarimetric Distortions in EOS-04 and LS_ASAR Dataset

Abstract

Polarimetric Synthetic Aperture Radar (PolSAR) provides high-resolution images of Earth's surface under all weather conditions. However, distortions such as crosstalk, channel imbalance, phase bias, faraday rotation and system noise degrade data quality, reducing the reliability of scattering-based interpretations. Polarimetric calibration is thus an important pre-processing step for accurate feature interpretation. This thesis evaluates the reliability of existing algorithms like Improved Quegan, Improved Ainsworth and Villa's Approach on EOS-04 and ISRO L- & S-band ASAR datasets. Additionally, it proposes a comprehensive framework to estimate and minimize all distortion parameters within a single model using distributed target and corner reflectors. The framework ensures retrieved polarimetric distortion parameters fall within acceptable ranges, enabling accurate ground target characterization in SAR imagery.

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Nilay Dey

Qualifications

M.Tech in Remote Sensing & GIS (Water Resources Department), B.Tech. in Agricultural Engineering

Area of Interest

Water Resources management including Hydrodynamic modelling, Water quality assessment through Remote Sensing, Machine Learning and modelling, Flood modelling, Flood susceptibility analysis, GLOF simulation and analysis, Agricultural Water Resource management through Irrigation mapping, climate change assessment

Software Skills

Python language, HEC-RAS, HEC-HMS, GEE, ArcGIS, ArcGIS Pro, Q-GIS, ERDAS Imagine, R-Studio, Google Earth Pro, MS Excel, MS Word

Thesis

Integration of ML-derived Water Quality Parameters in Hydrodynamic Model for Water Quality Assessment

Abstract

This study examines water quality parameters in the Ganga River from Prayagraj to Varanasi using Sentinel 2A imagery. Optically active parameters were extracted and predicted through machine learning algorithms. Additionally, a one-dimensional hydrodynamic model was developed to simulate both optically active and inactive water quality parameters. The findings enhance the understanding of water quality dynamics and demonstrate the effectiveness of integrating remote sensing, machine learning, and hydrodynamic modeling in environmental monitoring

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Nitish Kumar Singh

Qualifications

M.Tech in Remote Sensing & GIS (Forest Resources & Ecosystem Analysis), M.Sc in Botany, B.Sc (Hons.) in Botany

Area of Interest

Solar-Induced Fluorescence (SIF), Photosynthetic Efficiency, Forest Productivity, Tropical Forest Dynamics, Climate Change, Eddy Covariance, Diurnal and Seasonal Variability, Climate Modeling, Machine Learning, Satellite Data Fusion

Software Skills

Python, Julia, R Programming, CliMA ESM, GEE, ArcGIS, QGIS, SNAP, Radiative Transfer Model (RTM), ERDAS Imagine, Maxent, Microsoft Office Suite

Thesis

Diurnal and Seasonal Variability of SIF, VI's, And GPP in Tropical Deciduous Forests using Process-based Model and Satellite SIF Observations

Abstract

Diurnal and seasonal variability of Solar-Induced Fluorescence (SIF), Gross Primary Productivity (GPP), and Vegetation Indices (VIs) in forest ecosystems is analyzed using the CliMA Earth System Model (ESM) and eddy covariance flux tower data. A satellite data fusion approach integrates geostationary (INSAT-3DR) and orbital (OCO-3) SIF observations to enhance prediction accuracy using machine learning to estimate SIF at both diurnal and seasonal scales, offering insights into forest carbon and water fluxes. The work advances SIF estimation and machine learning applications in remote sensing, contributing to ecological monitoring and improved understanding of forest ecosystem dynamics.

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Om Singh Lilhare

Qualifications

M.Tech in Remote Sensing & GIS (Satellite Image Analysis and Photogrammetry), B. Tech Civil, PG Diploma Geoinformatics,

Area of Interest

Remote Sensing, Deep Learning, GIS, Scan-to-BIM, Archeology

Software Skills

ArcGIS, ArcSWAT, QGIS, ERDAS Imagine, ENVI, SNAP, R Studio, Python, Google Earth Pro, eCongition, Blender, STAADpro, StaadPro, Context Capture, Oracle, PostgreSQL

Thesis

Synergistic use of Multi-Sensor Data for Damage Detection in Heritage Structures using Deep Leaning Method

Abstract

This study explores the synergistic use of multi-sensor data and deep learning techniques for damage detection in cultural heritage structures. Using advanced DL models, including CNN architectures, the research aims to enhance the assessment of damages like cracks, deterioration, material losses, and vegetation growth. Multiple sensors, including optical, thermal and LiDAR are integrated to overcome the limitations of individual modes, offering a comprehensive understanding of structural conditions. The study develops a robust framework, curates diverse datasets, and evaluates deep learning architectures for their effectiveness in multi-sensor damage detection. The findings aim to contribute in preserving heritage structures by providing scalable, automated solutions to assess and moderate structural vulnerabilities efficiently.

pn72001@gmail.com

Parthiv Narayan

Qualifications

M.Tech. in Remote Sensing & GIS (Forest Resources and Ecosystem Analysis), B.Sc. (Hons.) in Forestry – Gold Medalist

Area of Interest

Forest (Inventory, Utilization, Disturbance Mapping, Biomass Modelling); Species Distribution Modelling; Machine Learning, Deep Learning; Very High-Resolution Satellite Data Handling, Passive Microwave Remote Sensing

Software Skills

Python, R, GrADS, ArcGIS, GEE, QGIS, ERDAS IMAGINE, MaxEnt, ENVI, Fragstats, 3D Forest

Thesis

Forest Disturbance and Biomass Mapping Using Earth Observation Data

Abstract

The study aims at developing a CNN based deep learning model for mapping the microlevel forest disturbances in the Western Himalaya using very high-resolution earth observation data. This approach integrates forest inventory techniques to improve accuracy and diversify the applicability of the model. At the same time the study also finds an approach to assess the sensitivity of the passive microwave data derived vegetation optical depth to forest structure and biomass. It further extends its horizon in determining the macro scale biomass at the total Indian region.

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Pavithra S L

Qualifications

M. Tech Remote Sensing & GIS (Natural hazard and Disaster Management), B.Tech in Civil Engineering

Area of Interest

Civil Engineering, Infrastructure Health Monitoring, Water resources, Ground water, Traffic volume survey, Remote Sensing, Survey, Structural engineering, Transportation Engineering, EIA.

Software Skills

Python, Linux, MintPy, EZ-InSAR, PYGMTSAR, AutoCad, ERDAS Imagine, ENVI, SNAP, ArcGIS, QGIS, Revit Architecture, STAAD pro, MCDM

Thesis

InSAR based Infrastructural Health monitoring Of Sardar Sarovar Dam, Gujarat

Abstract

This study employs two advanced InSAR techniques - SBAS and PSInSAR - to monitor the Sardar Sarovar Dam infrastructure in Gujarat, India. Using Sentinel-1 dataset and multi-model atmospheric correction, the research analyzes dam structure and reservoir capacity impacts. While SBAS provides surface time series deformation data, PSInSAR yields both velocity and time series displacement measurements, proving more effective for dam safety monitoring due to its precise detection of small deformations. The study demonstrates the value of integrating InSAR techniques in dam health monitoring, establishing a foundation for future infrastructure management.

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Pooja Verma

Qualifications

M. Tech Remote Sensing & GIS (Water Resources Department), B. Tech Geo Civil

Area of Interest

Satellite data processing, Hydrological and Hydrodynamic modelling, flood mapping, Water body mapping, Reservoir sedimentation, Soil erosion.

Software Skills

Arcmap, QGIS, ERDAS IMAGINE, SNAP, Google earth Pro, GEE, Hec-Ras

Thesis

Active and Old floodplain delineation using Remote Sensing, Geophysical survey and Modelling approach.

Abstract

Floodplains, situated along riverbanks, play a vital role in mitigating floods and recharging groundwater. This study focuses on identifying and mapping active and old floodplains of the Ghaggar River in the arid and semi-arid regions using multi-sensor satellite imagery, including optical, thermal, and microwave datasets. The study area, comprising Punjab and Haryana, is among the most flood-prone regions, where SAR datasets significantly enhance the effectiveness of flood inundation mapping. By integrating hydrodynamic modeling with GIS, this research assesses flood depth and discharge, providing a comprehensive understanding of flood dynamics. Ground truthing using GPR and ERT ensures validation of the identified floodplains. Ultimately, this work aims to support sustainable groundwater recharge and flood risk mitigation through floodplain mapping.

rajiblochanram11@gmail.com

Rajib Lochan Ram

Qualifications

M. Tech in Remote Sensing & GIS (Specialization: Natural Hazards and Disaster Risk Management), B. Plan (Urban and Regional Planning)

Area of Interest

Extreme Events Simulation, Urban Microclimate, Urban Morphology, , Urban and Regional Planning, Flood inundation studies, Hazard risk assessment

Software Skills

ArcGIS, QGIS, ERDAS Imagine, Google Earth Engine, Python, Google Earth Pro, WRF-ARW, HEC-RAS, AutoCAD, MS Office

Thesis

Simulation of Extreme Weather Events by integrating gridded Urban Morphology Parameters in High-Resolution Urban Weather Simulation Model

Abstract

This study focuses on simulating extreme weather events in Delhi using Urban Morphology Parameters (UMPs) integrated into the Weather Research and Forecasting (WRF) model. UMPs, derived from Very High-Resolution Satellite (VHRS) data from Pleiades and global datasets such as UT Globus and the Global Human Settlement Layer (GHSL), provide a detailed representation of urban environments. The objectives include computing and evaluating UMPs from these datasets, assessing WRF model performance with gridded UMPs, and quantifying urban weather variables during extreme events. By bridging the gap between coarse global datasets and high-resolution VHRS data, this research offers insights into the influence of urban morphology on microclimate simulations, aiding in the development of adaptive strategies for climate-resilient urban planning.

remitha10042001@gmail.com

Remitha K R

Qualifications

M.Tech in Remote Sensing & GIS with (Water resources), B.E Agriculture Engineering

Area of Interest

Hydrological models, Hydrodynamic models, Surface water hydrology, Irrigation water management, Machine learning, Deep learning, Spaceborne LiDAR remote sensing

Software Skills

ArcGIS, QGIS, ERDAS imagine, ENVI, HEC-HMS, HEC-RAS, ILWIS, VIC, SWAT, EPANET, SWMM, Python, C, Google Earth Engine, Geo-server, Blender

Thesis

Understanding the effect of basin storage & irrigation on hydrological regime of a river basin

Abstract

Hydrological models are essential for simulating the hydrological responses of a watershed, aiding in the management of these responses and the basin's water resources. The Variable Infiltration Capacity (VIC) model is a reliable and consistent tool for representing hydrological parameters at a large scale. Irrigation, as a key factor, influences evapotranspiration and the diversion of water for irrigation, which in turn affects the basin's storage and overall water balance. However, most models often exclude the effects of irrigation on the water balance. Only a few studies have incorporated irrigation impacts into hydrological models. Therefore, this study integrates the VIC model with basin storage and irrigation effects in the Ganga Basin, where multiple irrigation projects significantly influence the water balance.

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Ritobina Biswas

Qualifications

M. Tech in Remote Sensing & GIS (Urban and Regional Studies), M.Sc. in Geography (specialisation in Urban Geography), B.Sc. Hons in Geography

Area of Interest

Urban Studies and Planning, Urban Microclimate, UHI, Urban Green Spaces, Urban Biodiversity, Geospatial Analysis, Urban Walkability, Gender Rights- Right to the City, Urban Gender Crimes, Urban geography, Climatology & Oceanography, Geomorphology

Software Skills

ArcMap, Arc GIS Pro, QGIS, ERDAS Imagine, Google Earth Engine, ENVI, SNAP, R Studio, Python, Google Earth Pro, eCongition, GrADS, Fragstats, GRAPHAB, MAXent, IDRISI Tiaga, HEC-HMS Plugin

Thesis

Integrating Earth Observation based data for Spatial Urban Biodiversity Assessment

Abstract

Rapid urbanization in Indian cities has led to the loss of green spaces, harming natural habitats and reducing biodiversity. This trend, driven by population growth and infrastructure demands, heightens climate change risks, such as extreme weather events. While global efforts like Singapore's Green Plan have advanced urban biodiversity, research in India remains fragmented. This study addresses this gap by exploring the role of structural and functional diversity in urban green spaces—parks, gardens, and urban forests—in supporting species richness and ecosystem resilience. Using Earth Observation (EO) data alongside ecological and social assessments, it aims to inform urban planning strategies that enhance biodiversity and urban resilience in the face of environmental challenges

sajayiirs@gmail.com

SAJAY S S

Qualifications

M.Tech in Remote Sensing & GIS (Marine and Atmospheric Sciences), Integrated MSc in Applied Geology

Area of Interest

Impacts of Climate Change on Oceans and Coastlines, Coastal Geomorphology and Vulnerability Assessment, Air-Sea Interaction, Seismological Techniques for Earth's Crust and Mantle Analysis, Reservoir Characterization and Hydrocarbon Potential Analysis

Software Skills

MATLAB, Python, R, QGIS, ArcMap, ArcGIS PRO, Google Earth Engine, Google Earth Pro, ERDAS Imagine, ENVI, GrADS, ILWIS, Panoply, SNAP, CDO

Thesis

Study of Shoreline Change & Sea Level Budget Analysis: A Case Study for the East Coast of India

Abstract

The dynamic interplay of natural and anthropogenic factors has a profound impact on the coastal regions of the east coast of India. Factors such as thermal expansion, glacial melt, and oceanic processes influence shoreline changes, leading to erosion and accretion. Additionally, variations in temperature and salinity patterns at different depths reflect complex interactions between freshwater influx and ocean dynamics. Understanding these processes is essential for effective coastal resource management, biodiversity conservation, and the development of strategies to mitigate the socio-economic impacts of climate change. This work underscores the importance of integrating advanced geospatial analysis and multi-temporal data to address critical coastal challenges and support sustainable development initiatives.

sam18102001@gmail.com

Samanyu Gaddam

Qualifications

MTech in Remote Sensing & GIS (Geoinformatics); BTech in Geoinformatics

Area of Interest

WebGIS, Cloud GIS-Serverless technology, ArcGIS enterprise, FOSS4G tools, Geoprocessing and analysis using Python and R, Image processing and analysis, Spatial data handling and Modelling- SDBMS(PostGIS), Machine Learning, Geostatistics, General GIS applications

Software Skills

ArcGIS products, QGIS, ERDAS Imagine, SNAP, Python, R, PostgreSQL/PostGIS database, Google Earth Engine, Geoserver, WebGIS development, CloudGIS-Serverless Computing, Blender

Thesis

A Serverless Approach to a Scalable Geospatial Healthcare Web-based Application

Abstract

Serverless architecture offers dynamic scalability which automatically adjusts resources based on demand and eliminates the need to manage servers, unlike traditional cloud computing which would require manual scaling and infrastructure management. This project focuses on developing a scalable, geospatial web-based healthcare application, leveraging the cloud's Function as a Service(FaaS) and Backend as a Service(BaaS) capabilities to handle geospatial tasks, database querying and seamless integration services via API management. Built with front-end and back-end programming languages, the application supports spatial analysis, geospatial algorithms, and visualizations.

mmohapatra.sameer99@gmail.com

Sameer Mohapatra

Qualifications

M. Tech. in Remote Sensing & GIS (Marine and Atmospheric Science), M. Sc in Geography, B. Sc (Hons.) in Geography

Area of Interest

Analytical Cartography, Geographical Information System, 3D GIS, Web GIS, DBMS, Atmospheric Science, Atmospheric pollution studies, Human and Regional Geography, Social Science

Software Skills

Python, R, PostgreSQL, MATLAB, Google Earth Engine, GrADS, Leaflet, Geoserver, Git, Dash, Blender, BPMN, City Engine, ArcGIS Pro, ArcGIS, QGIS, ERDAS IMAGINE, SNAP, ENVI, SPSS, MS Office

Thesis

GASEOUS AIR POLLUTANTS OVER THE INDIAN SUBCONTINENT: INFLUENCE, VARIABILITY AND LONG TERM TREND.

Abstract

The Aim of the study to investigate the long term Spatio-temporal variation of Gaseous air pollutants over northern Indian Region, along with the impact of surface ozone pollution on crop yield using the Satellite and ground-observation data. Study integrate the chemistry transport modelling to quantify the ozone pollution due to various source sectors includes industrial, residential, transportation, biomass, power sectors etc. This information can assist policymakers in making well-informed decisions about environmental regulations, pollution control strategies, and fostering regional collaborations to reduce the effects of air pollution on crop, human health and climate.

samiksha4129@gmail.com

Samiksha

Qualifications

M. Tech Remote Sensing & GIS (Water Resource), B.Tech in Agricultural Engineering

Area of Interest

Cryospheric studies, Hydrological and Hydrodynamic Modelling, Microwave Remote Sensing, SAR Interferometry (InSAR), Irrigation Water Management, Machine Learning, surface and ground water hydrology, Watershed prioritization

Software Skills

ArcGIS, QGIS, SNAP, Python, R, ERDAS imagine, ENVI, HEC-HMS, HEC-RAS, SWAT, ILWIS, SPHY, SWMM, BRAT, CROPWAT, MintPy, Google Earth Engine, Blender

Thesis

Assessing Glacial Lake Bathymetry and potential impact of GLOF using satellite observations and Hydrodynamic modelling

Abstract

Glacial lake serves as fresh water source for downstream communities in Hilly regions. However, it also poses significant risks, such as GLOF, which can cause catastrophic downstream impacts. Therefore, accurate estimation of glacial lake depth is critical for mitigating the risk of GLOF. In this study, multiple approaches are used to estimate glacial lake depth. Comparing these estimated depths with field measurements obtained through echo-sounding surveys helps to identify the methods that produce results closest to the field data These bathymetric estimates, including both depth and volume, are then used as inputs to a hydrodynamic model, which simulates dam breach scenarios and the downstream propagation of flood waves. This study highlights the significant influence of glacial lake

sanghuswain@gmail.com

Sanghamitra Swain

Qualifications

M.Tech in Remote Sensing & GIS (Agriculture & Soils); B.Tech. (Agricultural Engineering)

Area of Interest

Watershed Development and planning, Soil erosion Modelling, Digital soil mapping, Crop Suitability, Crop classification, Drought Assessment

Software Skills

ArcGIS, QGIS, ERDAS Imagine, ENVI, SNAP, Python, R, Google Earth Engine, Google Earth Pro, CROPWAT, MS Office

Thesis

Modelling for soil erosion risk using remote sensing data and machine learning methods

Abstract

Soil erosion is a serious threat now days. Thus the identification of soil erosion prone areas is important for soil water conservation measures. This study integrates the Revised Universal Soil Loss Equation (RUSLE) with machine learning models like Random Forest (RF) and Artificial Neural Networks (ANN) to map soil erosion risk. It characterize the soil, LULC, terrain parameters for the study area with the use of remote sensing data. RUSLE outputs are refined with machine learning for accurate prediction and hotspot identification. The resulting erosion risk map provides critical insights for sustainable land management and conservation planning.

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Saswati Panda

Qualifications

M. Tech in Remote Sensing & GIS(Geosciences), M.Sc. Geology B.Sc. Geology

Area of Interest

Planetary Geology, Planetary Geomorphology, Impact Cratering, Mineral Characterization, Hyperspectral Remote Sensing, Spectroscopy, Morphometric Analysis, Topographical Analysis

Software Skills

CAT ENVI, ENVI ArcGIS, QGIS, ERDAS Imagine, Python, Google Earth Pro, Machine learning, SNAP

Thesis

Analysis of early Noachian period selected olivine bearing exposures on mars using high resolution data sets and machine learning approach

Abstract

The Early Noachian period on Mars represents a crucial era in the planet's geological history, characterized by significant crustal development and potential habitability. This study focuses on the detailed analysis of selected olivine-bearing exposures within this period, utilizing high-resolution datasets and a machine learning approach to identify mineralogical compositions, examine the degree of alteration such as serpentinization, and understand the geomorphological context of these exposures. The findings aim to contribute to the understanding of Mars' early geological processes and the evolution of its crustal materials, offering insights into its past environmental conditions.

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Satabdi Mandal

Qualifications

M.Tech in Remote Sensing & GIS (Agriculture and Soils), M.Sc. (Agriculture) Agronomy , B.Sc. Hons. (Agriculture)

Area of Interest

Evapotranspiration, Agricultural Drought, Precision Agriculture, Machine Learning based Applications in Agriculture (Crop Discrimination, Crop Inventory, Crop Yield Modeling), WebGIS Development & Data Integration

Software Skills

Google Earth Engine, Python, QGIS, ArcGIS, SNAP, ENVI, ERDAS Imagine, Google Earth Pro, R, HTML, GrADS, Microsoft Office, Geoserver, pgAdmin, VueJS

Thesis

Estimating irrigation water requirement and its dashboard using multi-sensor satellite data and time series forecasting.

Abstract

This research leverages the powerful integration of SAR and optical time-series satellite data with advanced machine learning algorithms to achieve precise crop classification. Targeting wheat-growing regions, it delivers accurate quantification of crop evapotranspiration and irrigation water requirement at the field level using the satellite derived crop coefficient approach. By pioneering near-real-time and fortnightly irrigation forecasting, the research lays the foundation for a cutting-edge Irrigation Decision Support System (IDSS). This innovative system empowers farmers and stakeholders with data-driven, efficient, and sustainable irrigation management, marking a significant leap in the intersection of remote sensing, machine learning, and agricultural innovation.

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Shriram Kumawat

Qualifications

M.Tech. in Remote Sensing & GIS (Agriculture and Soils); B.Sc. (Hons.) Agriculture

Area of Interest

Crop growth monitoring, Condition assessment, Yield estimation, Biophysical parameter retrieval for vegetation, Artificial Intelligence in Agriculture, Precision Agriculture, Sustainable Agriculture, Climate Change Studies in Agriculture, UAV based Remote Sensing

Software Skills

R, Python, QGIS, ArcGIS, Google Earth Engine, PIX4Dmapper, SNAP, ERDAS IMAGINE, ENVI, Blender

Thesis

Assessing potential of high resolution satellite/UAV data for crop monitoring at field scale.

Abstract

This study explores the potential of high-resolution satellite and UAV imagery for monitoring crops at the field scale. The primary objectives include identifying and mapping agricultural crops and horticultural plantations, tracking crop growth stages, and assessing crop condition. By leveraging advanced remote sensing techniques, the research aims to develop a robust crop model that can accurately estimate yields. This approach offers valuable insights into crop health, growth patterns, and productivity, enabling better management practices and decision-making for farmers. The findings highlight the effectiveness of high-resolution imagery in improving crop monitoring, enhancing agricultural productivity, and supporting sustainable farming practices. and precision agriculture practices.

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Siddhi Sandip Mandre

Qualifications

M. Tech Remote Sensing & GIS (Water Resource), B.Tech in Agricultural Engineering

Area of Interest

Hydrologic and Hydrodynamic modelling, Reservoir Operation Optimization, Groundwater Monitoring, Climate Impact Assessment, Water quality mapping and monitoring, Groundwater and surface water hydrology, Flood mapping and monitoring using SAR

Software Skills

Python, R, ArcGIS, QGIS, ERDAS Imagine, ENVI, SNAP, MATLAB, Google Earth Engine, Geoserver, SWAT, SWAT-CUP, HEC-HMS, HEC-RAS, QSWATMOD, Blender

Thesis

Reservoir Inflow Forecasting at Different Temporal Scale and Its Impact on Reservoir Operation

Abstract

Reservoir inflow forecasting is crucial for effective water resource management and optimal reservoir operations. This study integrates hydrological modeling with climate projections to improve inflow forecasting. The Soil and Water Assessment Tool (SWAT) is used for long-term predictions, while the Hydrologic Engineering Center-Hydrologic Modeling System (HEC-HMS) supports short-term forecasts. Coupled Model Intercomparison Project Phase 6 (CMIP6) datasets are utilized to incorporate future climate scenarios, ensuring robust projections under varying conditions The study evaluates the accuracy of both short- and long-term forecasts and analyses the impact of climatic projections on reservoir operations. Findings enhance strategies for addressing water availability challenges and support sustainable resource allocation in the context of climate variability and change.

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Sourav Dutta

Qualifications

M.Tech in Remote Sensing and GIS (Natural Hazards and Disaster Risk Management); B.Tech in Civil and Environmental Engineering; Diploma in GIS & GPS Engineering

Area of Interest

SAR interferometry (InSAR), Mining Hazards, Artificial Intelligence, Machine Learning, Deep Learning, Climate Change, Disaster Management, Disaster Risk Reduction, Renewable Energy, Wildlife Habitat Conservation, Natural Resources Management, Structural Health Monitoring and Urban Resilience Planning, Hydrological and Hydrodynamic Modelling, Environmental Monitoring, Environmental Impact Assessment, Air Pollution, Solid Waste Management.

Software Skills

Python, Anaconda, R/RStudio, OSGeo4W (QGIS, GRASS, SAGA, etc.), ArcGIS, ERDAS Imagine, Google Earth Engine (GEE), Google Earth Pro, MintPy, Jupyter Notebook, Google Colab, VS Code, PyGMTSAR, PyGMT, ESA SNAP, Ubuntu, ENVI, GrADS, AutoCAD, STAAD.Pro, CSi ETABS.

Thesis

Mining-Induced Geo-Environmental Hazards in Parts of Raniganj Coal Field Area: A Remote Sensing Based Approach

Abstract

Coal mining regions are facing significant geo-environmental challenges since long. Mining-induced subsidence owing to mine fires, improper stowing, and overburden stress, poses severe risks to surface stability and environmental sustainability. Advanced techniques like Pertinently, Interferometric Synthetic Aperture Radar (InSAR), integrated with spatio-temporal analysis, provide a robust framework for assessing ground deformation, mapping risk induced by mining related hazards, and holds promise to offer actionable recommendations for sustainable resource management and effective risk mitigation. This multidisciplinary approach highlights the urgent need for adopting sustainable practices to ensure resilience in mining-intensive regions.

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Sruthi S Babu

Qualifications

MTech in Remote Sensing & GIS (Natural Hazards and Disaster Risk Management), M.Sc. in Geology, B.Sc. (Hons.) in Geology

Area of Interest

Slope Stability Analysis, Machine Learning, Deep Learning, Landslide Hazard Zonation Mapping and Modelling, Automated Landslide Detection

Software Skills

Python, R, Google Earth Engine, GrADS, QGIS, ArcGIS, ERDAS Imagine, ENVI, SNAP, ILWIS, RAMMS::Rockfall, RAMMS::Debrisflow, Rocscience – Slide2, Slide3,CorelDraw

Thesis

Coupled usage of Remote Sensing based mapping, predictive modelling/simulation and analysis of conditioning/triggering mechanisms of landslide initiation in parts of J&K: Lessons learnt and future mitigation

Abstract

The adoption of Artificial Intelligence (AI) and Machine Learning (ML) for landslide mapping and monitoring in India is on the rise; however, it remains underutilized in Jammu and Kashmir (J&K). By integrating these techniques into semi-automated Landslide Early Warning Systems (LEWS), we can significantly improve real-time hazard detection and response capabilities. A key focus should be on correlating the Factor of Safety (FoS) with both causative and triggering factors to gain a deeper understanding of slope failures. Unfortunately, the absence of predictive modeling and numerical simulations in J&K hampers effective mitigation efforts. Therefore, a multidisciplinary approach that combines AI/ML techniques with stability analysis is crucial for revolutionizing landslide risk management, providing robust tools for detection and prevention.

sudikin.iirs3@gmail.com

Sudikin Pramanik

Qualifications

M.Tech. in Remote Sensing & GIS(Geoinformatics), M.Sc. in Physics(Atmospheric physics), B.Ed(Physical science), B.Sc(Hons.) in Physics

Area of Interest

Quantum computing(ML/DL, algorithms, cryptography, transport), Geostatistics, AI/ML/DL in geodata processing, SAR data processing, UAV precision analysis, Computer Vision, Prediction modelling, Teaching

Software Skills

Qiskit, Pennylane, Cirq, Classiq, GEE, DSA, QGIS, ArcGIS, Netlogo, ERDAS IMAGINE, Blender, ENVI, PostgreSQL, SNAP, Geoserver, Python, R, MATLAB, C, Java, Fortran, Js, GrADS, LaTeX

Thesis

Assessment of Quantum algorithms with Classical algorithms for EO data feature extraction

Abstract

Quantum computing utilizes entanglement and superposition to represent states in 2^n Hilbert space for n-qubit system. The work explores Pauli, ZZ and 2nd order feature space to map the classical data into Hilbert space enabling it for quantum computing on satellite data. It is found that the Quantum SVM outperforms the Classical SVM for certain unitary operations. When a quantum circuit is put inside two fully connected layers of a Quantum hybrid CNN it shows remarkable performance for all classes compared to classical CNN with 6 different circuits. QHCNN1 with Bell state having Ry transformation performs with best overall accuracy at 93.6% in 10 classes combined.

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Sushmita Dam

Qualifications

M.Tech in Remote Sensing & GIS (Forest Resources & Ecosystem Analysis); M.Sc (Forestry & Biodiversity); B.Sc (Botany)

Area of Interest

Process-based modeling, Climate Change studies, Machine/ Deep learning, Ecosystem Carbon Dynamics, Eddy Covariance Technique, Object-based Image Analysis, Biodiversity & Conservation Ecology, Species Distribution Modeling, Habitat Suitability Analysis

Software Skills

ArcGIS, QGIS, ERDAS Imagine, Python, R, Google Earth Engine, SNAP, eCognition, 3D Forest, GrADs, MaxEnt, ENVI, Blender

Thesis

Forest canopy parameter monitoring using radiative transfer model and machine learning

Abstract

Physical or process-based models are grounded in fundamental physical principles. Radiative transfer model (RTM) is one such which describes the interaction between matter and electromagnetic radiation. On the other hand, machine learning builds on statistical relations by using data to identify patterns, model relationships or make predictions. This study aims at utilising vegetation RTM and machine learning model to retrieve biophysical and biochemical variables for monitoring Sal forests. Understanding of such factors, characteristic of a forest type can provide important insights about health & functioning of the ecosystems, such as productivity or stress. Degree of transferability of the models across seasons will also be studied. Additionally, degree of transferability will be assessed to establish applicability of the models across seasons.

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Talabattula Aparna

Qualifications

M. Tech in Remote Sensing & GIS with Specialization in Satellite Image Analysis & Photogrammetry), B. Tech in Electronics and Communication Engineering

Area of Interest

Terahertz Remote Sensing, Synthetic Aperture Radar, Microwave Remote Sensing, Digital Image Processing, Satellite data analysis, LiDAR, UAV Remote Sensing, Radiative Transfer Modelling,Climate Studies, Machine Learning, Deep Learning

Software Skills

MATLAB, Python, C, R Studio, Erdas Imagine, ENVI, SNAP, ARTS, ArcGIS, QGIS, Google Earth Engine, eCognition, Blender, Mapstore, Geoserver, Linux OS, Cloud Compare, MeshLab, Pix4D

Thesis

Modelling and Retrieval of Atmospheric Trace gases in terahert frequency

Abstract

This study explores the potential of terahertz remote sensing and the retrieval of atmospheric trace gases using terahertz (THz) frequency, focusing on key gases like ozone(O3), chlorine monoxide (ClO), and other trace gases. It aims to develop a comprehensive understanding of trace gas profiles and their dynamics in the THz frequency through radiative transfer modeling and simulation. The research includes a time series analysis of atmospheric composition and pressure profiles, specifically focusing on ozone variability. Additionally, simulated trace gas profiles in THz frequencies are compared with data from existing remote sensing sensors to assess accuracy and reliability.

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Trisha P S

Qualifications

M. Tech in Remote Sensing & GIS, specializing in Natural Hazards and Disaster Risk Management, B. Tech Planning(Urban and Regional Planning).

Area of Interest

Thermal Comfort Zonation, Urban Heat Island Mitigation, Remote Sensing in Urban Planning, GIS in Urban Climate Resilience, Urban Climate Change Adaptation, Land Subsidence and Urban Infrastructure, Disaster Management, Climate Change Studies, Environmental Impact Assessment.

Software Skills

Python, R, Q GIS, Arc GIS, ERDAS Imagine, Google Earth Pro, Google Earth Engine, ENVI, SNAP, MS Office

Thesis

Long-Term Spatio-Temporal Assessment of Thermal Comfort Zonation of India.

Abstract

This study presents a long-term spatio-temporal assessment of thermal comfort zonation in India, driven by factors like urban expansion and climate change. Using past and present climatic data, the study analyses changes in temperature, precipitation, wind speed and relative humidity, aiming to develop a methodology for thermal comfort mapping. Relative humidity data is statistically downscaled to the urban scale, and thermal comfort zones are generated for India using Mahoney tables. The study compares zonation maps across historical and current climate scenarios, providing insights into evolving building design strategies under changing climatic conditions.

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Twameka Ghosal

Qualifications

M.Tech in Remote Sensing & GIS in Marine and atmospheric Science (MASD); M.Sc in Marine Science; B.Sc in Hons. in Geology

Area of Interest

Hyperspectral data processing for advanced analysis and interpretation, Monitoring coastal zones using multi-temporal satellite imagery, Shoreline change detection through predictive modelling approaches, Coastal risk and vulnerability assessment using geospatial methodologies, Application of remote sensing and GIS for in-depth analysis of coastal processes and geomorphological evolution

Software Skills

ArcGIS, ArcGIS Pro, QGIS, ERDAS imagine, ENVI, MATLAB, R studio, Google earth engine, Fortran, GrADS, SNAP, WX-Tides, MS-office, MS-excel, Python, Google earth pro

Thesis

Coastal vulnerability assessment and mapping of heavy minerals along selected coastal tracts of Kerala using multi-spectral and hyperspectral data

Abstract

Kerala's coastal districts are ecologically and economically significant but are vulnerable to both natural and human-made hazards. This study evaluates coastal vulnerability by considering physical and socio-economic factors using a 5 km × 5 km grid system. These factors are weighted and combined to create a Coastal Vulnerability Index (CVI) map, which classifies the coastline into five vulnerability levels, from very high to very low. Additionally, hyperspectral data is used to analysis and map heavy minerals along the specific coastline, providing detailed information on mineral composition. This approach helps identify high-risk areas and regions with important mineral deposits, aiding in coastal management, resource assessment, and risk reduction strategies.

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Ummu Selma. C. U.

Qualifications

M.Tech. in Remote Sensing & GIS (Forest Resources and Ecosystem Analysis), B Sc. (Hons.) Forestry

Area of Interest

Climate Change, Sustainable Development, Forest Carbon Dynamics, Forest Biomass, Environmental Impact Assessment, Wildlife Studies, Machine Learning, Deep Learning

Software Skills

R, Python, Google Earth Engine, ArcGIS, QGIS, ERDAS Imagine, SNAP, ENVI, eCognition, MaxEnt, 3D Forest, Fragstats

Thesis

Quantifying the Effects of Shifting Cultivation on Forest Carbon Dynamics through Integration of EO Data and Advanced Carbon Accounting in Nagaland

Abstract

Shifting cultivation, a traditional agricultural practice in equatorial regions, significantly alters forest cover through repeated cycles of vegetation disturbance and regrowth, with notable environmental and socio-economic consequences. This study investigates the spatio-temporal patterns of vegetation disturbance and regrowth caused by shifting cultivation in Nagaland, India, over the past three decades (1991–2024). The objectives include modelling and analyzing these patterns using temporal segmentation of time series Earth Observation (EO) data, developing a deep learning-based predictive model for mapping the spatial distribution of forest carbon, and modelling carbon dynamics in shifting cultivation landscapes. The findings reveal considerable variability in cultivation cycles, with disturbances ranging from isolated slash-and-burn events to cycles with fallow periods under 7 years. This study offers pioneering insights into carbon dynamics in shifting cultivation ecosystems.

yasaswinibomminayuni@gmail.com

Bomminayuni. Yasaswini

Qualifications

M. Tech Remote Sensing & GIS (Geo Informatics), B. Tech Geo Informatics

Area of Interest

Remote Sensing, GIS, Climate studies, GNSS, Environmental studies

Software Skills

ArcGIS, QGIS, ArcGIS Pro, ENVI, ERDAS IMAGINE, WRF, R Studio

Thesis

Wind fields prediction using ml models with gnssro observations

Abstract

Accurate wind field forecasting is vital for agriculture, disaster management, aviation, and renewable energy. My study explores integrating GNSS Radio Occultation (GNSS-RO) data with machine learning (ML) models to enhance wind field predictions over India's complex geography. Using the Weather Research and Forecasting (WRF) model with ERA-5 data, ML models such as LSTM and CNN are trained to predict wind fields. GNSS-RO data, providing high-resolution atmospheric profiles, improves model accuracy and efficiency. Results demonstrate that ML models significantly reduce prediction times while maintaining high accuracy. This research aims to develop a robust forecasting framework, delivering precise, real-time predictions to improve weather forecasting and preparedness across sectors in India's diverse climatic conditions.

yog9575@gmail.com

Yogesh Yadav

Qualifications

M.Tech in Remote Sensing & GIS (Water Resources),
B.Tech (Agriculture Engineering)

Area of Interest

Hydrological Modelling, Climate Change Studies, Water body Mapping and Monitoring, Glacio-hydrological modelling, Space-borne LiDAR data processing

Software Skills

ArcGIS, QGIS, ERDAS Imagine, ENVI, SNAP, SPHY, MIKE-SHE, OGGM, Python, Google Earth Engine

Thesis

Quantification of Dominant hydrological processes in Glaciated and Non-Glaciated watersheds using Remote Sensing and Hydro-glaciological Modeling

Abstract

The study examines the use of different hydrological models, such as physical, empirical, and energy-balance methods, for simulating water balance and flow dynamics. Through the integration of observed data for calibration and to evaluate the future effects of modifications in glacier and snow coverage on glaciated and non-glaciated watersheds alike. this study explores the effects of these changes on subsequent agricultural methods and the wider hydrological processes that underpin inland river systems.

The Master of Science (M.Sc.) in Geo-information Science and Earth Observation (specialisation/domain: Geoinformatics) is offered within the framework of Joint Education Programme (JEP) of tIIRS and the Faculty of Geo-information Science and Earth Observation (ITC) of the University of Twente (UT), The Netherlands.

The course is of two year duration having eight quartiles. Students follow part of the course at IIRS and a part at the Faculty ITC, The Netherlands. Upon successful completion of the course students receive a Master's degree from UT-ITC. The UT-ITC degree has the name 'Master of Science degree in Geo-Information Science and Earth Observation'. The broad structure of the course is:

Year	Quartile	Course	Location
1	Q1	Core	IIRS
		Academic Skills	IIRS
1	Q2	Scientific Geocomputing	IIRS
		Acquisition and Exploration of Geospatial Data	IIRS
		Academic Skills	IIRS
1	Q3	Elective Course	IIRS
		Extraction, Analysis and Dissemination of Geospatial Information	IIRS
		Academic Skills	IIRS
1	Q4	Elective Course	IIRS
		Global Challenges, Local Action	IIRS
		Academic Skills	IIRS
2	Q5-6	MSc Research (proposal), Individual study programme & MSc Research	ITC
2	Q7-8	Internship, MSc Research and Thesis Defence	IIRS

ajinparakkal@gmail.com

Ajin P Asok

Qualifications

M.Sc. in Geo-information Science and Earth Observation (Specialization: Geoinformatics),
M.Sc. in Soil Science and Agricultural Chemistry (Agriculture),
BSc. (Hons.) Agriculture

Area of Interest

Machine Learning and Deep learning applications in Agriculture/ Environment, Remote sensing, Image Processing, Predictive Soil mapping

Software Skills

Python, ArcGIS, QGIS, Google Earth Engine, R Studio, ERDAS Imagine, ILWIS, Blender, Adobe Photoshop, MS Office (Excel, PowerPoint, Word)

Thesis

Spatio-temporal Dynamics of Soil Attributes and Predictive Mapping in Kuttanad, Kerala Using Random Forest and Remote Sensing Techniques

Abstract

This study assesses changes in soil properties in Kuttanad, Kerala, for 2010 and 2019 using remote sensing and spatially explicit covariates. Key factors influencing soil properties are identified through Random Forest analysis, with spatio-temporal variations evaluated. High-resolution maps and thematic change detection quantify transitions, aiding sustainable soil management strategies.

aravindan.iirs@gmail.com

Aravindan S G

Qualifications

M.Sc. in Geo-information Science and Earth Observation (Specialization: Geoinformatics),
B.E (Geoinformatics Engineering).

Area of Interest

Spatial Data Analysis, Digital Image Processing (Optical, Microwave),
SAR Data Processing, SAR Tomography, GNSS,
UAV data collection and Processing, 3D Simulation Modelling,
Machine Learning and Deep Learning,
Environmental Impact Assessment, Forest Monitoring.

Software Skills

PolSAR Pro, SNAP, ILWIS, ERDAS Imagine, QGIS, ArcGIS, Python, R, MATLAB, Blender, CityGML, CityEngine, FME, Drone2Map.

Thesis

Deep Learning Modelling for Aboveground Biomass and Forest Height Retrieval.

Abstract

This study aims to develop a deep learning approach for estimating forest aboveground biomass and forest canopy height using multibaseline and multifrequency SAR tomographic data. The research will explore the synergistic use of multiple SAR frequencies. By integrating deep learning with SAR tomography, the study seeks to overcome limitations of traditional methods, particularly in complex tropical forests and expected to enhance the retrieval of vertical forest parameters and estimation of forest aboveground biomass, contributing to improved forest management and carbon dynamics understanding. The outcomes of this research will be valuable for future SAR missions such as NISAR and BIOMASS, offering potential for global-scale forest monitoring and biomass estimation.

lisha.teotia@gmail.com

Lisha Teotia

Qualifications

M.Sc. in Geo-information Science and Earth Observation (Specialization: Geoinformatics),
M.Sc. in Disaster Management,
PGD in Geoinformatics,
B.Tech. in Computer Science & Engineering

Area of Interest

Disaster Management, Machine Learning, Site Suitability Analysis, Cartography, Climate Change, InSAR Applications for Land Subsidence, Environmental Impact Assessment for Land use and Land cover changes

Software Skills

Python, RStudio, HTML, CSS, ArcGIS, QGIS, ERDAS Imagine, FastFlood, LISEM, CityEngine, Blender, PostgreSQL, PostGIS, GeoServer, SNAP, MS Office (Word, Excel, Power Point), Google Earth Engine

Thesis

Urban Flood Risk Assessment for Mumbai using Multi-criteria Decision Analysis and Machine Learning techniques

Abstract

Urban flooding poses significant challenges to rapidly growing cities like Mumbai, driven by climate change, rapid urbanization, and inadequate drainage systems. This research aims to develop an urban flood risk assessment model using a combination of Multi-Criteria Decision Analysis (MCDA) and Machine Learning (ML) techniques. The Analytic Hierarchy Process (AHP) will integrate diverse factors, such as elevation, land use, and socio-economic variables, prioritizing them based on their impact on flooding. Simultaneously, ML techniques such as Random Forest (RF) and Support Vector Machines (SVM) will be applied for predictive modeling of future flood scenarios and support decision-making. The study focuses on creating flood risk maps to identify vulnerable zones and provide actionable insights for urban planners and policymakers, enhancing resilience against flooding in Mumbai's complex urban landscape.

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Megha K Prasad

Qualifications
M.Sc. in Earth Observation and Geoinformation Science (Specialization: Geoinformatics) (ITC-IIRS JEP),
B.Tech. In Geological Technology and Geoinformatics

Area of Interest
Disaster management, Remote sensing & GIS, Forestry, Geomorphology, Hydro Climatology, Atmospheric science, Oceanography and Geo Health

Software Skills
ESRI ArcGIS, GEE, ERDAS Imagine, SWMM, Python, Java, ENVI, QGIS, INP.PINS, SNAP, CESIUM, Blender 3D and Open Lisem

Thesis
Multi-Hazard Modelling and Prediction for Periyar Basin, Kerala Using ML Methods and SHAP XAI

Abstract
The Periyar Basin in Kerala faces significant environmental challenges due to the interplay of multiple natural hazards, including floods, landslides, and forest fires, which pose risks to local communities, ecosystems, and infrastructure. This study aims to develop a comprehensive multi-hazard susceptibility map for the region by integrating advanced machine learning (ML) models such as Random Forest (RF), Support Vector Machines (SVM), and Boosted Regression Trees (BRT). Individual hazard models will be created for floods, landslides, and forest fires, and a combined multi-hazard model will be generated to capture overlapping risks. Explainable AI (XAI) techniques, specifically SHAP (SHapley Additive exPlanations), will enhance the interpretability of these models, providing transparent insights into the influence of environmental and topographical factors on hazard susceptibility. The study's outputs will support disaster management authorities, policymakers, and local communities in mitigating risks and implementing effective preventive measures.

revanthkrv2000@gmail.com

Revanthkumar K

Qualifications
M.Sc. in Geo-information Science and Earth Observation (Specialization: Geoinformatics),
B.E. Geoinformatics

Area of Interest
Aerial photogrammetry, Big GIS Data, Distributed Computing, Spatial Data Analytics, Large Language Model (LLM), GeoAI

Software Skills
ERDAS Imagine, QGIS, ArcGIS, Python, Postgres SQL, Google Earth engine, Spatial SQL, Agentic AI

Thesis
Natural Language Interface for spatial SQL interact with spatial database using large language Model (LLM)

Abstract
Non-expert users often face challenges when interacting with spatial databases, as performing topological relationships and spatial analysis requires knowledge of structured query languages like Spatial SQL. This complexity limits their ability to effectively handle real-world spatial features and extract meaningful insights. This study focuses on developing a natural language interface that enables users to analyze spatial data using simple text-based queries. By leveraging a large language model, the system translates natural language input into spatial queries, allowing users to perform spatial analysis and explore topological relationships without technical expertise. The goal is to make spatial tools more accessible and user-friendly, bridging the gap between non-expert users and complex spatial databases.

thirumalasaivardhan@gmail.com

Thirumala Sai Vardhan

Qualifications
M.Sc. in Geo-information Science and Earth Observation (Specialization: Geoinformatics),
B.E. in Civil Engineering

Area of Interest
Sar interferometry (InSAR), polarimetric interferometry (PolInSAR), surveying, 3D mapping, Digital Twin

Software Skills
ERDAS Imagine, ESA SNAP, StaMPS and ISCE, QGIS, ArcGIS, ArcGIS Pro, CityEngine, ILWIS, FME, Unreal Engine, Blender, Python, SQL, R programming, pgAdmin4, Leaflet, Open layers, MATLAB, AutoCAD, REVIT, STAAD pro, ETABS, GEE

Thesis
InSAR Analysis for linear infrastructure deformation: A case study of Medigadda Barrage

Abstract
This study focuses on the application of Synthetic Aperture Radar Interferometry (InSAR) using Sentinel-1 SAR data to monitor deformation over the Medigadda Barrage, a critical component of the Kaleshwaram Lift Irrigation Project located in Telangana, India. The research employs C-band data from Sentinel-1 with dual polarization (VV and VH) to enhance the spatial density of Persistent Scatterer Interferometry (PSI) points, thereby improving the precision of deformation analysis. By leveraging time-series InSAR techniques, this study aims to identify and quantify deformation patterns of the linear infrastructure over time, contributing to the understanding of structural stability and risk assessment. The findings are expected to provide valuable insights for infrastructure monitoring and management, ensuring the long-term functionality and safety of this essential irrigation project.

shantakarm43@gmail.com

Shantakar Mohanty

Qualifications

M.Sc. in Geo-information Science and Earth Observation
(Specialization: Geoinformatics),
M.Sc. Geography,
B.Sc. Applied Geography

Area of Interest

Marine Life Conservation, Marine Spatial Planning, Vulnerability and Risk Assessment of protected regions, Flood Risk Assessment, Nightlights Analysis, Climate Change Assessment, Applications of GIS & RS in SDGs, Disaster Management, Biodiversity Assessment

Software Skills

QGIS, ArcGIS, FME, ERDAS, Google Earth Engine, Blender, Python, Machine and Deep Learning,
R Studio, HTML & CSS, MS Office, Adobe Premiere Pro

Thesis

Deep Learning based Detection of Fishing Vessels and Illegal Fishing Monitoring using Nightlight images

Abstract

This study focuses on the Arabian sea fishing grounds on the West Coast of India, a region of immense ecological and economic importance, plagued by rampant IUU fishing activities. By combining SDGSAT-1 NTL imagery, AIS data, and deep learning techniques, we aim to develop a robust deep learning model for fishing vessel detection and IUU monitoring. The integration of high-resolution nightlight imagery with a deep learning algorithm can be used for high-accuracy object detection of fishing vessels over the study area. This study has the potential to address not only existing gaps in maritime surveillance but also provides critical insights into the socio-economic impacts of IUU fishing on local fisheries and communities.

PG Diploma in Geoinformatics (2023-24)

PGD in Geo-information Science and Earth Observation (specialisation/domain: Geoinformatics) is offered within the framework of Joint Education Programme (JEP) of the IIRS and the Faculty of Geo-information Science and Earth Observation (ITC) of the University of Twente (UT), The Netherlands. Upon successful completion of the course, the participants receive the Postgraduate Diploma in "Geo-information Science and Earth Observation (Geoinformatics)" awarded jointly by the Faculty ITC/ University of Twente and IIRS.

The course is of one year duration having four quartiles. Students follow the course at IIRS. The broad structure is

Quartile	Course
Q1	Core Academic Skills
Q2	Scientific Geocomputing Acquisition and Exploration of Geospatial Data Academic Skills
Q3	Elective Course Extraction, Analysis and Dissemination of Geospatial Information Academic Skills
Q4	Elective Course Individual Project, Report Writing, Evaluation Academic Skills

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D LEKSHMI NANDANA

Qualifications

PG Diploma in
Geo-information Science and Earth Observation
(Specialization: Geoinformatics)
Integrated MSc Applied Geology.

Area of Interest

Remote Sensing and GIS application in Planetary Science, Ground water mapping, site suitability analysis, UHI monitoring and environment impact assessment, Hydrological modelling (SWAT) and mineral exploration, (Hyperspectral and SAR Remote Sensing).

Software Skills

ArcGIS, QGIS, Autocad, ERDAS Imagine, ENVI, Google Earth Pro, Microsoft Office, Familiar with Python, NetLogo and MATLAB

durgaprasadjakka865@gmail.com

JAKKA DURGA PRASAD

Qualifications

PG Diploma in
Geo-information Science and Earth Observation
Specialization: (Geoinformatics),
B.Tech in Geoinformatics

Area of Interest

Aerial photogrammetry, Heritage Conservation, Fuzzy applications, surveying, 3D mapping, Digital Image Processing.

Software Skills

Autocad, Google Earth Engine, ERDAS Imagine, QGIS, ArcGIS, Agisoft Metashape, Reality Capture, Unreal Engine, Python

mithileshpadhan@gmail.com

MITHILESH PADHAN

Qualifications

PG Diploma in
Geo-information Science and Earth Observation
Specialization: (Geoinformatics),
M.Sc. in Environment Management,
B.Sc. Hons. Chemistry.

Area of Interest

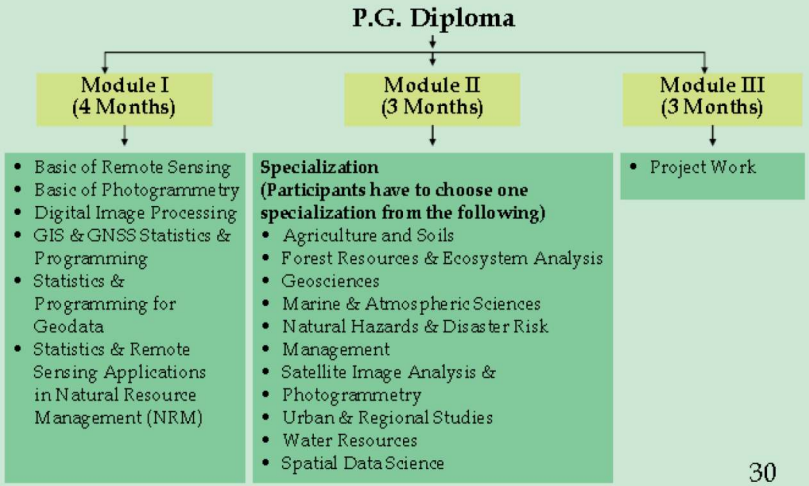
Remote Sensing and GIS applications in Forestry, Natural Resource Management, Forest Cover Mapping, Habitat Suitability Modeling, Forest Fire/ Landslide Susceptibility Zone Mapping, Biomass Estimation, Climate Change Study and Prediction, Time Series Analysis and Forecasting

Software Skills

ERDAS Imagine, QGIS, ArcGIS, Google Earth Engine, R-Studio, MaxEnt, Python Basics, NetLogo, Power BI, SQL, MATLAB

The PG Diploma programme aims to provide in-depth understanding of remote sensing, satellite image analysis, GIS and GNSS technologies and their applications in various fields viz., Agriculture & Soils, Forestry & Ecology, Geosciences, Water Resources, Marine and Atmospheric Sciences, Urban and Regional Studies, Large-scale Mapping, Disaster Management Studies, etc.
The PG Diploma course is modular in structure. First module covers basics of geospatial technologies, second module deals with thematic disciplines, and third module contains pilot project work. The PG Diploma programme is conducted in following disciplines:

- Agriculture and Soils
- Forest Resources & Ecosystem Analysis
- Geoinformatics
- Geosciences
- Marine & Atmospheric Sciences
- Natural Hazards & Disaster Risk Management (NHDRM)
- Satellite Image Analysis & Photogrammetry
- Urban & Regional Studies
- Water Resources
- Spatial Data Science



Core paper under each specialization in module II of PGD			
Agriculture & Soils Land Use & Soil Resource Assessment Agri-informatics Environmental Soil Science Satellite Agro-meteorology	**Forest Resources & Ecosystem Analysis** Forest Mapping & Monitoring Forest Inventory Forest Informatics Forest Eco-System Analysis	**Marine & Atmospheric Sciences Satellite** Oceanography Satellite Meteorology Coastal Processes and Marine Ecology Atmospheric and Ocean Dynamics	**Geoinformatics** Spatial Data Quality Programming Skills Development for Geo-Processing Spatial Database Handling, Modelling & GIS Implementing Architectures Geo-Statistics
Geosciences Earth Science and Planetary Geology Data Processing and Analysis for Geosciences Applied and Tectonic Geomorphology Engineering Geology and Groundwater	**Satellite Image Analysis & Photogrammetry** Emerging Sensors and Data Processing Image Processing Algorithms Digital Photogrammetry and Mapping Mathematical Computing for Geospatial data analysis	**Natural Hazards & Disaster Risk Management (NHDRM)** Natural Hazards and Disaster Management: Concepts & Overview Image Interpretation and Analysis for Natural Hazards Assessment Application of Geoinformatics to Environment Hazards Application of Geoinformatics to Geological Hazards Application of Geoinformatics to Hydro-meteorological Hazards	**Water Resources** Satellite Hydrology Watershed Hydrology and Conservation Planning Water Resources Development Water Resources Planning Management
	Urban & Regional Studies Fundamentals of Urban and Regional Planning Geospatial Technologies for Urban & Regional Area Analysis Urban Resources, Services and Facilities Analysis Advanced Geospatial Technologies for Urban and Regional Studies	**Spatial Data Science** Big Data Analysis Machine Learning Programming for Geodata Processing Spatial Modelling and Data Assimilation	

aatreyeesingh@gmail.com

Aatreyee Singh

Qualifications
PGD in Remote Sensing and GIS
(specialization: ASD)
B.Tech in Agricultural Engineering

Area of Interest
Soil and water conservation, Soil Erosion modelling, Soil quality and health, Digital soil mapping, Soil degradation assessment, Watershed development, planning and management, Land use and resource assessment, Drought assessment, AI and ML in agriculture

Software Skills
ArcGIS, QGIS, ERDAS Imagine, ENVI, SNAP, R, Python, Google Earth Engine, Microsoft Office Suite (Word, Excel, PowerPoint)

abantikakar.munu@gmail.com

Abantika Kar

Qualifications
PGD in Remote Sensing and GIS
(specialization: SDS)
M.Sc. in Geography (Geomorphology)
B.Sc. (Hons.) in Geography

Area of Interest
Remote Sensing and GIS applications in flood hazard, Coastal Geomorphology, Geospatial modelling, Site suitability analysis, Database Management, Machine Learning

Software Skills
Arc GIS, QGIS, Python, ERDAS IMAGINE, Rstudio, Google Earth Engine, Post Gres SQL, ENVI, SNAP, MS Office)

alexksani2002@gmail.com

Alex K Sani

Qualifications
PGD in Remote Sensing and GIS
(specialization: ASD)
B.Tech. in Agricultural Engineering

Area of Interest
Remote Sensing and GIS Applications in Agriculture, Microwave and Hyperspectral Remote Sensing in Agriculture, UAV Based Applications in Agriculture, Crop Monitoring, Yield Estimation, Crop Phenology Mapping and Biophysical Parameter Retrieval, Precision Agriculture

Software Skills
GIS, ArcGIS, ERDAS Imagine, ENVI, SNAP, Python, Google Earth Engine

alfredworld@gmail.com

Alfred Thomas Jose

Qualifications
PGD in Remote Sensing and GIS
(specialization: MASD)
B.Sc. (Hons) in Geography
M.Sc. in Atmospheric Science

Area of Interest
Instrument operations, climate modelling, extreme weather events

Software Skills
WRF-ARW, GrADs, MATLAB, FORTRAN, UNIX, HYSPLIT, Python, Quantum GIS, ArcGIS, ENVI, ERDAS Imagine

anushkapandey035@gmail.com

Anushka Pandey

Qualifications
PGD in Remote Sensing and GIS
(specialization: WRD)
M.Sc. in Geology

Area of Interest
Remote Sensing and GIS application in Hydrology, Glaciology, Natural Hazard Monitoring, Watershed Delineation

Software Skills
QGIS, ArcGIS, ILWIS, Erdas Imagine, Python

ajhaiirs@gmail.com

Ashutosh Kumar Jha

Qualifications
PGD in Remote Sensing and GIS
(specialization: WRD)
B.Tech in (Civil Engineering, GGSIPU, 2019)

Area of Interest
Application of
Remote Sensing and GIS in Water Resources - Planning & Management, River Meandering, Stochastic Hydrology, Groundwater and contaminant hydrology, Rainwater harvesting, Reservoir operation and optimization, Flood Risk Management, Rainfall-Runoff Modelling, Dam Break Studies, Climate Change Assessment, GPS, LIDAR, Cartography, Site suitability SAR & Hyper-spectral Remote Sensing

Software Skills
Python, R Studio, HEC-RAS, ANSYS Fluent, HEC-HMS, ArcGIS, SNAP, ENVI, ERDAS, QGIS, Google Earth Pro., STAAD Pro vsi8, AutoCAD

atharvaiirs@gmail.com

Atharva Sanjay Togattiwar

Qualifications
PGD in Remote Sensing and GIS
(specialization: FED)
M.Sc. in Biodiversity, Wildlife Conservation and Management,
B.Tec in Biotechnology

Area of Interest
Wildlife Conservation & Management, Land use land cover Mapping and change detection, Habitat suitability Modeling, Ecological Niche Modeling, Forest Biomass Assessment

Software Skills
Arc GIS, QGIS, ERDAS, Google Earth Engine, RStudio, Maxent, Ecognition EddyPro

ayushk1817@gmail.com

Ayush Kumar

Qualifications
PGD in Remote Sensing and GIS
(specialization: SIAP)
B.Tech. in Electrical Engineering

Area of Interest
Electrical Engineering, Remote sensing

Software Skills
QGIS, ArcGIS, Blender, ENVI, Parbat, Erdas

deepankardeoli2001@gmail.com

Deepankar Deoli

Qualifications

PGD in Remote Sensing and GIS
(specialization: GSD)
M.Sc. in (Geology)
B.Sc. in (Physics, Maths, Geology)

Area of Interest

Remote Sensing and GIS Applications in Land Subsidence, Landslide Hazard Zonation, Natural Hazard Management, Geomorphic Studies, Land Use and Land Cover Mapping, Digital image processing, Hydrogeological studies

Software Skills

ERDAS imagine, ArcGIS, QGIS, SNAP, ENVI, Python, Google Earth pro, MS Office (Word, excel, PowerPoint), RES2DINV

phadkedhruvi99@gmail.com

Phadke Dhruvi

Qualifications

PGD in Remote Sensing and GIS
(specialization: FED)
M.Sc. in Botany
B.Sc. (Hons.) in Botany

Area of Interest

Remote Sensing and GIS application in Forest Phenology dynamics, Climate change affecting phenology of species, Forest monitoring and management, Ecosystem analysis and Remote Sensing data processing.

Software Skills

QGIS, ENVI Classic, SNAP, RStudio, Google Earth Engine, ArcGIS, ERDAS IMAGINE, Jupyter Notebook (Python)

Lipikadutta25@outlook.com

Lipika Dutta

Qualifications

PGD in Remote Sensing and GIS
(specialization: NHDRM)
M.Sc. in Geography
B.Sc. (Hons.) in Geography

Area of Interest

My research focuses on mapping and early warning system modelling for natural hazards like floods, landslides, glacial hazards, and land subsidence, intensified by climate change. Using Remote Sensing and GIS, I aim to enhance hazard detection, improve risk assessment, and develop effective mitigation strategies to protect vulnerable communities.

Software Skills

Arc GIS (Advance), Q GIS (Advance), Google, Earth Engine (Basic), Python, SNAP, ENVI, R Studio, ILWIS

ekta86703@gmail.com

Ekta Yadav

Qualifications

PGD in Remote Sensing and GIS
(specialization: FED)
M.Sc. in (Environment Sciences)
B.Sc. in (Life sciences)

Area of Interest

RS & GIS in Forestry and Ecology field (research project), Carbon projects and Forest Certification

Software Skills

ArcMap, QGIS, Erdas, GEE, E-cognition, RStudio

gayatripatil075@gmail.com

Gayatri Yashwant Patil

Qualifications
PGD in Remote Sensing and GIS
(specialization: WRD)
B.Tech in (Agriculture Engineering)

Area of Interest
Modelling, water quality mapping

Software Skills
ArcGIS, QGIS, ENVI, ERDAS,
HEC-RAS, HEC-HMS, ILWIS, SAGA-GIS

harshaharitham96@gmail.com

Harsha P

Qualifications
PGD in Remote Sensing and GIS
(specialization: MASD)
M.Sc. in Physics
B.Sc. in Physics

Area of Interest
Application of remote sensing and
GIS in marine atmospheric sciences,
ocean heat waves,
extreme rain fall events

Software Skills
Python, ERDAS - IMAGINE, MAT LAB,
GrADS, R PROGRAMMING,
GOOGLE EARTH ENGINE,
Q-GIS, ARCGIS, ENVI

harshwardhan.iirs@gmail.com

Harshwardhan Bhardwaj

Qualifications
PGD in Remote Sensing and GIS
(specialization: ASD)
M.Sc. in Agriculture (Soil Science)
B.Sc. (Hons.) in Agriculture

Area of Interest
Soil Erosion Modelling,
Carbon Sequestration, Watershed
Management, Soil Fertility, Soil Resource
Mapping, Land Degradation, Crop Modelling,
Drought Assesment,
Agrometeorology, Climate Change,
Microvave & Hyperspectral Data Analysis,
AI/ML, Smart/Precision Agriculture, Agri-
informatics

Software Skills
ArcGIS, QGIS, ERDAS IMAGINE, ENVI,
SNAP, R Studio, Python, GEE

imrannawab986@gmail.com

Imran Nawab

Qualifications
PGD in Remote Sensing and GIS
(specialization: MASD)
M.Sc. (Marine & Atmospheric Sciences)
B.Sc. in (Geology)

Area of Interest
Atmosphere-Ocean interactions,
Tropical cyclones, Aerosols, climate
change, monsoon,
extreme weather events, Ocean
circulation, ENSO dynamics,
Atmosphere and Ocean modelling

Software Skills
MATLAB, Python, ArcGIS, QGIS, ERDAS
Imagine, ENVI, Grads

inarayalir@gmail.com

Ina Rayal

Qualifications
PGD in Remote Sensing and GIS
(specialization: MASD)
M.Sc. in Physics
B.Sc. in Physics

Area of Interest
Data Analytics, Numerical Weather Prediction and
Climate Modeling,
Climate Change,
Extreme weather events,
Coastal Resource Management,
Satellite Data Assimilation, Machine Learning, Atmosphere and
Ocean Dynamics

Software Skills
ArcGIS, QGIS,
Python (xarray, geopandas, pandas, seaborn, GDAL, etc),
Fortran, R, GrADS, Panoply, SNAP, Linux (including WSL),
LaTeX (including TeXstudio Overleaf),
ERDAS, WRF, ENVI,
Google Earth Engine, HYSPLIT

chaudharyindrajeet099@gmail.

Indrajeet Chaudhary

Qualifications
PGD in Remote Sensing and GIS
(specialization: NHDRM)
B.Sc. in Mathematics
M.Sc. in Environmental Science

Area of Interest
Natural hazard, climate change, aerosol,
natural resources management,
forest fire

Software Skills
Python, R, ERDAS Imagine, ENVI,
Arc GIS, QGIS, Google Earth Engine,
Microsoft Office Suite

kpareek47@gmail.com

Keshav Pareek

Qualifications
PGD in Remote Sensing and GIS
(specialization: GSD)
M.Sc. in Geology
B.Sc. in Geology, Chemistry, Zoology

Area of Interest
Remote Sensing and GIS application in Mineral Expolartion,
Structural Geology, Geophysics and Siesmology, Hydrogeology, Natural Hazards Monitoring

Software Skills
Arc GIS, QGIS, Erdas Imagine, SNAP,
AutoCad, ENVI, Python

kiranjavagalshetty@gmail.com

Kiran J M

Qualifications
PGD in Remote Sensing and GIS
(specialization: FED)
B.Sc. (Hons.) in Forestry

Area of Interest
Remote sensing and GIS in Forestry

Software Skills
Arc GIS, Q GIS, ERDAS, GEE, R Studio

madhu12rane@gmail.com

Madhura Chandrashekhar Rane

Qualifications
PGD in Remote Sensing and GIS
(specialization: SDS)
MSc. in IT
BSc. in IT

Area of Interest
Geospatial visualization & business intelligence software development, cloud & big data, AI, ML, Data Science, Data modeling ETL

Software Skills
Python, PostgreSQL, Tableau, Presto, Google Earth Engine, QGIS, Nodejs, ERDAS Imagine, JavaScript, ArcGIS, ENVI, SNAP, PostGIS, Flask, Cloud Compare, MongoDB, GeoPandas, GeoServer, Potree, Salesforce, Adobe Analytics, Microsoft office, Shell script, MSSQL, neo4j

goswamimeera99@gmail.com

Meera Goswami

Qualifications
PGD in Remote Sensing and GIS
(specialization: NHDRM)
PhD in Environmental Science
M.Sc. in Environmental Science
B.Sc. in Zoology, Botany, Chemistry

Area of Interest
Air quality studies, climate change, forest fire assessment and mapping, and environmental impact assessment

Software Skills
QGIS, ArcGIS, ENVI, Google earth pro, Google Earth Engine, ERDAS Imagine, SNAP, MATLAB, R-Studio, Python, ILWIS

nc2588132@gmail.com

Neha Chouhan

Qualifications
PGD in Remote Sensing and GIS
(specialization: GSD)
M.Sc. in Core geology
B.Sc. in general science

Area of Interest
Geotechnical investigation (RMR/SMR), Landslide investigation, RAMMS (debris flow)

Software Skills
ERDAS, ENVI, ARCGIS, QGIS, RES-2D (Resistivity survey, SWAN (Seismic survey), ID (GPR), ILWIS, SNAP, Python

ar.nishantkumar21@gmail.com

Nishant Kumar

Qualifications
PGD in Remote Sensing and GIS
(specialization: URSD)
M.Plan. in (Master in Urban and Regional Planning)
B.Arch. in (Bachelor in Architecture)

Area of Interest
Remote Sensing and Gis application in Urban and Reginal Studies

Software Skills
Google Earth Engine, ArcMap, QGIS, ERDAS, Autocad, Sketchup, Microsoft office, Ecognition, Python

niteshdadhwal88@gmail.com

Nitesh Kumar

Qualifications

PGD in Remote Sensing and GIS
(specialization: WRD)
M.Sc. in (Environmental Sciences)
B.Sc. (Hons.) Forestry

Area of Interest

Climate change Trend Analysis,
Hydrologic and
Hydrodynamic modelling,
Environmental Impact Assessment,
Glaciology, Water Quality Mapping and
Assessment,
Flood Monitoring and Management,
Watershed Management,
Water Balance Studies,
Ecohydrology and Biodiversity
Conservation, Micro and Macro-Scale
Hydrological Studies

Software Skills

ArcGIS, QGIS, ERDAS Imagine, SNAP,
Python, R studio, Google Earth Engine,
HEC-HMS, HEC-RAS,
Microsoft (Word, Excel, Power Point),
ILWIS, CROPWAT

pathakmitakshi@gmail.com

Mitakshi Pathak

Qualifications

PGD in Remote Sensing and GIS
(specialization: GSD)
M.Sc. in (Geology)
B.Sc. in (Geology)

Area of Interest

Application of Remote Sensing and GIS
in Geology, Geomorphology,
Hydrology, GIS, Microwave Remote
Sensing, GNSS, Spatial Analysis,
SAR data Processing,
Mineral Exploration, Petrology

Software Skills

ArcGis, QGIS, Surfer, ENVI,
ERDAS, ERDAS Imagine,
R programming, Python, SNAP, Google
Earth Pro, RES-2D

pyanand2425@gmail.com

Poonam Yadav

Qualifications

PGD in Remote Sensing and GIS
(specialization: FED)
M.Sc. in (Environmental science)
B.Sc. (Hons.) in Botany

Area of Interest

Biomass and productivity assessment,
Forest Carbon dynamics,
Climate Change, Forest Mapping and
Monitoring, Forest Fire Monitoring and
assessment,
Forest Ecology -species Mapping and
Monitoring, Microwave and
LIDAR Remote sensing,
Forest inventory,
Forest canopy analysis,
Landscape ecology

Software Skills

ArcGis, QGIS, ERDAS Imagine,
ENVI, SNAP, R-Studio,
Google Earth engine,
MS office, Mapinfo

yadav.prachi158@gmail.com

Prachi Yadav

Qualifications

PGD in Remote Sensing and GIS
(specialization: WRD)
M.Tech. in (Soil and Water Engineering)
B.Tech. in (Agricultural Engineering)

Area of Interest

Integrated Watershed Management,
Climate change, Hydrological and
Hydrodynamic modelling,
Water body mapping and monitoring,
Flood mapping and
monitoring using SAR,
Satellite Altimetry,
Groundwater and Surface water
hydrology,
Satellite image processing and analysis

Software Skills

Python, R, SQL, Google Earth Engine,
ENVI, ILWIS, ArcGIS, QGIS, ERDAS Imagine,
VIC, SWAT, HECRAS, HEC-HMS, SNAP,
BRAT, CROPWAT, MODFLOW,
Google Earth Pro, Microsoft Office

priya2001rawat@gmail.com

Priya Rawat

Qualifications
PGD in Remote Sensing and GIS
(specialization: SIAP)
Integrated MSc. Mathematics

Area of Interest
Photogrammetry, Remote Sensing,
Geographic Information Systems (GIS),
Mathematical Modeling,
Fuzzy Logic and Soft Computing
Techniques,
Multi-Criteria Decision Analysis (MCDA),
Digital Image Processing,
Geospatial Data Analysis and
Spatial Statistics, Operations Research and
Optimization Techniques,
AI/ML for Geospatial Applications,
Synthetic Aperture Radar,
SAR Data Processing

Software Skills
Python, MATLAB, R Studio,
ERDAS Imagine, QGIS, ArcGIS,
Pix4D, ENVI, SNAP, GeoServer, GDAL

priyanka111.iirs@gmail.com

Pusala Priyanka

Qualifications
PGD in Remote Sensing and GIS
(specialization: ASD)
B.Sc. (Hons.) in Agriculture

Area of Interest
Geospatial Data Science,
Precision Farming Services
using Machine Learning and Big Data,
Crop Monitoring and Irrigation
Management using IOTs and
Microwave Remote Sensing,
Agricultural Analytics

Software Skills
Python, SQL, R, C language,
Google Earth Engine, QGIS,
ArcGIS Pro, SNAP, ENVI,
ERADAS Imagine,
Google Earth Pro, Microsoft Office

pgd243975@gmail.com

Purvansh Garg

Qualifications
PGD in Remote Sensing and GIS
(specialization: SDS)
B. Tech in Computer Science

Area of Interest
Data Science, Geo AI,
Artificial Intelligence,
Spatial Analysis and Modelling,
Machine Learning, Big Data Analytics,
Natural Language Processing and
Computer Vision

Software Skills
Machine Learning,
Python, C++,
Jupyter Notebook, Spyder,
Linux, QGIS, Erdas Imagine,
GitHub, Tableau,
MongoDB, SQL, Arcgis Pro, ChatGPT

razatpandey@gmail.com

Rajat Pandey

Qualifications
PGD in Remote Sensing and GIS
(specialization: SDS)
M.Sc. in Natural Resource
Management
B.Sc. in Forestry

Area of Interest
Geospatial Data Science,
Machine Learning, Habitat
Suitability Analysis,
Big Data Analysis, Species
Distribution Mapping

Software Skills
Python, GEE, ArcGIS,
QGIS, ERDAS Imagine

rohithwarrier58@gmail.com

Rohith Rajan

Qualifications
PGD in Remote Sensing and GIS
(specialization: SDS)
Master of Computer Applications (MCA)
B.Sc. in (Computer Science)

Area of Interest
Web-GIS Development,
Big Data Analytics, Data Science,
Application Development, Software
Development

Software Skills
Python, Linux, JavaScript,
QGIS, PostGIS, Postgres,
DBMS, ERDAS, Machine
Learning, Imagine,
JAVA, ArcGIS, SNAP, ENVI

30.jadhavruturaj@gmail.com

Jadhav Ruturaj Sanjay

Qualifications
PGD in Remote Sensing and GIS
(specialization: NHDRM)
B.Tech. in Civil Engineering

Area of Interest
ADCIRC Model, Flood Mapping and
modelling, Disaster Management,
Sustainability & Climate Studies,
Drone Mapping

Software Skills
QGIS, ArcGIS, AutoCAD,
Google Earth Pro, HEC-HMS,
HEC-RAS,
DGCA Approved Drone Pilot,
AGIsoft, Metashape

sabhitajasrotia14012001@gmai

Sabhita Jasrotia

Qualifications
PGD in Remote Sensing and GIS
(specialization: GSD)
M.Sc.in Geology
B.Sc. in Botany, Zoology and Geology

Area of Interest
Application of Remote Sensing in Glaciology,
Mineral Exploration,
Landslides Hazard Analysis,
Natural Hazard and Disaster Management,
Geomorphology,
Hyperspectral Remote Sensing,
Geotechnical Investigation (RMR, SMR), SAR
Data Processing

Software Skills
QGIS, ArcGIS, ERDAS, ENVI,
SNAP, ILWIS, RES-2D, R,
Google Earth Engine (GEE),
SWAN (Seismic Survey),
RS-2 FEM (Finite Element Modelling),
IDS Georadar (GPR),
RAMMS (Debris Flow)

sanketbendrepatil96@gmail.co

Sanket Balasaheb Bendre

Qualifications
PGD in Remote Sensing and GIS
(specialization: WRD)
B.Tech. in Agriculture Engineering

Area of Interest
Integrated Water Resource
Management using Geospatial Technology,
AI/ML-Driven
Solutions for water resource applications.
Assessment of climate change impact,
Surface Water Dynamics
(Time-Series analysis), Hydrological and
Hydrodynamic Modeling, Mapping and
Simulation, Sediment Transport Analysis.
Monitoring and Management of Snow and
Glaciers, Water Quality, Flood,
Drought, Reservoir Storage and Release
(Realtime) Climate Resilient Water Resource
Planning. Geospatial Analysis for
Evapotranspiration Estimation, Irrigation
Planning, Crop Water Demand Mapping

Software Skills
ArcGIS, QGIS, ERDAS IMAGINE,
ENVI, ILWIS, SNAP,
GOOGLE EARTH PRO, GEE,
Python (Jupyter Notebook),
Google Colab), SWAT,
HEC-RAS, HEC-HMS, CROPWAT,
MODFLOW

geosatwik@gmail.com

Satwik Bhattacharya

Qualifications
PGD in Remote Sensing and GIS
(specialization: SIAP)
M.Sc. in Geography (Advanced Cartography)
B.Sc. (Hons.) in Geography with Physics and Mathematics

Area of Interest
Microwave Remove Sensingina, lidar Remote Sensing, Hyperspectral Remote Sensing

Software Skills
QGIS, ArcGIS, ERDAS IMAGINE, Snap, ENVI, MS Office, AgiSoft, Pix4D, Python, GEE, Google Earth Pro , Ecog, Jupyter

srvsingh0699@gmail.com

Saurabh Kumar

Qualifications
PGD in Remote Sensing and GIS
(specialization: GSD)
M.Sc. in Geology
B.Sc. in Geology

Area of Interest
Remote sensing, GIS and Traditional approach towards Sedimentology, Planetary Geology (Geobiology and Analogue geology), Mineral Exploration, Geochemistry, Geodynamics, Sea level changes, Cryosphere and climate change, Landslides, Tectonics, Seismology, Structural Geology emphasizing on Hyperspectal and SAR datasets

Software Skills
ArcGIS, QGIS, ERDAS Imagine, ENVI, Ocean Data View, Google Earth Pro, Google Earth Engine RS-2 FEM (Finite Element Modelling), IDS Georadar (GPR), RES-2D (Resistivity Survey), SWAN (Seismic Survey), ILWIS, RAMMS (Debris Flow), Python (Basic)

sayantansaga17@gmail.com

Sayantan Majumder

Qualifications
PGD in Remote Sensing and GIS
(specialization: GSD)
M.Sc. in Geography (Geomorphology)
B.Sc. (Hons. + PCM) in Geography

Area of Interest
RS and GIS in mineral exploration and identification,
AI/ML programmes in spatial defence applications, Prediction models in glaciology and
disaster management,
Advance surveying and Cartography,
Geopolitical Assessment,
Paleomagnetism,
Petrography, techniques in Archaeological site discerning

Software Skills
MS Office, QGIS, ArcMap, ArcGIS Pro, Erdas Imagine, Snap, ENVI, GEE, Python, Rstudio, Java, Puffinplot, Jupyter Notebook

tripathishrey092@gmail.com

Shreya Tripathi

Qualifications
PGD in Remote Sensing and GIS
(specialization: NHDRM)
M.Sc. in Environmental Science and Technology
B.Sc. in Life Sciences

Area of Interest
Natural disaster management, geospatial data analysis, climate change modelling

Software Skills
Qgis, Arcgis, ENVI, Irwis, R programming, Erdas

flyinmnk@gmail.com

Shubham Chauhan

Qualifications
PGD in Remote Sensing and GIS
(specialization: WRD)
B.Tech in Civil Engineering

Area of Interest
RS, GIS and GNSS applications in Cryosphere and Climate Change, Estimating snow and glacier parameters (Snow prediction models, snow depth, glacier dynamics), Mapping watershed boundaries, Hydrological modelling

Software Skills
ArcGIS, QGIS, Erdas Imagine, ENVI, SNAP, HEC-RAS, HEC - HMS, Python, Google Earth Pro

shubhamp.iirs@gmail.com

Shubham Prajapati

Qualifications
PGD in Remote Sensing and GIS
(specialization: FED)
MBA in Forest Management
B.Sc. (Hons) in Forestry

Area of Interest
Carbon Offset Projects and Nature Based Solutions

Software Skills
QGIS, ArcGIS, Google Earth Engine, Python, Erdas Imagine, MS Office

shubhamsuthar5561@gmail.co

Shubham Suthar

Qualifications
PGD in Remote Sensing and GIS
(specialization: FED)
M.Sc. in Forestry (Wildlife Science)
B.Sc. in Forestry

Area of Interest
Remote Sensing & GIS,
Forest Resources &
Ecosystem Analysis,
Wildlife Conservation &
Habitat Mapping,
Ecological Modelling & Biodiversity Assessment,
Land Cover &
Land Use Change Analysis,
Geospatial Data Science & Predictive Modelling,
Lidar & SAR Data Processing, AI/ML Applications in Remote Sensing,
Environmental Monitoring & Climate Change Studies

Software Skills
ERDAS IMAGINE, ArcGIS,
QGIS, Google Earth Engine (GEE),
ENVI, SNAP, PostgreSQL,
PostGIS, Python, R, MATLAB,
eCognition, ILWIS, MaxEnt,
Google Earth Pro,
MS Office, Fragstats

phogats481@gmail.com

Sonika

Qualifications
PGD in Remote Sensing and GIS
(specialization: FED)
M.Sc. in (Environmental Science)
B.Sc. in (Life Sciences)

Area of Interest
Remote Sensing and GIS applications in Environmental and Ecological data processing, Ecological Modeling, Hyperspectral Remote Sensing, SAR, LiDAR, Climate change, Habitat fragmentation, Saptial analysis

Software Skills
GIS, Arc GIS, Qgis, ERDAS Imagine, Google Earth Engine, R, MATLAB, ENVI

sumedhapgd2024@gmail.com

Sumedha Biswas

Qualifications

PGD in Remote Sensing and GIS
(specialization: FED)
M.Sc. in Zoology
B. Sc. in Zoology

Area of Interest

Remote Sensing and GIS applications in Ecology and Conservation, Wildlife monitoring, Climate change, Habitat and Corridor mapping, Spatial analysis

Software Skills

QGIS, ArcGIS, ERDAS Imagine, ENVI, RStudio, Python, Google Earth Engine

surajvekhande123@gmail.com

Suraj Ramesh Vekhande

Qualifications

PGD in Remote Sensing and GIS
(specialization: NHDRM)
CRS (Certificate in RS and GIS)
M.Sc. in Environmental Science
PGD (Industrial Safety Health and Environment)
B.Sc. (Hons.) Physics

Area of Interest

Natural hazards and disaster management, Climate Change Studies, Environmental Monitoring, Environmental Impact Assessment, Flood Monitoring and mapping, Environmental Pollution, Remote Sensing in Natural Resource Management, and Conservation Ecology

Software Skills

ArcPy, PyQGIS, QGIS, Erdas, Matlab, R, ArcPro, ArcMap, Autocad Civil 3D, GEE, Jupyter, Snap, ENVI, ILWIS, Android Studio, Open LCA, Arc GIS City Engine, HTML, Google Collab, GitHub, VB Script

swadeepsagariirs@gmail.com

Swadeep Sagar

Qualifications

PGD in Remote Sensing and GIS
(specialization: GSD)
M.Sc. in Geology
B.Sc. in Geology

Area of Interest

Application of Remote Sensing and GIS in Mineral Exploration and Hydrocarbon Exploration, SAR data processing, Geotechnical Investigation (RMR/SMR), Planetary Science, Microwave Remote Sensing, Structural geology, Ore Geology, Geomorphology, Hydrogeology, Landslides Investigation

Software Skills

R Programming, Python, ArcGIS, QGIS, ERDAS Imagine, ENVI, Fragstats, Google Earth Pro, Google Earth Engine, RS-2 [FEM (Finite Element Modelling)], SNAP, IDS Georadar (GPR), RES-2D (Resistivity Survey), SWAN (Seismic Survey), ILWIS, RAMMS (Debris Flow)

swathis.geo@gmail.com

Swathi S

Qualifications

PGD in Remote Sensing and GIS
(specialization: GSD)
Integrated M.Sc. in Applied Geology

Area of Interest

Application of Remote Sensing and GIS in Geology, Geomorphology, Hydrogeology, Planetary Science, GIS, Microwave Remote sensing, Spatial Analysis, SAR data Processing, Geotechnical Investigation (RMR /SMR), Landslide Investigation, Natural Hazards and Disaster Management

Software Skills

ArcGIS, QGIS, ENVI, ERDAS Imagine, ILWIS, RS2 (FEM- Finite Element Modelling), R programming, RES-2D (Resistivity Survey), SWAN (seismic survey), RAMMS (Debris flow), Python, SNAP, Google Earth Pro

akashtagare25@gmail.com

Akash Hemant Tagare

Qualifications
PGD in Remote Sensing and GIS
(specialization: WRD)
M.Sc. in Environment Sciences
B.Sc. in Zoology

Area of Interest
Water Resources Management, Watershed Management, Water Resources conservation and planning, Environmental Impact Assessment, Water resources planning and Development, Ground water management, Hydrological Modelling, Glacial lake monitoring, Ground water Quality assessment, Site suitability for various water structures as dams, Flood hydrological modelling and assessment, urban flooding and risk assessment, Evapotranspiration

Software Skills
ILWIS, CROPWAT, ARC GIS, QUANTUM GIS, SNAP, R- studios, Python, Google Earth Engine, Google Earth Pro, ERDAS, ENVI, HEC-RAS, HEC-HMS, ARC-MAP, GRASS GIS

tejashwinee.iirs@gmail.com

Tejashwinee Sonowal

Qualifications
PGD in Remote Sensing and GIS
(specialization: WRD)
M.Sc. in (Geology)
B.Sc. in (Geology)

Area of Interest
Groundwater and surface water Hydrology, hydrological and Hydrodynamic modelling, Water quality mapping and Monitoring, Watershed, flood mapping and Monitoring using sar, Satellite image processing And analysis

Software Skills
QGIS, ArcGIS, ERDAS, ILWIS, CROPWAT, ENVI, SNAP, GEE, EEFLUX, HEC-HMS, HEC-RAS, MS-OFFICE, Basic of Python and R, SWAT, Google Colab

kharayatudita07@gmail.com

Udita Kharayat

Qualifications
PGD in Remote Sensing and GIS
(specialization: GSD)
M.Sc. (Geology)
B.Sc. in (Geology, Mathematics, Physics)

Area of Interest
Application of Remote Sensing and GIS in Ground Water and Oil Exploration, Mineral Exploration, Planetary Sciences, Natural Hazard and Disaster Management, Glaciology, Geomorphology, Structural Geology, Landslide Investigation, Himalayan Geology, Microwave Remote Sensing, Spatial Analysis and SAR Data Processing

Software Skills
ERDAS, ENVI, ArcGIS, QGIS, RES-2D (Resistivity survey), Python, R studio, Google Earth Engine, Google Earth Pro, SNAP

vinayiirs32@gmail.com

Chandam Vinay Kumar

Qualifications
PGD in Remote Sensing and GIS
(specialization: SIAP)
B.Tech. in Civil Engineering

Area of Interest
Applications of remote sensing and gis in structural engineering and highway engineering, BIM 3d modelling

Software Skills
Autocad, revit structures, Etabs (structural) , 3ds max prime avera (project management), Erdas, envi, snap, qgis

badetiyayuganshu26@gmail.co

Yuganshu Badetiya

Qualifications
PGD in Remote Sensing and GIS
(specialization: SDS)
Integrated M.Sc. Statistics

Area of Interest
Spatial data modeling,
Image analysis, Machine learning,
Estimation theory,
Time series analysis,
Big data analytics, GIS

Software Skills
Python, R, GEE, Qgis,
Arcgis, Erdas, ENVI, PostgreSQL

aditichakradhari2608@gmail.co

Aditi Chakradhari

Qualifications
PGD in Remote Sensing and GIS
(specialization: WRD)
B.Tech. in Civil Engineering

Area of Interest
Watershed management,
Hydrological modelling, Irrigation &
Drainage System, Climate Change,
Water Quality Monitoring and
Mapping, Satellite Altimetry

Software Skills
ArcGIS, QGIS, Google Earth Engine,
HEC-HMS, HEC-RAS, ERDAS,
ENVI, SNAP, SWAT, CROPWAT,
ILWIS, SWMM, EPANET,
BRAT, MODFLOW, AutoCAD, Python,
Microsoft Office.

vishal.chaubey17@outlook.com

Vishal Kumar Chaubey

Qualifications
PGD in Remote sensing and GIS
(specialization: NHDRM)
B.Tech. in Geoscience Engineering

Area of Interest
Microwave Remote sensing (SAR),
Subsidence mapping,
Landslides, GNSS,
Earthquake, Geological mapping,
3D mapping, AI ML, Geostatisitics

Software Skills
Python, Qgis, Erdas imagine,
MS office suite, Parbat, SAR
processing software

Picture Gallery

Sports Facilities at IIRS Campus

Badminton Court

Outdoor Gym

TT/ Billiards

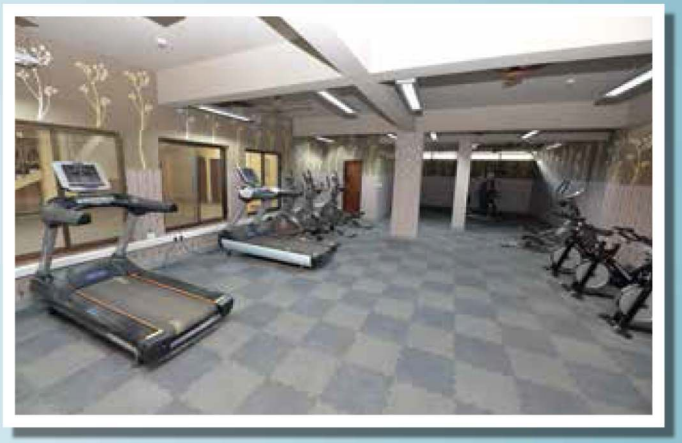
Volleyball Court

The Golden Jubilee Hostel

The Golden Jubilee Hostel (GJH)

All Weather Swimming Pool (GJH)

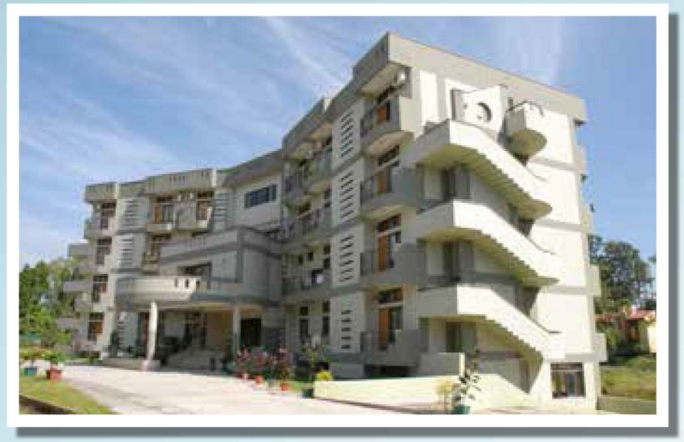
Exhibition Area (GJH)



Indoor Gym (GJH)

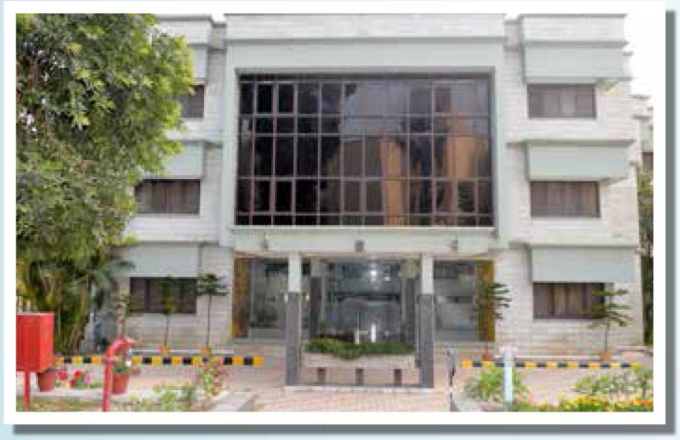
Various Other Hostels at IIRS

Vikram Sarabhai Hostel



Godavari Hostel

Alaknanda Hostel



Yamuna Hostel

View of IIRS Campus

Main Gate (Outside View)

Main Gate (Inside View)

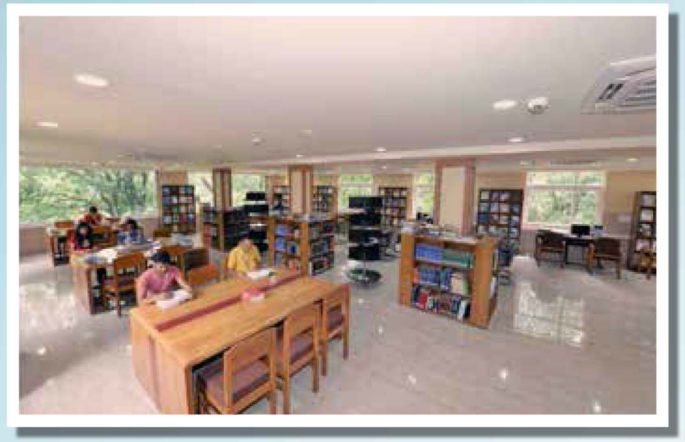
Security Gate

Main Building Entrance

Picture Gallery

Major Supporting Facilities at IIRS

Central Dining Facility at IIRS Campus



IIRS Library

Aryabhatta Lecture Theatre

IIRS Auditorium

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for PGD

N.B. :

- *Credentials and Abstract details about students in this placement brochures are self declared by the respective student only.*
- *PPEG has initiated preparing the Placement Brochure and posting it on website for open access so as to enable direct access by companies for the respective students. Placement exercises are very subjective & based upon T&Cs, agreeable to students & employer as applicable.*

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G20 भारत 2023 INDIA

वसुधैव कुटुम्बकम्
ONE EARTH • ONE FAMILY • ONE FUTURE

Azadi Ka Amrit Mahotsav

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