



भारतीय सुदूर संवेदन संस्थान  
Indian Institute of Remote Sensing  
देहरादून / Dehradun

*iirs*

**Placement**  
Brochure **2021**

➤ 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 is also host for Centre for Space Science & Technology Education in Asia and the Pacific (affiliated to the 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, 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 and 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) Awareness programmes, and iii) Special on-demand/tailor-made courses. The Institute has so far trained 12,728 professionals including 1239 from abroad representing 97 countries from 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, 2651 Institutes/Organizations spread across India are networked with IIRS. More than 2,88,533 participants have benefitted so far from IIRS Outreach Programmes.

The Placement Brochure of 2021 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 Industries, Academia and other Institutions to pick the talent and also provide opportunities to the course participants for their placement.

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

A handwritten signature in blue ink, which appears to read 'Prakash Chauhan', written in a cursive style.

**Dr. Prakash Chauhan**  
Director, IIRS

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# 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 12,728 professionals and students have been trained/educated so far. About 50 researchers who have worked under IIRS faculty have received PhD degrees till date from various Universities.

To widen its outreach, IIRS has started live and interactive Distance Learning Programme (DLP) since 2007. As on date, 2651 Institutes/ Organizations are networked with IIRS and more than 2,88,533 participants have attended various basic and advanced courses conducted by the Institute. 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 one of the main research focus. 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 (BoS) and Academic Council (AC) consisting of eminent subject experts. A team of seventy six dedicated scientists at IIRS contribute in delivering the course contents. Guest faculties from reputed organizations/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,

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

and

3. 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) Awareness programmes, and iii) Special on-demand/tailor-made courses. The Institute has so far trained 12,728 professionals including 1239 from abroad representing 97 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, 2,651 institutions and organizations spread across India are networked with IIRS. More than 2,88,533 participant 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 Andhra University, 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 Ph.D. 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.

## IIRS - GROUPS AND DEPARTMENTS

### **Programme Planning and Evaluation Group**

The Programme Planning and Evaluation Group (PPEG) coordinates the training, education and capacity building, human resources development, budget, hostels, library, student affairs, placements, etc. activities of the institute. It also coordinates the inter-centre activities and liaison with other institutions in the country and abroad. PPEG also maintains the IIRS alumni database. It is also responsible for initiating and coordinating several other techno-managerial activities of the Institute.

### **Budget Planning and Monitoring Department**

With the increasing responsibilities and mandates of the institute it is pertinent to mention that the budgetary allocations have increased in recent financial years. This has spearheaded gamut of techonmanagerial and financial activities and other critical correspondences with Hqs. BPMD is one of the youngest department created in IIRS to take care of pertinent budget planning and monitoring related formalities and procedures in the Institute.

### **Central Library**

The Library is dedicated to serve the information needs of the scientists, researchers and students of the Institute. Few highlights of IIRS Library are (i) Remote access to library e-resources (ii) Strengthening information resources (iii) Journal TOC (iv) Collection development (v) Inter Library loan / delivery with local/DOS libraries (vi) User education/orientation.

## IIRS - GROUPS AND DEPARTMENTS

### **Agriculture & Soils Department**

The Agriculture and Soils Department (ASD) is one of the oldest department established in 1966. ASD has carried out many R&D and consultancy projects in soil surveys, watershed prioritisation, land evaluation, agricultural resources inventory, agro-meteorology, soil moisture, etc. Some of the research projects (ongoing/ completed) at ASD are process based modeling for soil erosion, soil carbon sequestration, soil quality, digital soil mapping, carbon accounting modeling by integrating flux observation, drought monitoring, and climate change impact studies etc. The department is well equipped with a variety of portable ground-truth equipments for quantitative measurements of bio-physical parameters of crops, and a Central Analytical Facility for soils for the physico-chemical analysis of soils.

### **Forestry & Ecology Department**

The Forestry and Ecology Department (FED) was established in 1966 with the aim of providing training and skill development on the utility of aerospace remote sensing for forest resource inventory, monitoring and management. Nationwide forest cover mapping, Nationwide biome level characterization, Indian forests biodiversity characterisation at landscape level are the major projects planned and executed by the department. A few other important research projects carried out by the department are growing stock and biomass assessment, ecosystem dynamics, wildlife habitat modelling, ecological and wildlife corridor modelling and connectivity analysis, national level carbon flux measurement and modelling, grassland mapping and carrying capacity estimation, etc.

### **Marine & Atmospheric Sciences Department**

The Marine & Atmospheric Sciences Department (MASD) was formed in year 1986 and offers training & education courses and provides research opportunities in the areas of coastal processes, marine resources, ocean and atmospheric sciences applications. The department has contributed in different research and operational projects of ISRO/DOS, such as National Action Plan for Climate Change Project (NAPCCP), Land Degradation Mapping on 1:50,000 scale, Oceansat-II data utilization project, National Carbon Project (NCP), SARAL-AltiKa project, etc. Some of the research projects (ongoing/ completed) at MASD are atmospheric pollution modeling, extreme events forecasting, coastal hazards and their mitigation, ocean color and primary productivity, upper-ocean geophysical parameter retrieval, aerosol optical depth, etc.



## IIRS - GROUPS AND DEPARTMENTS

### **Urban & Regional Studies Department**

To meet the growing demand and challenges of urban areas and towards regional development, the Urban and Regional Studies Department (URSD) was established in 1983 in collaboration with ITC, the Netherlands. The department is working in close coordination with Town and County Planning Departments/ Urban Local Bodies with the aim to spread the benefits of remote sensing technology at grassroots level. It has developed expertise in the field of urban sprawl and growth modeling, urban environment and regional analysis, urban utilities and facilities mapping and modelling, urban micro climate, urban hazards modelling, etc. Some of the research projects (ongoing/ completed) at URSD are urban micro-climate zonation for sustainable Smart City planning, modeling of urban air pollution, urban material detection using hyperspectral RS data, urban flood modeling, solar energy potential assessment, etc. The department regularly conducts special courses for town and country planning officials from state and central government departments.

### **Water Resource Department**

Water Resources Department (WRD) was established in the year 1986 and since then it has emerged as leader in capacity building and research in various fields of hydrology and water resources management. The department specializes in remote sensing based hydrologic parameter retrieval and modelling; data assimilation; watershed characterization and conservation planning; snow and glacier melt runoff modelling; irrigation water management; flood mapping, monitoring and modelling; drought assessment; soil erosion and sediment yield modelling; reservoir sedimentation; surface and ground water studies; climate change impact assessment; and hydro-environmental impact assessment and site suitability analysis of water resources projects. The department has initiated advanced research in the field of flood early warning system; polar remote sensing; microwave and hyperspectral remote sensing applications. The department is well equipped with latest field and portable equipments. It regularly conducts special courses for officials of state and central water resources department.

## IIRS - GROUPS AND DEPARTMENTS

### **Geospatial Technologies and Outreach Programme Group**

The Geospatial Technologies and Outreach Programme (GTOP) Group comprises of three departments namely, Photogrammetry and Remote Sensing, Geoinformatics, and Geoweb Services, IT and Distance Learning Department.

### **Photogrammetry & Remote Sensing Department**

Photogrammetry and Remote Sensing Department (PRSD) established in 1966 is imparting professional training in the field of photogrammetry, cartography, remote sensing and image processing. It has successfully executed a number of studies/projects on large-scale surveys and preparation of photo-maps in different parts of the country, generation of national/global level database on land use/land-cover, augmentation of forest cover information in India and Myanmar, generation of land surface parameters for monsoon variability studies using Regional Climate Model, etc. Recent research projects at PRSD are UAV data processing for terrain information extraction, LiDAR-RS, SAR Tomography, SAR calibration, hyperspectral remote sensing, automated features extraction, Large scale mapping, Machine and Deep Learning, etc.

### **Geoinformatics Department**

This department was set-up in 1996 in collaboration with University of Twente, Faculty of Geo-information Science & Earth Observation (ITC), The Netherlands, for offering courses in the field of Geo-information Science. The M.Sc. & PG Diploma course in Geo-information Science and Earth Observation (specialization in Geoinformatics) is one of its major programme offered since 2002 as a part of Joint Education Programme (JEP) of IIRS and ITC, The Netherlands. The department conducts training, education and research in the field of Geoinformatics like GIS, Web GIS, Geospatial modeling, 3D City Models, Spatial Data Mining, Health GIS and software tools using FOSS4G. Recently the department is offering courses in the upcoming fields like Big data Analytics, AI based machine learning and deep learning algorithms, Tourism GIS and GIS for Supply Chain Management. The GID department has developed many geoportals which are being hosted from IIRS like air quality, geoladakh and IBIN. Many geospatial solutions with mobile app and dashboard have been developed like Swachh Bharat Abhiyaan, forest fire reporting for state forest department, geotagging for animal husbandary and kumbha mela applications.

### **Geoweb Services, IT & Distance Learning**

Geoweb Services, IT and Distance Learning (GIT&DL) Department is recently formed Department at IIRS to meet the increasing demand of capacity building, information dissemination and research in these areas. GIT&DL department is involved in capacity building & R&D activities in Web-GIS, Mobile GIS, Location Based Services (LBS), Cloud GIS, etc. It is also carrying out capacity building in Geospatial technologies through Distance Learning mode (Live & interactive and e-learning), R&D activities on active learning, Digital contents creation, R&D activities on 2D and 3D simulations and virtualization, etc. It is also carrying out the IT Infrastructure development, set-up and operations for the Institute.

## IIRS - GROUPS AND DEPARTMENTS

### **Geosciences and Disaster Management Studies Group**

The Geosciences and Disaster Management Studies Group (GDMSG) consist of two department namely, (i) Geosciences Department and (ii) Disaster Management Studies Department.

#### **Geosciences Department**

Geosciences Department, one of the oldest department of IIRS, was established in 1966 to provide professional training to scientists and technical staff of Government and Public Sector organisations dealing with geoscientific applications such as geological survey and mapping, mineral and oil exploration, engineering geological survey, ground water exploration, etc. It has successfully executed a large number of projects which include Geodynamics of the Himalaya, Landslide modelling, Seismic Hazard Assessment, Active Fault mapping, Liquefaction modelling, Differential Interferometric SAR (DInSAR) based land surface displacement modelling, and coal mine fire and subsidence modelling. The present thrust areas of the department include microwave remote sensing and hyperspectral image analysis, GNSS and seismic data analysis, glacial dynamics, planetary geology, spaceborne gravity and ground based geophysical data analysis and engineering geological studies.

#### **Disaster Management Sciences Department**

The Disaster Management Studies Department (DMSD) is dedicated towards capacity building and research in assessment, monitoring and modelling of natural and anthropogenic disasters with prime focus on prevention and mitigation measures leading to disaster risk reduction. The DMS Department conducts PG Diploma and M.Tech. in RS and GIS applications in Natural Hazards and Disaster Management Studies with specialisation in Hydro-meteorology and Geological hazards. Disaster Management supports activities at IIRS are carried out by several departments and significant activities include Landslide modelling, Seismic Hazard Assessment, Forest Fire Risk Assessment, Flood modelling, extreme weather prediction and atmospheric pollution studies. Present focus is on development of EWS and early detection techniques for various natural hazards using EO and ground based observations.

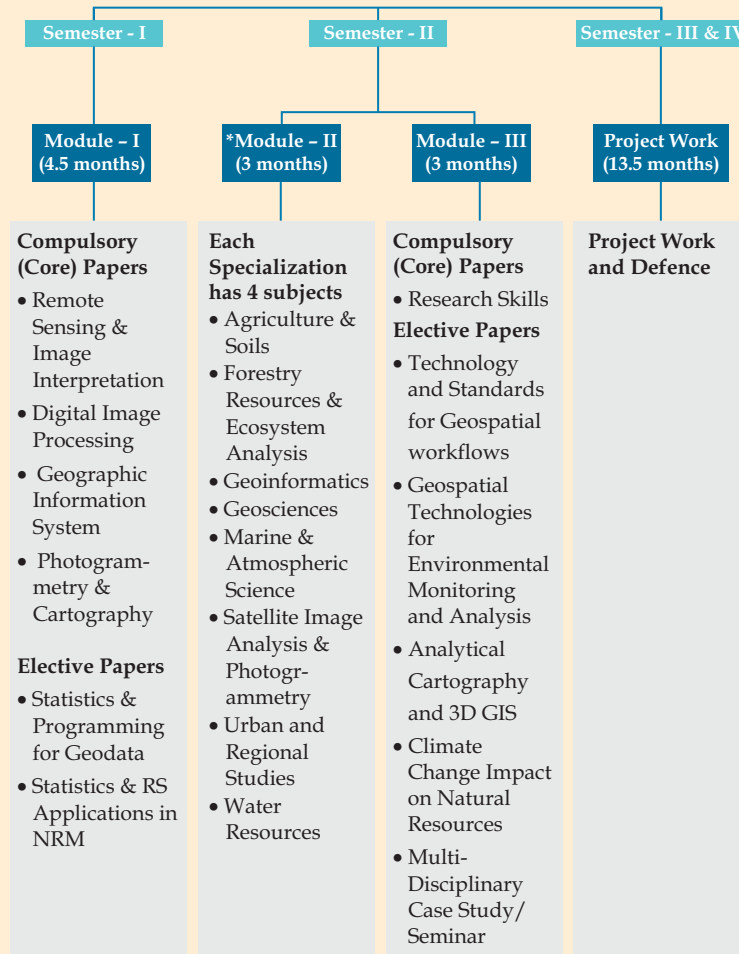
## M.Tech. (RS&GIS)

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 Resources, Urban and Regional Planning, Atmospheric Studies 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 three choice based elective papers. Two elective papers, includes 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 interdisciplinary case study seminar out of the 60 topics offered from 9 specializations. During the course, a candidate can opt for one of the following 9 specializations-

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

### M.Tech. Course Structure



\*Core papers under each specialization as per table given on page no. 27



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**Akshita Tomar**

**Qualifications:**

M.Tech. in Remote Sensing & GIS  
(Specialization: Agriculture & Soils)

B.Sc. Hons. (Agriculture)

**Area of Interest:**

Soils quality, Climate change, artificial intelligence in agriculture, Crop Phenology, Environmental Impact Assessment, Soil degradation assessment, Crop classification

**Software Skills:**

R, Python, ArcGIS, QGIS, ENVI, ERDAS Imagine, SNAP, GrADS

**Thesis:**

Assessing soil quality using remote sensing data employing machine learning techniques - a study in alluvial plains in India

**Abstract:**

Soil quality can make great influence on the regional distribution of vegetation, community biomass, and plant size, as well as the species composition. The evolution of technology has brought many changes in agriculture. Remote sensing & GIS has the capacity to map, monitor and predict soil property. Machine Learning is efficient techniques can be developed for solving complex soil data sets using machine learning to improve the effectiveness and accuracy of the Classification of large soil data sets.

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**Anagha Murali**

**Qualifications:**

M.Tech. in Remote Sensing & GIS  
(Specialization: Satellite Imagery Analysis & Photogrammetry)

B.Tech. (Civil Engineering)

**Area of Interest:**

Lidar Remote Sensing, Lidar Data Processing, Machine Learning, Cartography

**Software Skills:**

Python, C, R, ArcGIS, QGIS, ERDAS Imagine, ENVI, SNAP, Google Earth Engine AutoCAD, Revit

**Thesis:**

Coupling Space borne Range and Intensity Data for Enhanced Terrain Parameter Estimation and Feature Extraction

**Abstract:**

Spaceborne lidar satellites provide data with high vertical accuracy and hence is a beneficial data source in forestry, cryosphere and urban studies where vertical accuracy is a critical parameter. The study is aimed at coupling ICESat, ICESat-2 data and satellite images for improved estimation of terrain parameters like height and slope. Analyzing the potential of data integration in feature extraction is studied.

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**Ankit Prakash**

**Qualifications:**

M.Tech. in Remote Sensing & GIS  
(Specialization: Forest Resources & Ecosystem Analysis)

B.Sc. Hons. (Forestry)

**Areas of Interest:**

Biomass assessment, SAR and LiDAR application in forestry, Natural resource management, Forest cover mapping and monitoring, Wildlife suitability mapping

**Software Skills:**

R, Python, ArcGIS, QGIS, ERDAS Imagine, ENVI, SNAP, Google Earth Engine, PolSAR pro, MaxEnt

**Thesis:**

Estimation of Above Ground Biomass using SAR and LiDAR

**Abstract:**

Biomass is recognized as one of the most critical ranges of priority which directly or indirectly influence the atmosphere. The uncertainty that occur due to carbon emission from forest is considered as the biggest source responsible for climate change, hence forest biomass is an imperative forest characteristic which gives profitable input regarding the conservation of forest and adverse climate change, therefore it is important to monitor forest biomass which for a larger area is only possible through remote sensing. This study aims at utilizing space-borne SAR data and LiDAR data for developing a methodology for the estimation of above ground biomass.

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### Ankur Sinha

#### Qualifications:

M.Tech. in Remote Sensing & GIS  
(Specialization: Urban and Regional Studies)

#### Area of Interest:

Air pollution, Machine Learning & Data Science, WebGIS, 3D modelling, Application of Thermal and Microwave RS in urban applications, Urban Planning, Infrastructure and utilities, Metro Projects and Land acquisition for development projects

#### Software Skills:

Python, QGIS, ArcGIS, ENVI, ERDAS Imagine, Blender, AutoCAD, Google Earth Engine, PostgreSQL, City Engine

#### Thesis:

Long Term Trend of Aerosol Optical Depth (AOD) in Indian cities

#### Abstract:

Aerosols in particular consist of PM10 and PM2.5 which is known to be more fatal to human health. In this study trend of AOD for the time period of 2001-2020 is carried out and using trend, analysis is done to find major sources as well phenomenon that regulate aerosol concentrations in atmosphere is analyzed.

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### Anushree Jain

#### Qualifications:

M.Tech. in Remote Sensing & GIS  
(Specialization: Satellite Imagery Analysis & Photogrammetry)

B.E. (Electronics & Telecommunication)

#### Area of Interest:

Atmospheric Studies, Climate Change, Image Processing, Sensor Configurations, VLSI circuits and design

#### Software Skills:

Python, C++ , MATLAB, VHDL, JAVA, QGIS, SNAP, SeaDAS, ERDAS Imagine, MySQL, Xilinx ISE, Quartus Prime, Keil, Arduino IDE, LabVIEW, ModelSim

#### Thesis:

Development and Analysis of AOD retrieval algorithm over land using OCEANSAT-2/OCM-2 data

#### Abstract:

Satellite retrieval of aerosol properties requires the decoupling of the aerosol components from the at-sensor signals. It becomes especially challenging to determine aerosol properties for land since surface reflectance has a major contribution to the signals reaching top of atmosphere. In this project a Physics based algorithm is developed using deep blue bands to retrieve AOD at 550nm. Various inputs are then analyzed for their sensitivity to the algorithm, and thorough analysis is done.

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### Arpan Chaudhuri

#### Qualifications:

M.Tech. in Remote Sensing & GIS  
(Specialization: Geosciences)

M.Sc. (Applied Geology)

#### Area of Interest:

Glacier Dynamics, Climate Change, GIS and Image Processing, Geomorphology, Sedimentology, Ore and Exploration Geology

#### Software Skills:

Python (Basic), ArcGIS, QGIS, ERDAS Imagine, ENVI, SNAP, GrADS, CorelDRAW, ImageJ, Microsoft Office

#### Thesis:

Study of Spatio-temporal Variations of Surface Velocity of Glaciers in Western Himalaya from 2008 to 2020 and Its Implications

#### Abstract:

Surface velocity of glaciers deals with rate of ice discharge for that reason it contributes to the monitoring of mass balance of glaciers. Monitoring of glacier velocity over time can detect instability of glaciers which can be used to mitigate upcoming hazards. Glaciers of Himalayan Mountain range, show thinning and retreating pattern for last few decades. Remote Sensing techniques provide robust methods to model and monitor these inaccessible areas.

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## Arunim Anand

### Qualifications:

M.Tech. in Remote Sensing & GIS  
(Specialization: Urban & Regional Studies)  
B.E. (Civil Engineering)

### Area of Interest:

Climate Change Studies, Hydrological/Hydrodynamic Modelling, Surveying, UAV, Traffic Studies, Urban Growth Modelling, Urban Utility and Services Management, Statistics, Data Science

### Software Skills:

Python, R, JavaScript, HTML, SQL, ArcGIS, QGIS, ENVI, ERDAS Imagine, SWMM, HEC-HMS, HEC-RAS, IDRISI, LPS, Grads, Maxent, SPSS, Tableau, AutoCAD, STAAD Pro, Microsoft Office

### Thesis:

Impacts of urbanisation and extreme events on urban floods for a rapidly growing city

### Abstract:

Increase in the frequency of urban floods in recent decades has posed huge challenges to the city administration and urban planners. Urban floods cause huge destruction and inconvenience ranging from traffic jams to severe property damage and result in cities being inundated for days. This study is an attempt to analyze the role of rapid urbanization and climate change in the occurrence of urban flood events along with estimating the hydrological outputs using SWMM and HEC-HMS. The study will help in understanding the flood risks in the city based on its hydrodynamic setup.

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## Aryan Natwariya

### Qualifications:

M.Tech. in Remote Sensing & GIS  
(Specialization: Marine and Atmospheric Sciences)  
M.Sc. (Geography)

### Area of Interest:

Atmospheric and Cloud Modelling, Satellite Image Processing and analysis, Surveying and Cartography, Meteorology, LiDAR, Atmospheric energy budget, Surface energy balance, Pollution studies, Urban Studies, Marine Sciences, Agriculture fires, Geospatial application for Natural Resource Management

### Software Skills:

Python, R, FORTRAN, MATLAB, JavaScript/HTML/PHP, ArcGIS, QGIS, ERDAS Imagine, LPS, ENVI, SNAP, GrADS, OPAC, SBDART, Google Earth Engine, AWS/Google Cloud, Sigmaplot, SeaDas, Linux OS

### Thesis:

Climatological variation of Aerosol Black Carbon and Radiative Forcing over South and East Asia

### Abstract:

The study focuses on the impact of aerosol and black carbon on aerosol radiative forcing. The Spatio-temporal variability of aerosols and BC emissions is identified over the major cities of the region for a long term and the hotspot regions are identified using multi-satellite data. The RF is estimated using Radiative Transfer model over major cities in the region.

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## Ashwini Dubey

### Qualifications:

M.Tech in Remote Sensing & GIS  
(Specialization: Urban & Regional Studies)  
B. Plan. (Town Planning) SPA Delhi

### Area of Interest:

Urban Data Management, Affordable & Rental Housing Policy, Mission Monitoring, Inter-departmental Data-Usage Model, Urban Climatology, 3D Modelling, Photography, Infographic Designing, Cooking and Road Trips

### Software Skills:

Python, ArcGIS, QGIS, ERDAS Imagine, Blender, SNAP, In-Design, Google Sketchup, Photoshop, AutoCAD, MS Word, MS Excel, MS Power Point

### Thesis:

Urban Climatic Map-An Application of Earth Observation Data & GIS

### Abstract:

Cities are facing distinct climatic condition known as Urban Climate; anthropogenic activities along with persistent urbanization, a reason. Urban Climatic Map quantify impacts of anthropogenic & natural activities on city's climate; both positive and negative; which Urban Planning concepts in isolation are incompetent to resolve. Quantifying the impact on city's climate through UC Analysis Map, and proposing measures to minimize its effect through UC Recommendation Map; the study tries to mitigate the effects through passive cooling and moving a step closer to sustainability.

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## Banda Tejeswari

### Qualifications:

M.Tech. in Remote Sensing & GIS  
(Specialization: Urban and Regional Studies)  
B. Plan

### Areas of Interest:

Application of Information systems and automation processes for Urban, Regional and Rural Development; Machine/Deep learning-oriented Feature extraction

### Software Skills:

Python, R studio, ArcGIS Pro, QGIS, ERDAS Imagine, ENVI, eCognition, AutoCAD 3D, SNAP

### Thesis:

Spatial and Vertical Building Change Detection for Urban Application

### Abstract:

Urban areas are highly dynamic where landscape changes occur in different frequencies. Buildings form the basic unit of urban fabric where major changes take place in short intervals of time. Inclusion of the building details in map making is significant for micro sectoral studies. Since height and location are important attributes of the building, the current study focus on change in building features of an urban area spatially and vertically. This study adopts a new methodology to extract building features in urban areas in Indian context.

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## Bibin K. Augastian

### Qualifications:

M.Tech. in Remote Sensing & GIS  
(Specialization: Marine and Atmospheric Sciences)  
M.Sc. (Applied Geology and Geoinformatics)

### Area of Interest:

Fog analysis, Sedimentology, Climate Change Studies, Atmospheric and Cloud Modelling, Surveying and Cartography, Meteorology, Atmospheric energy budget, Pollution studies, oceanography, Agriculture fires, Geospatial application for Natural Resource Management

### Software Skills:

Python, R, FORTRAN, MATLAB, ArcGIS, QGIS, ERDAS Imagine, LPS, ENVI, SNAP, GrADS, Google Earth Engine, AWS, Adobe – Photoshop, CorelDRAW, Sigmaplot. Panoply

### Thesis:

Space based fog estimation over Indian region

### Abstract:

The project aims to derive area-wide fog information for the Indo-Gangetic Plain region using a novel hybrid fog detection algorithm based on a combination of SEVIRI and METAR data. The method is based on a random forest (RF) machine learning model that will be trained with cloud base altitude (CBA) observations from both satellite and ground truth data.

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## Biswarup Bhattacharya

### Qualifications:

M.Tech. in Remote Sensing & GIS  
(Specialization: Marine and Atmospheric Sciences)  
M.Sc. (Environmental Science)

### Area of Interest:

Ocean Biogeochemistry, Climate modelling, Ocean plastic pollution, Climate Change Studies, Ocean-atmospheric interaction, Air Pollution studies, Satellite Image Processing and analysis, Meteorology

### Software Skills:

MATLAB, NCL, Ferret, Python, R, ArcGIS, QGIS, ERDAS Imagine, LPS, ENVI, SNAP, GrADS, Blender, Google Earth Engine

### Thesis:

Spatial and temporal variability of pCO<sub>2</sub> over the Indian Ocean using model and satellite data

### Abstract:

The Indian Ocean (IO) shows unique physical and biogeochemical properties caused by the semi-annually reversing atmospheric and oceanic circulation. This study, analyses the seasonal cycle of partial pressure of CO<sub>2</sub> (pCO<sub>2</sub>) over Indian Ocean, investigates the processes which are regulating the pCO<sub>2</sub> variability over the region. It uses the buoy, Satellite, and CMIP6 (The Coupled Model Intercomparison Project 6) data to compute the pCO<sub>2</sub>.



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### Brij Mohan Bohra

#### Qualifications:

M.Tech. in Remote sensing & GIS  
(Specialization: Water Resources)  
B.Tech. (Civil Engineering)

#### Areas of Interest:

Cryospheric Studies, Machine learning, Data Science,  
Microwave Remote Sensing, SAR Polarimetry, SAR  
interferometry, Hydrological modelling,  
Watershed Management, Deep Learning

#### Software Skills:

Python, R, Google Earth Engine, ArcGIS, QGIS, SNAP,  
PolSAR PRO, ILWIS, ERDAS Imagine, HEC-RAS, HEC-  
HMS, BRAT, AutoCAD, SQL, SWAT, PyRate

#### Thesis:

Evaluation of space-borne SAR and air-borne SAR using  
snow depth and SWE estimation

#### Abstract:

This study is focused on the snow depth and snow  
water equivalent estimation using space-borne ALOS  
PALSAR-2 data and air-borne UAV SAR data for Grand  
mesa region, Colorado, USA and Manali, Himachal,  
India. Snow, which is the second largest component of  
the cryosphere in area after frozen ground, contributes  
to ¾ global terrestrial freshwater resources. These  
snow parameters are estimated through Co-polar  
difference method and PolInSAR method which is being  
validated by SnowEx mission dataset of Grand mesa  
region and instrument installed by IIRS in Manali.

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### Chaganti Charan

#### Qualifications:

M.Tech. in Remote Sensing & GIS  
(Specialization: Geosciences)  
B.Tech. (Mining Engineering)

#### Area of Interest:

SAR data processing (InSAR & DInSAR), Image  
Processing, Machine Learning, Data Science, Fault  
Slip Modeling, Inversion Modeling

#### Software Skills:

Python, R, HTML, CSS, JavaScript, SQL, Google Earth  
Engine, ArcGIS, QGIS, ERDAS Imagine, ENVI, SNAP,  
GMT, GMTSAR, GG-MATLAB, GAMIT/GLOBK

#### Thesis:

Dilatational and Shear Strain Modelling with respect to  
Himalayan earthquakes using GNSS and SAR data

#### Abstract:

The Great Gorkha Earthquake, 2015 in Nepal (Mw =  
7.8), helped us interpret of several aspects of major  
Himalayan earthquakes but fell short in the knowledge  
gap between the major earthquakes. This study helps  
in bridging the gap using advanced geo-spatial  
technologies synthesizing the current knowledge on  
the recent findings of seismic studies in Himalayan  
region. We propose to integrate both GNSS and SAR  
data for conducting crustal deformation studies with  
better accuracy using inversion and estimate the fault  
slip rate.

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### Chhaya Sharma

#### Qualifications:

M.Tech in Remote Sensing & GIS  
(Specialization: Geoinformatics)  
B.Tech. (Electronics and Instrumentation)

#### Area of Interest:

WebGIS, Machine Learning, Remote Sensing data  
analysis using WCPS, Geoprocessing, Digital Image  
Processing, Data Science, Networking, Statistical  
Learning, Cloud Computing, Web Development

#### Software Skills:

Python, R, C, C++, SQL, WCPS, PHP, HTML, JavaScript,  
jQuery, Ajax, Bootstrap, AngularJS, NodeJS, Google  
Earth Engine, ArcGIS, QGIS, ERDAS Imagine, MySQL,  
PostgreSQL, PHPMYADMIN, Open Data Kit, Geoserver,  
Rasdaman, LAMP Server, Google SketchUp, Linux (Ubuntu)

#### Thesis:

Development of Open Source Repository of WCPS  
Codes for Remote sensing Data Analysis Methods

#### Abstract:

This Project Involves the development of codes in  
WCPS for some Remote Sensing Data Analysis  
methods, test codes on server and integrate all the  
codes into a open source repository and we will get all  
codes at one place. This project will make whole  
process easier and time saving. As analysis will be  
online, there is no issue of space due to large volume  
of data. It involves server side data processing  
which have many advantages.

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## Chintan Bimal Maniyar

### Qualifications:

M.Tech. in Remote Sensing & GIS  
(Specialization: Satellite Image Analysis and Photogrammetry)

B.Tech. (Computer Engineering)

### Area of Interest:

AI aided Remote Sensing for Environment Conservation, Machine/Deep learning, Satellite Image Processing, Computer Vision, Automatic Feature Extraction

### Software Skills:

Python, C/C++ , JAVA, CUDA, JavaScript, PHP, fastai, PyTorch, Tensorflow, Keras, GDAL, Google Cloud Platform, SNAP, Google Earth Engine, QGIS, ERDAS, ENVI, eCognition, MySQL

### Thesis:

Automatic Multiscale Feature Extraction from High Resolution Remotely Sensed Imagery using Object-based Convolutional Neural Networks

### Abstract:

A U-Net with encoder of ResNet and dynamic decoder is designed to extract features from high resolution aerial/satellite imagery. PixelShuffle is used to learn multiscale patterns. Various object based guided filters and information extractors are evaluated to capture spectral contextual and semantic information from RGB images. Best object extraction approach is integrated with the proposed model. Moreover, Cyclical learning is implemented to optimize training time and resource (GPU) utilization.

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## Debangshu Banerjee

### Qualifications:

M.Tech. in Remote Sensing & GIS  
(Specialization: Marine and Atmospheric Sciences)  
M.A./ M.Sc. (Geography)

Graduate Diploma (Remote Sensing and GIS)

### Area of Interest:

Cryospheric Sciences (Snow, Glaciers, Ice-Sheet, Sea-Ice, Snowfall, Permafrost), Numerical Weather Prediction & Forecasting, Ocean & Climate Modelling, Polar Meteorology, Glacial Microclimate, InSAR, DInSAR & PolSAR applications, 3D GIS, Geostatistics

### Software Skills:

MATLAB, Python, R, GDAL, WRF-ARW, Google Earth Engine, ArcGIS Pro, QGIS, ERDAS Imagine, ENVI, SNAP, PolSAR pro, PCI Geomatica, AutoCAD Map 3D, GrADS, SWAT+, BRAT, Sketch Up, Blender, SPSS, Fragstats, STATA, Google Data Studio, OriginLab, Geoserver

### Thesis:

Seasonal investigation of the precipitation dynamics over the North-West Himalayan region

### Abstract:

Incorporating the physiographic orientation, geophysical aspects, seasonal wind circulation pattern and fine scale cloud microphysical dynamics, the study will investigate the seasonal precipitation forms and patterns occurring over NWH illustrating the micro-meteorological conditions through a combined use of Numerical modelling and high resolution satellite & reanalysis datasets.

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## Dhanush Ramasubramanian

### Qualifications:

M.Tech. in Remote Sensing & GIS  
(Specialization: Forest Resources & Ecosystem Analysis)  
B.E (Environmental Engineering)

### Area of Interest:

Climate Change Studies, Forest Ecosystem Analysis, Forest Hydrology, Environmental Modelling, Satellite Image Processing and analysis, Surveying and Cartography, Meteorology, Deep Learning, Cooking, Trekking & Mountaineering, Teaching and Natural Farming

### Software Skills:

Python, R, ArcGIS, QGIS, ERDAS Imagine, ENVI, SNAP, Blender, Google Earth Engine, LaTeX

### Thesis:

Assessing environmental determinants of vegetation patterns in cold-arid transition zone of Western Himalaya using machine learning

### Abstract:

The species–environment relationship and the relationship between vegetation patterns across the gradient of environmental factors establishes links between them. The current study aims to identify the underlying environmental factors that govern the vegetation pattern along this landscape gradient and to understand their relationship and establish the defining factors or vegetation in the greater to cold arid transition zone of the Western Himalayas.

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## Dyvavani Krishna K

### Qualifications:

M. Tech. in Remote Sensing and GIS  
(Specialization: Forest Resources & Ecosystem Analysis)  
M.Sc. (Biodiversity Studies and Management)  
B.Sc. (Chemistry, Botany and Zoology)

### Area of Interest:

Biodiversity conservation and Wildlife Management,  
Protected Area Network planning and corridor  
management, Landscape ecology, Satellite telemetry  
and radio tracking, Population Biology and habitat  
assessment, Climate change studies, Ecosystem  
analysis, Fire ecology, Restoration ecology

### Software Skills:

R, C, JavaScript, R Studio, HTML, ArcGIS, QGIS,  
ERDAS Imagine, eCognition, SPSS, PAST, DISTANCE,  
3D FOREST, MaxENT, Fragstats, GrADS, Google Earth  
Engine, Google Earth Pro, MS Office Suite

### Thesis:

Understanding ecosystem fluxes using semi-empirical  
model-PRELES

### Abstract:

The basic ecosystem fluxes such as Gross Primary  
Productivity and Evapotranspiration drive the carbon  
alterations in the atmosphere and lead to future climate  
scenarios. The semi-empirical model-PRELES will  
estimate accurate flux values for Indian monsoon  
conditions in moist deciduous Sal forests with minimum  
meteorological and radiance input variables.

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## Effa Lawrence

### Qualifications:

M.Tech. in Remote Sensing & GIS  
(Specialization: Geoinformatics)  
B.E. (Geoinformatics)

### Area of Interest:

Geospatial Workflow Management Systems, Geospatial  
Big data Analytics, NLP, 3D Modelling & Visualization,  
Geospatial Data Science

### Software Skills:

R, Python, QGIS, ArcGIS, ENVI, ERDAS Imagine,  
ElasticSearch, Knime, SNAP, Geoda, Netlogo, Google  
Earth Engine, PostgreSQL, Geoserver

### Thesis:

A generic framework for decision-makers to perform  
Self-service Exploratory Analysis using  
Geosocial Big data

### Abstract:

The thesis involves comparing & evaluating the available  
big data tools/algorithms for self-service exploratory  
analysis. It proposes a big data analytics framework for  
performing sentiment analysis using Twitter data (both  
historical and stream) for a user-defined theme. The  
work aims at suggesting a generic solution to the naive  
decision makers by developing a no-code and  
interactive self-service interface to perform exploratory  
analysis using geosocial big data.

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## Harshal Mittal

### Qualifications:

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

### Area of Interest:

Computer-Vision, Image Processing, SAR Image  
Exploitation, Inverse SAR/SAL, Machine/ Deep/  
Statistical-Learning, Genetic Algorithm, Automatic  
Moving Target Detection

### Software Skills:

C/C++ , Python, JAVA, MATLAB, GDAL, SNAPPY,  
Linux OS, R, JavaScript, LaTeX, SQL, QGIS, ERDAS  
Imagine, ENVI, SNAP

### Thesis:

Automatic Ship Detection using Dual Polarimetry SAR  
Satellite Imagery

### Abstract:

SAR is the prominent data source for the surveillance  
of various maritime activities and its applications such  
as Ship Detection as it can generate the imagery 24x7,  
without any restrictions on weather conditions. In this  
study, an advanced adaptive threshold Bilateral CFAR  
kernel has been developed to reduce the false alarms  
with the usage of dual polarized channels. For good  
geometrical accuracy, a methodology is developed to  
generate the land mask using a vector based approach  
to get the precise region of interest for the processing.  
Finally, the results are validated using the ROC curves.

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## T Udaya Bhaskar Jayanth

### Qualifications:

M.Tech. in Remote Sensing & GIS  
(Specialization: Agriculture and Soils)

B.Sc. (Agriculture)

### Areas of Interest:

Crop Modelling, Crop Inventory, Crop Monitoring,  
Biophysical Parameter retrieval, Sustainable  
Agriculture, Microwave Remote Sensing, Climate  
change, Soil Science, Agrometeorology

### Software Skills:

Python, R Studio, ArcGIS, QGIS, ERDAS Imagine, ENVI,  
SNAP, TIMESAT, SPSS, Google Earth Engine

### Thesis:

Development of Yield Modelling Techniques for Rabi  
Pulses using Multi-Temporal Satellite Data

### Abstract:

Crop yield estimation is quite helpful in policymaking. In the occurrence of floods, drought, pest, and diseases directly lead to a loss in crop yield, which affect the farmers financially as well as socially. The primary objective of the study is the evaluation of a weighted agro spectral yield model at regional scale using remote sensing derived inputs to predict the crop yield of pulses. Synchronised use of optical and SAR satellite data to define crop phenology as well as the crop conditioning ultimately, in crop yield modelling using phenological based crop yield model.

joshalbansal22@gmail.com



## Joshal Kumar Bansal

### Qualifications:

M.Tech. in Remote sensing & GIS  
(Specialization: Water Resources)

B.Tech. (Civil Engineering)

### Area of Interest:

Computational Hydrology, Integrated Flood Risk  
Assessment, Climate Change Studies, Reservoir  
Sedimentation studies, Altimetry

### Software Skills:

Python, Google Earth Engine, ArcGIS, QGIS, ILWIS,  
ERDAS Imagine, HEC-RAS, HEC-HMS, BRAT, MIKE 11

### Thesis:

Hydrodynamic Modelling and satellite altimetry-based  
establishment of virtual gauging network in flood prone  
river basin

### Abstract:

A strive has been made to investigate the capacity and brought value of altimeter measurements for multi-site validation of the HD model and constructed rating curves (RCs). The availability of RCs at virtual stations allows the expansion of the gauging network along the River, thus enabling the estimation of the discharge at additional locations and the potential evaluation of the contributions of lateral tributaries could be evaluated in future work.

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## Karan Sharma

### Qualifications:

M.Tech. in Remote Sensing & GIS  
(Specialization: Forest Resources and Ecosystem Analysis)

B.Sc. (Forestry)

### Area of Interest:

Phenology of Higher altitude, Machine Learning in  
biodiversity mapping, Time series EIA, Biodiversity  
conservation, Forest mapping and monitoring, Wildlife  
corridor mapping, Data Science

### Software Skills:

Python, R, JavaScript, ArcGIS, QGIS, ERDAS Imagine,  
Google Earth Engine, SNAP, 3D Forest, eCognition,  
GrADS, MaxEnt, Fragstat, MS Office Suite

### Thesis:

Deriving phenological metrics for high altitude  
vegetation in Western Himalaya using multi-sensor  
time series data and machine learning algorithms

### Abstract:

It is evident from the recent studies that climate change negatively affecting the food security and life cycle. This study is an attempt to assess vegetation phenological patterns using multi-sensor and time-series remote sensing derived phenological metrics through various machine learning algorithm and establish the role of environmental variables on regulating phenological stages across the vegetation types in Sub-Alpine and Alpine region of Western Himalaya.



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## Konika Bhandari

### Qualifications:

M.Tech. in Remote Sensing and GIS  
(Specialization: Forest Resources and Ecosystem Analysis)  
B.Sc. (Forestry)

### Area of Interest:

Climate change, Forest ecology and biodiversity, Forest mapping and monitoring, Machine Learning, Deep learning, SAR remote sensing, Application of LiDAR remote sensing in forestry

### Software Skills:

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

### Thesis:

Synergistic use of Multi-Sensor Earth Observation Data for Forest Biophysical Parameters Estimation using Machine Learning Algorithm

### Abstract:

Forest Biophysical variables have a strong hold over the energy fluxes between vegetation and atmosphere. Incorporating these parameters will lead to better understanding of forest biomass and will reduce uncertainties with carbon exchange in the ecosystem. It is anticipated that synergistic use of LiDAR, SAR, and Optical EO data will provide accurate estimates of forest biophysical parameters. The study explores the potential of space borne LiDAR data from GEDI and ICESAT-2 combined with optical and SAR data sets for estimating biophysical parameters in Indian forest.

mani.joe.thoppil@gmail.com



## Mani Joe

### Qualifications:

M.Tech. in Remote Sensing & GIS  
(Specialization: Geosciences)  
Integrated M.Sc. (Applied Geology)

### Areas of Interest:

Planetary Geology, Isotope Geochemistry, Hyperspectral Remote Sensing, Mineral Exploration, Metamorphic & Igneous Petrology, Ore Geology

### Software Skills:

R Studio, ArcGIS, ENVI, SNAP, ERDAS Imagine, LPS, QGIS, Microsoft Office, LaTeX, GrADS

### Thesis:

Target Mineral Detection and Imaging Spectroscopy in Mineralized Belts of Jahazpur Area, Rajasthan

### Abstract:

Mineral deposits are the wealth of the nation, and so mineral exploration is an important task carried out by geologists. A systematic investigation and prospecting are necessary to explore the potential area for mineral mapping. Thus, hyperspectral remote sensing plays a crucial part in mineral exploration. It is able to provide laboratory quality spectral which is crucial for the identification of minerals in the altered zones and rock-forming minerals. Combining geochemical data, gravity data, fault map and mineral map derived from hyperspectral data we can make mineral models of high accuracy, which may lead to discovery of previously undiscovered mineral deposits.

nhamde1998@gmail.com



## Narayan Shankar Hamde

### Qualifications:

M.Tech. in Remote Sensing & GIS  
(Specialization: Urban and Regional Studies)  
B.Tech. (Planning)

### Area of Interest:

Remote Sensing, GIS, Urban Growth Modelling, Urban Infrastructure

### Software Skills:

Python, HTML, ArcGIS, QGIS, ERDAS Imagine, Google Earth Engine, Fragstats, Blender, TerrSet

### Thesis:

Studying Urban Growth Dynamics in Indo-Gangetic Plains

### Abstract:

India, being a developing country, has experienced a rapid urbanization over the few decades. Environmental quality has also been on the rapid pace of degradation due to rapid growth in urban population and increased human footprint on the use of natural non-renewable resources. The study aims to provide the understanding of the urban pattern, pace and form which can help in quantifying the impact of urban expansion by computing complexity, compactness of urban areas.

The study attempts different methodologies in analysing the available data.

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## Pragnya Makar

### Qualifications:

M.Tech. in Remote Sensing & GIS  
(Specialization: Marine and Atmospheric Sciences)  
M.Sc. (Applied Mathematics)

### Area of Interest:

Numerical Weather Prediction, Meteorology, Tropical Cyclones, Weather forecasting, Climate Change

### Software Skills:

R Studio, Python, C, C++, Java, HTML, JavaScript, PHP, LaTeX, ArcGIS, QGIS, ERDAS Imagine, ENVI, PostgreSQL, GrADS, WRF-ARW

### Thesis:

Impact of Satellite Data Assimilation on Simulation of Tropical Cyclones using NWP Model

### Abstract:

The objective of the study is assimilation of Advanced Microwave Sounding Unit-A (AMSU-A) and Microwave Humidity Sounder (MHS) data in the WRF model and analysing the impact of assimilation of AMSU-A and MHS data on simulation of Super Cyclonic Storm Amphan and Severe Cyclonic Storm Nisarga, which formed over the North Indian Ocean in the year 2020. Further, obtain improved track, wind speed, rain rate and landfall position of tropical cyclone over the North Indian Ocean.

prasadrankhambe1997@gmail.com



## Prasad Sanjay Rankhambe

### Qualifications:

M.Tech. in Remote Sensing & GIS  
(Specialization: Agriculture and Soils)  
B.Tech. (Agricultural Engineering)

### Area of Interest:

Hydrological and Hydrodynamic Modelling, Reservoir Sedimentation Studies. Effect of Climate Change on Agriculture and Allied Activities, Effect of climate change in agricultural yield, Water Quality analysis and Data Processing

### Software Skills:

ENVI, ArcGIS, QGIS, SNAP, ERDAS Imagine, ILWIS, SWAT, InVEST, Google Earth Engine, AutoCAD, MS Office Suite

### Thesis:

Geospatial Modelling in Assessing Soil-Hydrological Ecosystem Services of Watershed for Conservation Planning

### Abstract:

Soil is a basis of survival as it supports and nourishes all the life on earth by playing a crucial role in ecosystem functioning. The objective of the study is modeling to quantify the Watershed Ecosystem Services or water yield, water quality (sediment retention) and soil carbon stock (as climate regulator) in the catchment.

priyankaadas300@gmail.com



## Priyanka Das

### Qualifications:

M.Tech in Remote Sensing & GIS  
(Specialization: Geoinformatics)  
B.Tech. (Information Technology)

### Area of Interest:

Machine/Deep Learning, Data Science, SAR Image Processing, 3D Modelling and Visualization

### Software Skills:

Python, R Studio, C, ArcGIS Pro, QGIS, Blender, ERDAS Imagine, HTML, Google Earth Engine

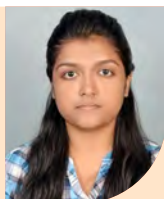
### Thesis:

Industrial Land Use Identification and Its Impact on Air Pollution

### Abstract:

The thesis explores the problem of automatic detection of industrial land uses from satellite images using deep learning techniques. The estimation of the quantity of trace gases are also calculated from the industrial land use sources. Identification of the sources and quantification of the industrial air pollutants are done.

dalalprohelika@gmail.com



## Prohelika Dalal

### Qualifications:

M.Tech. in Remote Sensing & GIS  
(Specialization: Geosciences)  
M.Sc. (Geology)

### Area of Interest:

Land deformation studies (Landslide, Land subsidence),  
Geohazards and Geodynamics, InSAR and DInSAR  
applications, Flood and drainage basin dynamics

### Software Skills:

R, ArcGIS, QGIS, ERDAS Imagine, GMTSAR, SNAP,  
ENVI, SARSCAPE, Corel Draw, Microsoft Office Suite,  
Google Earth Engine

### Thesis:

Study of Land Surface Deformations due to Aquifer  
Compaction by Advanced DInSAR techniques

### Abstract:

PSInSAR (Persistent Scattering Interferometry) and  
SBAS (Small baseline Subset approach) are the two  
advanced powerful Interferometric technique which has  
been providing the most precise measurements along  
with a time series analysis for land deformation studies  
in the recent times. Thus, incorporating the significance  
and feasibility of these techniques the current study  
will extensively focus over groundwater exploitation and  
aquifer system compaction induced land subsidence  
in Kolkata and its surroundings region.

ravik2.paschim@gmail.com



## Ravi Kant

### Qualifications:

M.Tech. in Remote Sensing & GIS  
(Specialization: Geoinformatics)  
B.Tech. (Civil Engineering)

### Area of Interest:

GNSS, Atmospheric Parameters, Remote Sensing &  
GIS Applications, Data Science, Machine Learning,  
3D Modelling & Visualization

### Software Skills:

Python, MATLAB, Blender, Netlogo, Google Earth  
Engine, PostgreSQL, Geoserver, QGIS, ArcGIS,  
ENVI, ERDAS Imagine, SNAP

### Thesis:

A study on Retrieval and variability of Precipitable  
water vapour using GPS observations over North  
Western Himalayan Region

### Abstract:

The present work proposed to derive atmospheric  
water vapour using GPS data retrieved from  
receivers located in North Western Himalayan  
Region. A detailed study on water vapour and its  
impact in the atmosphere will be carried out.  
Continuous PWV output which will be useful for  
various atmospheric analysis over the region.

satyajeeetsahu97@gmail.com



## Satyajeeet Sahu

### Qualifications:

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

### Area of Interest:

Climate Change Studies, Drought Monitoring and  
Assessment, Agro-Meteorology, Soil and Water  
Conservation Engineering, Hydrological and  
Hydrodynamic Modelling, Integrated Watershed  
Management, Environmental Impact Assessment,  
Disaster Management, Water Quality Analysis,  
Cryosphere Studies

### Software Skills:

Python, R, JavaScript/HTML/PHP, ArcGIS, QGIS, ERDAS  
Imagine, ILWIS, ENVI, SNAP, BRAT, VIC, SWAT, GrADS,  
HEC-HMS, HEC-RAS, EPA-SWMM, EPA-NET, WinSRM,  
Google Earth Engine, AWS, Origin, SigmaPlot,  
AutoCAD, Blender

### Thesis:

Quantifying the Impact of Meteorological Drought on  
the River Basin

### Abstract:

The study aims at quantifying the drought impact on  
the Ganga and Godavari river basin using statistical and  
modelling techniques for better understanding of the  
hydrological behaviour considering various drought  
factors. It will also focus towards deriving an inter-  
relationship between meteorological drought and  
hydrological drought for the river basin.

sehajpunjabi@gmail.com



### Sehajpal Singh

#### Qualifications:

M.Tech. in Remote Sensing & GIS  
(Specialization: Water Resources)  
B.E. (Civil Engineering)

#### Area of Interest:

Planetary Sciences, Climate Change Studies,  
Cryospheric Studies, Water Quality analysis and Data  
processing, Hydrological and Hydrodynamic Modelling,  
Reservoir Sedimentation Studies

#### Software Skills:

Python, C, R, SQL, HTML, ISIS, ENVI, JMARS, ArcGIS,  
QGIS, SNAP, ERDAS Imagine, Rolta Geomatica, ILWIS,  
BRAT, GrADS, SWAT, HEC-RAS, HEC-HMS, Google  
Earth Engine.

#### Thesis:

Spatial-Temporal Dynamics of Polar Layer deposits and  
detection of Sub-surface water ice in mid-latitude  
region of Mars

#### Abstract:

The red planet may hold the key for bright new future  
of humanity. This research work aims to observe and  
study the seasonal and inter-annual trends of the polar  
ice over parts of NLPDs of Mars and quantify the  
seasonal cap recession. Hyperspectral data is a boon  
to differentiate between dry and water ice signatures.  
Additionally, RADAR sounding technology has been  
used to hunt for potential reservoirs of water-ice  
in the mid-latitude region.

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### Shivani Kalra

#### Qualifications:

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

#### Area of Interest:

Crop modelling, Climate Change, Agro-meteorology,  
Precision Agriculture, Sustainable Agriculture, Surface  
energy balance studies, Light Use Efficiency model  
Artificial Intelligence in agriculture

#### Software Skills:

R, ArcGIS, ERDAS Imagine, ENVI, ILWIS, TIMESAT,  
SNAP, Eddy Pro, Google Earth Engine, QGIS, PC200W

#### Thesis:

Carbon Flux Monitoring over dominant Agro-  
Ecosystems by integrating Multi-Sensor Satellite and  
Flux-tower data into Efficiency based Models

#### Abstract:

Satellite remote sensing provides consistent and  
systematic observations of characterization of  
vegetation structure and estimation of Net Primary  
Productivity. Remotely sensed data is used in  
combination with flux data in order to estimate C fluxes  
over the area. Spectral vegetation indices derived from  
the satellite data is combined with EC measurements to  
estimate C fluxes outside of the tower footprint.

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### Souravi Saha

#### Qualifications:

M.Tech. Remote Sensing & GIS  
(Specialization: Agriculture and Soils)  
B.Sc. Hons. (Agriculture)

#### Area of Interest:

Crop Inventory, Agro-Meteorology, Rural Development,  
Yield Estimation, Nutrient Management, Crop  
Condition Assessment, Drones in Agriculture

#### Software Skills:

JAVA, R, Python, Google Earth Engine, ArcGIS, QGIS,  
SNAP, ENVI, ERDAS Imagine, ILWIS, GrADS

#### Thesis:

Orchard Assessment using Time Series  
Multi-sensor data

#### Abstract:

This research will help us to understand how well  
mango orchards can be evaluated using both SAR and  
optical data. Mango orchards are classified based on  
age using Machine Learning techniques, followed by  
development of relationship between remote sensing  
data with orchard biophysical parameters. The  
potential of multi-temporal data is utilised for  
phenological studies by comparing with BBCH scale



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## **Srishti Pandey**

### **Qualifications:**

M.Tech. in Remote Sensing & GIS

(Specialization: Water Resources)

B.Tech. (Civil Engineering)

### **Area of Interest:**

Water Resource Management, Flood Studies,  
Discharge Measurement, Data Science, Satellite  
Altimetry, Building Information Modelling, Construction  
Management

### **Software Skills:**

Python, C + +, SNAP, BRAT, ArcGIS, QGIS, ERDAS  
Imagine, ILWIS, HEC-RAS, HEC-HMS, Google Earth  
Engine, AutoCAD, STAAD Pro, Revit Architecture, MS  
Office

### **Thesis:**

Multi-sensor remote sensing approach to river  
discharge estimation

### **Abstract:**

Floods have for long affected several aspects of the  
living world. Understanding floods remains a  
challenging task in areas with scarce data. This study  
aims at estimating river discharge using multiple sensor  
data, attempting to remove the data gap while  
generating dense water level time series.

### M.Sc. in Geoinformatics

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 the Indian Institute of Remote Sensing (IIRS) and the Faculty of Geo-information Science and Earth Observation (ITC) of the University of Twente (UT), The Netherlands.

The course is of 2 years 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:

Module		Duration	Module Topic	Location
1	Quartile 1: Core Modules	Geo-Information 3 weeks	(GI) Science and Earth Observation (EO): A Systems Based Approach	IIRS
2		3 weeks	GI Science and Modelling	
3		3 weeks	Earth Observation	
4			System Earth, Users and Data Integration	
		Academic Skills (Runs parallel during the block)		
		Catch-up Week/ Re-Sit Examination		
5	Quartile 2: Modules	3 weeks	Scientific Geocomputing	IIRS
6			Winter Break	
7		6 weeks	Acquisition and Exploration of Geospatial Data	
			Academic Skills (Runs parallel during the block)	
		Break/Re-Sit Examination		
8	Quartile 3: Modules & Elective	4 weeks	Extraction, Analysis and Dissemination of Geospatial Information	IIRS
9		3 weeks	Elective course	
10			Academic Skills (Runs parallel during the block)	
			Break/Re-Sit Examination	
11	Quartile 4: Modules & Elective	3 weeks	Global Challenges, Local Action	IIRS
12		3 weeks	Elective course	
13			Academic Skills (Runs parallel during the block)	
			Summer Break/Re-Sit Examination	
14	Quartile 5: Elective(s)/ Internship & M.Sc. Research	18 weeks	Elective course	ITC
15			Elective course/ Internship	
16			M.Sc. research proposal writing and defence	
			Break/Re-Sit Examination	
17	Quartile 6&7: Elective/ Internship/ M.Sc. Research	12 weeks	Elective course/ Internship	ITC & IIRS
18			M.Sc. research	
19	Quartile 8	25 weeks	M.Sc. research	IIRS
20			Submission and Thesis Defence	

akshatrawat2641996@gmail.com



## Akshat Rawat

### Qualification:

M.Sc. in Geo-information Science & Earth Observation  
(Specialization: Geoinformatics).

B.Tech in Electronics

### Area of Interest:

PollnSAR, PolSAR, InSAR, Forest heights, Forest fires, Spatial Analysis, Satellite components

### Software Skills:

ArcGIS, QGIS, ERDAS Imagine, PolSARpro, SNAP, Python, R, DBMS, SQL and MATLAB

### Thesis:

Multi-frequency SAR data-based PollnSAR inversion modeling for forest height retrieval

### Abstract:

Being one of the biophysical parameters, forest height is a useful component in estimating the Above Ground Biomass. SAR plays an important role in estimating forest heights using inversion models such as the Random Volume over Ground (RVoG) model. PollnSAR has shown the most accurate results for forest heights obtained in earlier studies. The study aims at developing a new idea to derive the forest height using data of different frequencies.

awinash.singh1992@gmail.com



## Awinash Singh

### Qualification:

M.Sc. in Geo-information Science & Earth Observation

(Specialization: Geoinformatics)

B.Tech. in Information Technology

### Area of Interest:

PolSAR, PollnSAR, InSAR, Planetary Science, Image Analysis

### Software Skills:

Python, R, SQL, MATLAB, SNAP, PolSARPro, ArcGIS, ENVI, ERDAS Imagine

### Thesis:

Polarimetric modeling of dual-frequency SAR data for characterization of the lunar surface

### Abstract:

The prime focus of this study is to utilize the dual-frequency capability of the PolSAR data for characterizing the dielectric behavior of the regolith towards delineating the polar water ice and subsurface geomorphological feature like lava tube. It also includes identification of lava tubes, rilles, skylights and plausible identification of water ice associated with it.

jitendra.uwa@gmail.com



## Jitendra Shankaraiah

### Qualification:

M.Sc. in Geo-information Science & Earth Observation

(Specialization: Geoinformatics)

B.E. (Computer Science)

### Area of Interest:

Machine learning, Big Geodata, Spatial data infrastructure, Image processing, Spatial statistics

### Software Skills:

R, Python, Google Earth Engine, QGIS, ArcPy, ArcGIS API for JavaScript, ArcGIS StoryMaps

### Thesis:

Time series analysis of opencast mining characteristics using remote sensing data on Google Earth Engine

### Abstract:

Tool to monitor opencast mining characteristics in near real-time from time series satellite data from different sources on Google Earth Engine. It will be able to assess change in surface area of the mining areas, identify coal fire locations and areas of land subsidence, using machine learning techniques on multispectral data, image segmentation techniques and differential SAR interferometry.

megh097@gmail.com



## Megha Sood

### Qualification:

M.Sc. in Geoinformation Science & Earth Observation

(Specialization: Geoinformatics)

B.Tech. in Computer Science & Engineering

### Area of Interest:

RS and GIS applications, Data Science, Deep Learning, Crop Modelling, Image Processing, Web GIS, LULC mapping

### Software Skills:

Python, ArcGIS (Desktop and online), ArcPy, ERDAS Imagine, QGIS, Postgre SQL, JavaScript, HTML/CSS, MySQL, ArcGIS Pro

### Thesis:

Deep Learning for Image Time Series Analysis: Application to Crop Mapping.

### Abstract:

This research explores the capabilities of deep learning algorithm such as CNN & hybrid-CNN incorporating LSTM using multi-temporal date of specific crop mapping when working with small fields. Heterogeneity with in a class is also studied and compared with fuzzy based MPCM classifier.

rajit23u@gmail.com



## Rajit Bhat

### Qualification:

M.Sc. in Geoinformation Science & Earth Observation

(Specialization: Geoinformatics)

B.E. in Civil Engineering

### Area of Interest:

Geographical Information Processing and Geo-data Visualization in:

Logistics and Mobility: Connected and intelligent transportation systems  
Urban sensing and analytics

### Software Skills:

Programming Skills: Python and R Data Visualization and Communication:

Tableau, D3.js, libraries in Python and R Statistics and Machine Learning:

Familiarity with framework such as scikit-learn Experience with other Geo-spatial applications: ArcGIS Desktop, QGIS, ERDAS Imagine

### Thesis:

A Spatio-Temporal CLustering Algorithm for exploring movement patterns in large event data

### Abstract:

Develop a novel clustering algorithm to understand the time-space behaviour of activity performed by study objects.

hooda.waris0507@gmail.com



## Waris Hooda

### Qualification:

Qualifications: M.Sc. in Geoinformation Science & Earth Observation

(Specialization: Geoinformatics)

B.E. in Computer Engineering

### Area of Interest:

Climate Science, Urban Science, Data Science, Machine/Deep Learning, Computer Vision

### Software Skills:

ArcGIS, QGIS, ERDAS Imagine, Python, R, C, C++, JavaScript, MongoDB, SQL, PostgreSQL and PostGIS, MATLAB

### Thesis:

A three dimensional spatio-temporal view of major aerosol types over the Indian region

### Abstract:

Study aims to present a comprehensive detailed 3-D view of aerosol types over the Indian Region, their diurnal variability across different seasons and trends over different zones within the study area.

Also, few case based back-trajectory analysis will be done using HYSPLIT Model. The work is carried out using the CALIPSO satellite data.

### PG Diploma in Geoinformatics

Post Graduate Diploma (PGD) in Geo-information Science and Earth Observation (specialisation: Geoinformatics) is offered within the framework of Joint Education Programme (JEP) of the Indian Institute of Remote Sensing (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	Duration
Q1	Core Academic Skills	9 weeks
Q2	Scientific Geocomputing Acquisition and Exploration of Geospatial Data Academic Skills	12 weeks
Q3	Extraction, Analysis and Dissemination of Geospatial Information Elective Course Academic Skills	9 weeks
Q4	Global Challenges, Local Action Individual Project, Report Writing, Evaluation Academic Skills	8 weeks



: Pr6111996@gmail.com



### **Preeti Bisht**

#### **Qualification:**

PGD Geoinformatics  
B.Sc. Hons. (Geology)  
M.Sc. (Geology)

#### **Area of Interest:**

Web GIS, Health GIS, Spatial DBMS,  
Digital Image Processing, LULC  
Modelling, Hydrological Modelling,  
Machine Learning, GIS application in  
Meteorology and Natural Hazards,  
Forest Application.

#### **Software Skills:**

C, Python, ArcGIS, QGIS, GDAL,  
ERDAS Imagine, NetLogo

naufalahmedmh@gmail.com



### **Naufal Ahmed M H**

#### **Qualification:**

PGD (Geoinformatics),  
M.Tech (Urban & Regional Planning)  
B.E. (Civil Engineering), GATE (Civil)

#### **Area of Interest:**

Urban Planning, Transportation Planning  
GIS, Hydrological Modelling, Remote  
Sensing, Rural planning, Infrastructure  
and Development Planning, Land  
Management, Urban Hazards & Disaster  
Management, Site Suitability Analysis,  
Data Mining, Wasteland Development  
Planning

#### **Software Skills:**

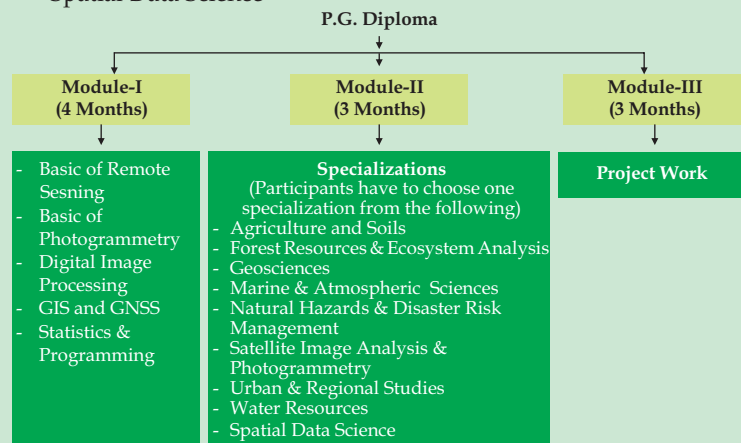
Python, ArcGIS, QGIS, ERDAS Imagine,  
AutoCAD, Google SketchUp, STAAD Pro,  
Revit, Adobe Photoshop, Microsoft  
Office

### PG Diploma (RS&GIS)

The PG Diploma programme aims to provide in-depth understanding of remote sensing, satellite image analysis, Geographic Information System (GIS) and Global Navigation Satellite System (GNSS) technologies and their applications in various fields viz., Agriculture and 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 M.Tech/P.G. Diploma

Thematic Specialization	Subject
Agriculture & Soils	<ul style="list-style-type: none"> <li>• Land Use &amp; Soil Resource Assessment</li> <li>• Agri-informatics</li> <li>• Environmental Soil Science</li> <li>• Satellite Agro-meteorology</li> </ul>
Forest Resources and Ecosystem Analysis	<ul style="list-style-type: none"> <li>• Forest Mapping &amp; Monitoring</li> <li>• Forest Inventory</li> <li>• Forest Informatics</li> <li>• Forest Eco-System Analysis</li> </ul>
Geoinformatics*	<ul style="list-style-type: none"> <li>• Spatial Data Quality</li> <li>• Programming Skills Development for Geo-Processing</li> <li>• Spatial Database Handling, Modelling &amp; GIS Implementing Architectures</li> <li>• Geo-Statistics</li> </ul>
Geosciences	<ul style="list-style-type: none"> <li>• Earth Science and Planetary Geology</li> <li>• Data Processing and Analysis for Geosciences</li> <li>• Applied and Tectonic Geomorphology</li> <li>• Engineering Geology and Groundwater</li> </ul>
Marine & Atmospheric Sciences	<ul style="list-style-type: none"> <li>• Satellite Oceanography</li> <li>• Satellite Meteorology</li> <li>• Coastal Processes and Marine Ecology</li> <li>• Atmospheric and Ocean Dynamics</li> </ul>
Natural Hazards & Disaster Risk Management (NHDRM)	<ul style="list-style-type: none"> <li>• Natural Hazards and Disaster Management: Concepts and Overview</li> <li>• Image Interpretation and Analysis for Natural Hazards Assessment</li> <li>• Application of Geoinformatics to Environment Hazards</li> <li>• Application of Geoinformatics to Geological Hazards</li> <li>• Application of Geoinformatics to Hydro-meteorological Hazards</li> </ul>
Satellite Image Analysis & Photogrammetry	<ul style="list-style-type: none"> <li>• Emerging Sensors and Data Processing</li> <li>• Image Processing Algorithms</li> <li>• Digital Photogrammetry and Mapping</li> <li>• Mathematical Computing for Geospatial data analysis</li> </ul>
Urban & Regional Studies	<ul style="list-style-type: none"> <li>• Fundamentals of Urban and Regional Planning</li> <li>• Geospatial Technologies for Urban &amp; Regional Area Analysis</li> <li>• Urban Resources, Services and Facilities Analysis</li> <li>• Advanced Geospatial Technologies for Urban and Regional Studies</li> </ul>
Water Resources	<ul style="list-style-type: none"> <li>• Satellite Hydrology</li> <li>• Watershed Hydrology and Conservation Planning</li> <li>• Water Resources Development</li> <li>• Water Resources Planning Management</li> </ul>
Spatial Data Science	<ul style="list-style-type: none"> <li>• Big Data Analysis</li> <li>• Machine Learning</li> <li>• Programming for Geodata Processing</li> <li>• Spatial Modelling and Data Assimilation</li> </ul>

\*Common with M.Tech. as per page no. 8

\*Offered under M.Tech. programme only

akshsinha094@gmail.com



### Akshay Singh

#### Qualification:

PGD in Remote Sensing & GIS  
(Specialization: Marine & Atmospheric Science)

M.A. (Geography)  
B.Sc. (Computer Science)

#### Area of Interest:

Application of Remote Sensing & GIS  
in Pollution Control, Climate Change, Ocean Dynamics,  
Atmospheric Dynamics

#### Software Skills:

ERDAS Imagine, QGIS, SNAP  
ArcGIS, ENVI

bishtanand002@gmail.com



### Anand Singh Bisht

#### Qualifications:

PGD in Remote Sensing & GIS  
(Specialization: Forest Resources & Ecosystem Analysis)

B.Sc. (Forestry Hons.)

#### Area of Interest:

Application of Remote sensing and GIS in  
forestry and wildlife, Forest ecology,  
Biodiversity conservation, Wildlife  
management, Forest fire management,  
Climate change mitigation, Environment  
Impact Assessment.

#### Software Skills:

ArcGIS, FRAGSTATS, ERDAS Imagine,  
SNAP, ENVI, QGIS, Google Earth,  
Microsoft Office.

anjali9223@yahoo.com



### Anjali Shukla

#### Qualifications:

PGD in Remote Sensing & GIS  
(Specialization: Urban & Regional Studies)

B.Sc. (PCM)  
M.Sc. (Geography)  
UGC-NET/JRF

#### Area of Interest:

Urban and Regional Studies

#### Software Skills:

MS Office, ERDAS, SNAP, QGIS

ansvar93@gmail.com



### Anshika Varshney

#### Qualifications:

PGD in Remote Sensing  
(Specialization: Urban & Regional Studies)

B.Arch, PGDUPDL (Post Graduation  
Diploma in Urban Planning and  
Development)

#### Area of Interest:

Urban Analysis/Planning, Regional  
Planning, GIS, Remote Sensing, Mapping,  
3d modelling, Urban Feature Extraction,  
Cartography, Graphic Work

#### Software Skills:

Python, AutoCAD, Adobe Photoshop,  
Adobe InDesign, Adobe Illustrator,  
ArcGIS, QGIS, ERDAS Imagine, SketchUP,  
3ds Max, Microsoft Office

anshusiwach96@gmail.com



## Anshu Siwach

### Qualification:

PGD in Remote Sensing & GIS  
(Specialization: Agriculture and Soil)  
M.A. (geography))

B.Sc. (Botany, Zoology, Chemistry)

### Area of Interest :

Land use and Land Cover Mapping,  
Crop Inventory, Crop Phenology,  
Agroforestry and Urban Forestry, Soil  
Erosion Modeling, Environment Impact  
Assessment, Drought Assessment,  
Land Degradation, Risk Assessment &  
Disaster Management, Social Impact  
Assessment, Watershed  
Management, Climate Change, Forest  
Degradation Assessment, SAR data  
processing, Sustainable Agriculture,  
Artificial Intelligence in Agriculture,  
Forest Fire Mapping

### Software Skills :

Python, R, SQL, ERDAS Imagine, QGIS,  
ArcGIS, MATLAB, SNAP, Microsoft  
Office, ENVI.

anushatatpati@gmail.com



## Anusha Arun Tatpati

### Qualifications:

PGD in Remote Sensing & GIS  
(Specialization: Satellite Image  
Analysis & Photogrammetry)

B.E. (Electronics &  
Telecommunications)

### Area of Interest:

Planetary Photogrammetry, Planetary  
topographic Mapping, Digital GIS  
Mapping, Applications of LiDAR 3D  
sensing Technology.

### Software Skills:

Excel, Arc-GIS Pro, Python, SQL, C,  
Auto-CAD, R, QGIS, ERDAS imagine,  
SNAP, Atlas

aswathieisha@gmail.com



## Aswathi. V

### Qualifications:

PGD in Remote Sensing & GIS  
(Specialization: Agriculture and Soils)

B.Sc. (Agriculture)

### Area of Interest:

Application of remote sensing in  
agriculture, Application of RS in  
meteorology and climate change, Crop  
production forecasting ,crop progress  
and assessment of crop damage,  
Identification of pest and disease  
infestation, Nutrient deficiency  
detection.

### Software Skills:

ERDAS, ENVI, LIDAR, SNAP, PARBAT,  
Q GIS, MS OFFICE, PYTHON

aswinstat@gmail.com



## Aswin Sivadas

### Qualifications:

PGD in Remote Sensing & GIS  
(Specialization: Spatial Data Science)

M.Sc. (Statistics)

B.Sc. (Mathematics)

### Area of Interest:

Probability and Statistics, Geo-Statistics,  
Big Geospatial Data Visualization  
Classification & Analysis, Mathematical  
Modeling on RS & GIS Applications,  
Spatial Data Mining, Neural Networks,  
Artificial Intelligence, Machine Learning  
& Deep Learning.

### Software Skills:

RStudio, Python, ITSM (Interactive Time  
Series Modelling), MATLAB, SPSS  
(Statistical Package for Social Sciences),  
Minitab, SAS (Statistical Analysis  
System), ERDAS Imagine, QGIS, ENVI,  
LaTex.



### **Bhashakara N. Nautiyal**

#### **Qualification:**

PGD in Remote Sensing & GIS  
(Specialization: Water Resource)

M.Sc. (Geology)

B.Sc. (Geology, Physics, Maths)

#### **Area of Interest:**

Water Resources Management,  
Watershed Planning and Monitoring,  
Glacier Studies, Environmental Impact  
Assessment, Disaster Management,  
Hydrological and hydrodynamic  
modelling.

#### **Software Skills:**

QGIS, ERDAS Imagine, SNAP, ENVI,  
ArcGIS, MATLAB, Python, C, R, Html,  
SQL

bidipta.ghosal@gmail.com



### **Bidipta Ghosal**

#### **Qualifications:**

PGD in Remote Sensing & GIS  
(Specialization: Forest Resources and  
Ecosystem Analysis)

M.Sc. (Environmental Science)

B.Sc. (Zoology, Physiology, Chemistry)

#### **Area of Interest:**

Application of Remote Sensing and GIS  
in Biodiversity Conservation and  
Management (with focus on Wildlife  
related studies), Forest Mapping and  
Monitoring, Wildlife Protection,  
Protected Area Planning, Agroforestry  
and Urban Forestry, Climate Change  
Studies, Human Ecology & Community  
Participation, Environmental Planning  
and Management.

#### **Software Skills:**

R, Python, ERDAS Imagine, SNAP, ENVI,  
ArcGIS, QGIS, Microsoft Office (Word,  
Excel, Power Point)

chitrakumar116@gmail.com



### **Chitra Kumar**

#### **Qualifications:**

PGD in Remote Sensing & GIS  
(Specialization: Forest Resources and  
Ecosystem Analysis)

M.Sc. (Environmental Sciences)

B.Sc.-Hons (Botany)

#### **Area of Interest:**

Climate Change, Application of SAR  
remote sensing in forestry, Forest  
Mapping & Monitoring, Forest  
Inventory, Forest Informatics and  
Restoration Ecology.

#### **Software Skills:**

Python, ArcGIS, ENVI, SNAP, QGIS,  
ERDAS Imagine, PolSAR pro,  
Microsoft Office, Google Earth Engine  
Platform, Microsoft Office, PC-ORD,  
Fargstat

devdinesh.dinesh@gmail.com



### **Dev Dinesh**

#### **Qualifications:**

PGD in Remote Sensing & GIS  
(Specialization: Satellite Image  
Analysis & Photogrammetry)  
B.Tech (Information Technology)  
Diploma (Computer Science &  
Engineering)

#### **Area of Interest:**

Planetary Remote Sensing, Spatial  
Data Science (Machine/Deep  
Learning), Soft Computing (Fuzzy  
Algorithms, Mathematical Modelling,  
Scientific Computation on Geospatial  
Dataset), SAR & Hyperspectral  
Remote Sensing, Environment Impact  
Assessment, GNSS/IRNSS Study.

#### **Software Skills:**

C, C++ , Python, R Studio, Javascript,  
Java/JSP, Netbean IDE, MATLAB,  
WEKA, PHP, SQL, GeoServer, QGIS,  
SNAP, ENVI, ArcGIS, ERDAS Imagine,  
eCognition, OriginPro, PostGreSQL,  
PolSAR Pro, GMT SAR, Blender,  
Cesium, Google Earth Engine, Google  
GNSS Analysis Tool, Google SketchUp.



devendrakumar.irs@gmail.com



## Devendra Kumar

### Qualification:

PGD in Remote Sensing & GIS  
(Specialization: Spatial Data Science)  
B. Tech (Electronics & Communication  
Engineering)

### Area of Interest :

Spatial Data Analytics/Modelling, Geo-  
Data Analytics, Remote Sensing and  
GIS Applications, Machine/Deep  
Learning, Big Data, Project Planning  
and Management.

### Software Skills :

Python, SQL, QGIS, SNAP, ENVI,  
ERDAS Imagine, MapInfo, Google  
Earth Engine

devendranagale@gmail.com



## Devendra Shashikant Nagale

### Qualifications:

PGD in Remote Sensing & GIS  
(Specialization: Geosciences)  
M.Sc. (Geology)  
B.Sc. (Geology)

### Area of Interest:

Application of Remote sensing and  
GIS in Groundwater studies,  
Watershed resources, Engineering  
geology, Site investigation, Disaster  
management, Environmental impact  
assessment, Planetary geology,  
Mineral and hydrocarbon exploration.

### Software Skills:

Python, R, ArcGIS, QGIS, ERDAS  
imagine, ENVI, SNAP, Corel Draw, MS  
office

elkanna1996@gmail.com



## Elka Siju

### Qualifications:

~~PGD in Remote Sensing & GIS  
(Specialization: Natural Hazards and  
Disaster Risk Management)  
M.Sc. (Applied Geology)  
B.Sc. (Geology, Chemistry, Statistics)~~

### Area of Interest:

~~Application of Remote Sensing and  
GIS in Natural hazards, Disaster Risk  
Management, Vulnerability  
assessment, Environmental Impact  
Assessment, Hazard Zonation  
Mapping, Drought assessment,  
Groundwater hydrology,  
Oceanography, Geomorphology,  
Impact of Climate change.~~

### Software Skills:

~~ERDAS Imagine, ArcGIS, ENVI, QGIS,  
SNAP, LiDAR 360 Google Earth Pro,  
SedLog, GRADISTAT, Microsoft Office~~

sruthi6470@gmail.com



## Gurram Gnanasruthi

### Qualifications:

PGD in Remote Sensing & GIS  
(Specialization: Satellite Image Analysis  
& Photogrammetry)  
B.Tech (Ggeoinformatics)

### Area of Interest:

Optical remote sensing, Hyperspectral  
remote sensing, Digital Image  
Processing, GIS, Geomorphology,  
groundwater exploration techniques,  
photometric correction of Hyperspectral  
data, Mineral exploration on lunar  
surface using Hyperspectral data.

### Software Skills:

C/C++, JAVA, SQL, ERDAS Imagine,  
ArcGIS, QGIS, ENVI, SNAP, GRASS.

meetjayneel@gmail.com



## Jayneel Naimeshbhai Shah

### Qualification:

PGD in Remote Sensing & GIS  
(Specialization: Urban & Regional  
Studies)  
B. Arch

### Area of Interest:

Urban and Regional Planning,  
Transportation Planning, 3D City  
Modeling, GIS Applications

### Software Skills:

ArcGIS, QGIS, ERDAS Imagine, ENVI,  
AutoCAD, ProgeCAD, Photoshop, Revit,  
Google Earth, Autoplotter, Quikgrid,  
Transit.

jwalpa@gmail.com



## Jwalpa Tyagi

### Qualifications:

PGD in Remote Sensing & GIS  
(Specialization: Forest Resources &  
Ecosystem Analysis)  
M.Sc. (Environmental Science)  
B.Sc. (Botany, Zoology and Chemistry)

### Area of Interest:

Forest Mapping and Monitoring, Site  
Suitability for Species, Protected Area  
Planning, Agroforestry and Urban  
Forestry, Forest fire monitoring, Wildlife  
protection and Climate Change studies.

### Software Skills:

ArcGIS, ERDAS Imagine, QGIS, SNAP,  
ENVI, Microsoft Office, Google Earth  
Engine

kamya.egeo@gmail.com



## Kamya Diwedi

### Qualifications:

PGD in Remote Sensing & GIS  
(Specialization: Geoscience)  
M.Sc. (Geology)  
B.Sc. (Geology)

### Area of Interest:

Natural Hazard mitigation, Landslide  
monitoring using SAR Interferometry,  
Coal quality assessment using  
Spectroradiometry

### Software Skills:

Python, Java, SQL GIS Software,  
Arc GIS, ERDAS Imagine, ENVI, SNAP.

sreesaikarthik@gmail.com



## Sree Sai Karthik Gangumalla

### Qualifications:

PGD in Remote Sensing & GIS  
(Specialization: Geosciences)  
M.Sc. (Geology)  
B.Sc. (Geology)

### Area of Interest:

Application of RS and GIS in Mine  
Planning; Mineral, Ground water and  
Oil Exploration; Reconnaissance  
Survey; Geophysical exploration;  
Earthquake hazard assessment;  
Landslide modelling; Flood modelling;  
Coastline survey; Soil erosion  
assessment; Post-disaster  
management.

### Software Skills:

ArcGIS, ERDAS IMAGE, ENVI, QGIS,  
SNAP, C, Microsoft Office.

batinikiranmayee04@gmail.com



## B. Kiranmayee

### Qualification:

PGD in Remote Sensing & GIS  
(Specialization: Satellite Image  
Analysis & Photogrammetry)  
B.Tech (Geo-Informatics)

### Area of Interest :

Digital Image Processing, Aerial and  
Satellite Photogrammetry, Remote  
sensing, GIS, GPS.

### Software Skills :

ArcGIS, QGIS, ENVI, ERDAS, SNAP,  
Python.

megha26lucky@gmail.com



## Megha Negi

### Qualifications:

PGD in Remote Sensing & GIS  
(Specialization: Forest Resources &  
Ecosystem Analysis)  
M.Sc. (Botany)  
B.Sc. (Zoology, Botany, Chemistry)

### Area of Interest:

Invasive Species Science, Conservation  
Biology, Restoration Ecology,  
Environmental Impact Assessment,  
Evolutionary Ecology, Forest &  
Grassland Ecology, Behavioral Ecology &  
Sociobiology, Theoretical Biology,  
Applied Ecology, Bioinformatics, Spatial  
Ecology, Paleoecology, Climate-Change  
Ecology

### Software Skills:

Python, R, ERDAS Imagine, QGIS, SNAP,  
ArcGIS, ENVI, Google Earth Pro, Adobe  
Photoshop, Microsoft Office (Word,  
Excel, PowerPoint)

nimisha.josewayanad@gmail.com



## Nimisha Jose

### Qualifications:

PGD in Remote Sensing & GIS  
(Specialization: Satellite Image Analysis  
& Photogrammetry)  
M.Sc. (Physics)  
B.Sc. (Physics)

### Area of Interest:

Remote Sensing, Digital image  
processing, Microwave Remote sensing,  
Photogrammetry, GIS and Applications,  
LiDAR, Aerial and Satellite  
Photogrammetry

### Software Skills:

ERDAS Imagine, QGIS, ArcGIS, ENVI,  
SNAP, Python, C, VB, ATLAB, Microsoft  
Office (Word, Excel, Power Point)

pandepooja2298@gmail.com



## Pooja Pande

### Qualification:

PGD in Remote Sensing & GIS  
(Specialization: Spatial Data Science)  
B.E. (Computer Science & Engineering)

### Area of Interest:

Data Science, GIS application, Machine  
Learning, Image Analysis, Data Mining,  
Deep Learning, Remote Sensing.

### Software Skills:

Python, R, PostgreSQL, ERDAS Imagine,  
ENVI, MATLAB

sharma.praveen3219@gmail.com



### Praveen Sharma

#### Qualifications:

PGD in Remote Sensing & GIS  
(Specialization: Satellite Image Analysis  
& Photogrammetry)  
M.Sc. (Physics)  
B.Sc.- Hons (Physics)

#### Area of Interest:

Digital Image Processing, Application of  
Remote Sensing and GIS in Natural  
Resource Management and Climate  
Change, Environmental Impact  
Assessment, Forest Mapping and  
Monitoring.

#### Software Skills:

C, C++, Python, R, MATLAB, ArcGIS,  
QGIS, ERDAS Imagine, ENVI, SNAP,  
LaTeX

pmishra110195@gmail.com



### Priyanka Mishra

#### Qualifications:

PGD in Remote Sensing & GIS  
(Specialization: Natural Hazard &  
Disaster Risk Management)  
M.Sc. (Environmental Science)  
B.Sc. (Physics, Chemistry & Biology)

#### Area of Interest:

Risk assessment and Disaster  
Management, Impact of climate  
change, Hazard Zonation Mapping and  
Application of RS and GIS in  
Hydrological Modelling

#### Software Skills:

R, ERDAS Imagine, ENVI, MATLAB,  
ArcGIS, QGIS, Python.

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### Rucha Vivek Kanchan

#### Qualifications:

PGD in Remote Sensing & GIS  
(Specialization: Geoscience)

M.Sc. (Geology)

B.Sc. (Geology, Physics)

#### Area of Interest:

Applications of Remote Sensing and  
GIS in Engineering geology, Structural  
geology, Mineral exploration, Hazard  
mitigation, Data Science

#### Software Skills:

Python, R, ArcGIS, QGIS, ERDAS  
Imagine, ENVI, SNAP, AutoCAD,  
MicroStation, FaultKin, Dips,  
STEREONET

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### Santosh Kumar Singh

#### Qualifications:

PGD in Remote Sensing & GIS  
(Specialization: Agriculture & Soils)  
B.Sc. (Agriculture)

#### Area of Interest:

Crop inventory, Crop monitoring,  
Drought assessment, Soil moisture  
retrieval, Artificial intelligence in  
agriculture.

#### Software Skills:

SNAP, ENVI, ERDAS Imagine, ArcGIS,  
QGIS, R, Python

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## Santosh H R

### Qualifications:

PGD in Remote Sensing & GIS  
(Specialization: Natural Hazards &  
Disaster Risk Management)  
B.E (Civil Engineering)

### Area of Interest:

Disaster risk Mitigation and relief  
Management, Mapping of Flood zone,  
Earth Quake zone, Forest fire, Climate  
change, Past/Future Hazard analysis and  
assessment, Environmental Impact  
Assessment, Forest area and Forest  
Cover mapping, Impact of  
Natural/manmade Disasters on Wildlife,  
Assessment of man-made  
structures(DAMS), Monitoring the  
Marine Disasters and Atmospheric  
changes, Use of GPS and TOTAL  
STATION for field operations, Surveying  
impact areas, Applications of RS and GIS  
in Disasters Monitoring and Analysis,

### Software Skills:

ArcGIS, QGIS, SNAP, ERDAS Imagine,  
PYTHON, C, ENVI, AUTOCADD, REVIT  
ARCHITECTURE, ILWIS,  
Microsoft Office

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## Shubham Kaushik

### Qualification:

PGD in Remote Sensing & GIS  
(Specialization: Satellite Image Analysis  
and Photogrammetry)  
B.Tech (Electronics and Communication)

### Area of Interest:

Digital Image Processing, Aircraft  
Remote Sensing & Navigation of Aircraft  
RS data using GNSS Systems, Emerging  
Sensors and Data Processing, Digital  
Photogrammetry & Mapping,  
Computation and Programming of  
Geospatial Data using Python, Antenna  
Design and Simulation and its usage in  
VLF, VHF, Data Science, Artificial  
Intelligence.

### Software Skills:

ERDAS Imagine, SNAP, ENVI, Google  
Earth Engine (GEE), QGIS, ArcGIS, IDRISI,  
Python (SPYDER Tool), R Language,  
PolSARpro, SIEMENS Semantic  
Manager, SIEMENS Wincc Explorer,  
SIEMENS Wincc Flexible, C, C++,  
Ansoft HFSS, PROTEUS, EAGLE,  
MATLAB, Geo Explorer(Terrasynce)

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## Surbhi Ravindra Patil

### Qualifications:

PGD in Remote Sensing & GIS  
(Specialization: Natural Hazard &  
Disaster Risk Management)  
M.Sc. (Geology)  
B.Sc. (Geology)

### Area of Interest:

Catastrophic Risk Analysis and  
Interpretation, Hazard Zonation Mapping  
and Modelling, Susceptibility,  
Vulnerability and Risk assessment,  
Application of RS and GIS in Natural  
Hazard and Disaster Risk Management

### Software Skills:

ERDAS, ArcGIS, QGIS, AUTOCAD, SNAP,  
ENVI, MicroStation

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## Swathi Kalyani

### Qualifications:

PGD in Remote Sensing & GIS  
(Specialization: Water Resources)  
B. Tech (Agricultural Engineering)

### Area of Interest:

Watershed and hydrological modelling,  
Flood mapping, Flood monitoring and  
impact assessment, Crop monitoring  
and mapping, agro-meteorology.  
Sustainable irrigation techniques, soil  
moisture retrieval, Water quality  
analysis.

### Software Skills:

ArcGIS, QGIS, ERDAS, SNAP, Google  
Earth Engine, AutoCAD



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### **Tania Sharma**

#### **Qualifications:**

PGD in Remote Sensing & GIS  
(Specialization: Urban Studies and  
Regional Development)  
M.Sc. (Geography)  
B.Sc. (Physics, Geography and Maths)

#### **Area of Interest:**

Hazard and Disaster Management ,  
application of RS and GIS in Urban  
Planning, Remote Sensing, Earth  
movements, Cartography

#### **Software Skills:**

ERDAS Imagine, QGIS, ENVI, SNAP,  
Microsoft Office

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### **Tanya Balani**

#### **Qualifications:**

PGD in Remote Sensing & GIS  
(Specialization: Geosciences)  
M.Sc. (Geology)  
B.Sc. (Zoology, Botany, Geology)

#### **Area of Interest:**

Mineral exploration, planetary  
sciences, Natural hazard and disaster  
management, Geodynamics and Plate  
tectonics, Earthquakes,  
Geomorphology, Glaciology, Geological  
Feature Mapping, Water Resource  
Management Mapping and  
Monitoring, Climatology, Meteorology  
and Oceanography

#### **Software Skills:**

R, Python, ArcGIS, QGIS, ENVI,  
ERDAS Imagine, LPS, SNAP, GLOBAL  
MAPPER, Google Earth Pro,  
Microsoft Office.

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### **Udita Garbyal**

#### **Qualifications:**

PGD in Remote Sensing & GIS  
(Specialization: Forest Resources and  
Ecosystem Analysis)  
M.Sc. (Environment Management )  
B.Sc. (Agriculture)

#### **Area of Interest:**

Forest mapping and monitoring, Forest  
inventory, Ecosystem services mapping,  
High altitude rangeland studies, Climate  
change studies.

#### **Software Skills:**

QGIS, ERDAS Imagine, ENVI, Google  
earth engine, SPSS, MS office.

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### **Ujjwal Kumar Swain**

#### **Qualifications:**

PGD in Remote Sensing & GIS  
(Specialization: Urban & Regional  
Studies)  
B. Arch

#### **Area of Interest:**

Urban, Regional and Spatial Planning,  
Remote Sensing & GIS, Urban Ecology,  
Sustainable Design Techniques, 3-D  
modelling with realistic rendering,  
Infrastructure Development &  
Management.

#### **Software Skills:**

R, Python, ArcGIS, ERDAS Imagine,  
QGIS, ENVI, SNAP, Google Earth Engine,  
LiDAR 360, AutoCAD, Revit with  
Enscape Plug-in, SketchUp with V-ray  
& Enscape 2.5.2, Lumion 8.0, Adobe  
Photoshop & InDesign.

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## Unnati Yadav

### Qualification:

PGD in Remote Sensing & GIS  
(Specialization: Satellite Image Analysis & Photogrammetry)

B.E (Information Technology)

### Area of Interest:

GIS and Applications, Satellite & Aerial Photogrammetry, Digital Image Processing, GIS Utility Management.

### Software Skills:

ERDAS Imagine, ArcGIS, Arc Map, ENVI, SNAP, QGIS, Ericsson Network Engineer.

vandna.pandey@gmail.com



## Vandana Pandey

### Qualifications:

PGD in Remote Sensing & GIS  
(Specialization: Forest Resources and Ecosystem Analysis)

M.Sc. (Biodiversity & Conservation)

B.Sc. (Botany, Zoology)

### Area of Interest:

Wildlife Monitoring, Wildlife Management, Human-Wildlife Conflict Mitigation, Biostatistics, Landscape Ecology, Forest Mapping

### Software Skills:

R, ArcGIS, QGIS, ERDAS Imagine, SNAP, Google Earth Engine, SPSS, XLSTAT, CAPTURE, Cyberlink PowerDirector

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## Vivek Singh Bhadoriya

### Qualifications:

PGD in Remote Sensing & GIS  
(Specialization: Marine & Atmospheric Sciences)

M.Sc. (Environmental Science)

B.Sc. (Botany, Zoology & chemistry)

### Area of Interest:

Atmospheric science and ocean dynamics, climate change

### Software Skills:

Python, MATLAB, SQL, NoSQL (MongoDB)

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## Yash Gajanan Raut

### Qualifications:

PGD in Remote Sensing & GIS  
(Specialization: Spatial Data Science)

B.E. (Computer Science & Engineering)

### Area of Interest:

Spatial Data Analysis, Data Analysis, Big data, Remote sensing, Machine Learning, GIS modelling, Data Mining, Digital Image Processing, Spatial data visualization, Network Security.

### Software Skills:

Python, R, C, C++, SQL, HTML, Tableau, Power BI, ArcGIS, ENVI, ERDAS Imagine, SNAP, PostgreSQL, QGIS, Google Earth Engine, SAS (Statistical Analysis System) & MySQL.

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### **Ishita Raj**

#### **Qualifications:**

PGD in Remote Sensing & GIS  
(Specialization: Natural Hazard and  
Disaster Risk Management)  
B.Sc (Geography)

#### **Area of Interest:**

Application of RS and GIS in Natural  
Hazards and Disaster Management,  
Geomorphology, Plate Tectonics,  
Forest fire monitoring, Landslide  
Monitoring, Flood zone Mapping, Soil  
Erosion Modelling

#### **Software Skills:**

QGIS , ArcGIS, ERDAS Imagine, ENVI ,  
Microsoft Office

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### **Subhasmita Ray**

#### **Qualifications:**

PGD in Remote Sensing & GIS  
(Specialization: Marine and  
atmospheric Science)  
M.Sc. (Geography)  
B.Sc. Hons (Geography )

#### **Area of Interest:**

Climatology, Geomorphology, Glaciology,  
Coastal Management, Oceanography

#### **Software Skills:**

ENVI, Imagine, ArcGIS, Qgis,  
SNAP, MS Office

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