

IIRS Outreach Program

AI/ML for Geodata Analytics

Schedule & Lecture Details

August 03 – 14, 2026

Lecture No.	Date/Time	Topic	Syllabus
L1	August 3, 2026 1600 hrs	GIS Data analytics	Introduction to Data Analytics, Data Collection methods, Data Cleaning, Exploratory Data Analysis, Data Visualization tools
L2	August 4, 2026 1600 hrs	Image Processing Methods	Introduction to Digital Images, Image Enhancement and Restoration, Image Transforms, Image segmentation, Object Detection
L3	August 5, 2026 1600 hrs	Vector Data Processing	Introduction to Vector Data, Source of Vector Data, Vector Data Analysis-Buffer, Overlay etc.
L4	August 6, 2026 1600 hrs	Concept of Data Science	Overview of Spatial Data Science: Approaches and Tools
L5	August 7, 2026 1600 hrs	Python for Image Processing	Basic Image Operations, Image Enhancement, Geometric Transformations, Image Filtering, sharpening, edge detection
L6	August 10, 2026 1600 hrs	Machine Learning for geospatial analysis	Basics of Machine Learning/ Implementing Machine Learning algorithm for geospatial data processing
L7	August 11, 2026 1600 hrs	ANN and Deep Learning	Introduction to AI in Geospatial Analysis, Introduction to Artificial Neural Networks, Deep Learning Architectures for Geospatial Analysis: CNN, Image Classification, Object Detection and Segmentation
L8	August 12, 2026 1600 hrs	AI/ML for Agriculture Analytics	Case Examples for AI/ML for Agriculture Analytics
L9	August 13, 2026 1600 hrs	Advances in AI/ML for Geo-data processing	GeoAI for Smart Governance: From Spatial Data to Intelligent Decision
L10	August 14, 2026 1600 hrs	Generative AI and NLP for Geodata Analytics	Fundamentals of Generative AI, Large Language Models (LLMs), Natural Language Processing (NLP) for Geodata