



POLITECNICO
MILANO 1863

DIPARTIMENTO DI INGEGNERIA
CIVILE E AMBIENTALE

Passion in Action:
Artificial Intelligence for the Earth:
Geospatial Foundation Models

Project assignment

Department of Civil and Environmental Engineering

Politecnico di Milano

22.10.2025

Scene Classification using Geospatial Foundation Models

Building upon the knowledge and skills acquired throughout the course, the project focuses on the practical implementation of a scene classification task using land cover ground truth data from the LUCAS dataset. Each student will work on an individual case study (see assignment table) and apply a geospatial foundation model of their choice (Prithvi or TerraMind) to perform classification over assigned country.

The project aims to consolidate the understanding of dataset preparation, model fine-tuning, and evaluation in the context of Earth Observation and GeoAI applications.

Main tasks:

- Generate a custom dataset using LUCAS points, extracting at least 100 image chips for training and validation.
- Fine-tune the chosen model (Prithvi or TerraMind) for the scene classification task.
- Evaluate and test model performance.
- Prepare a Jupyter Notebook documenting the full workflow and a PDF report summarizing the methodology, outputs, and results.

Delivery:

- Submission: via WeBeep
- Materials: Notebook + PDF summary
- Deadline: *30 November 2025* (December graduates – contact us!)



Tutors

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