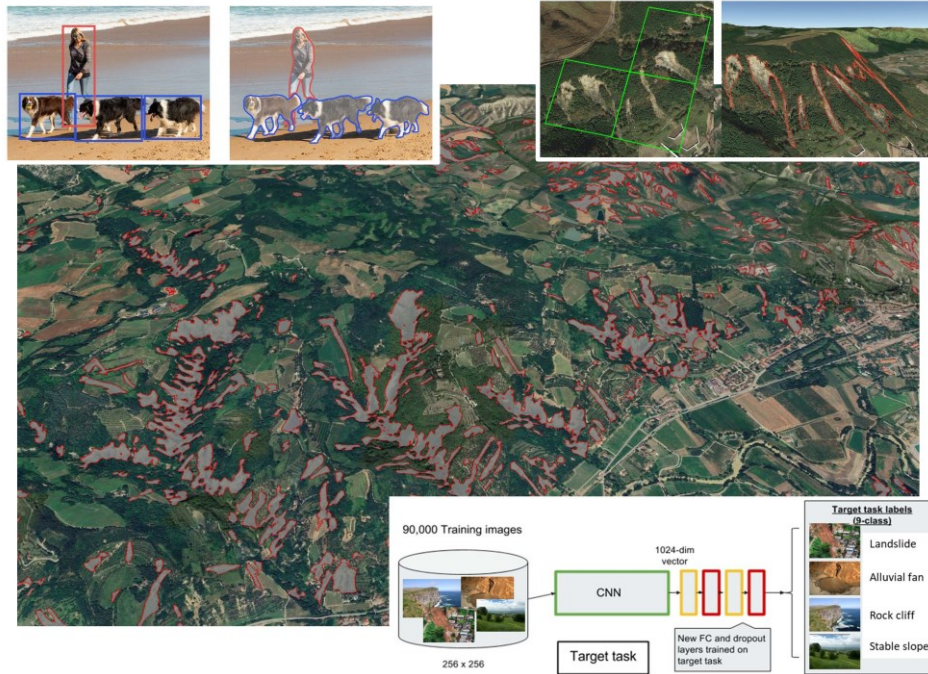




SHORT COURSE

Machine Learning for Optical Image Analysis: Focus on Landslides and Floods

Prof. Filippo Catani and Dr. Sansar R. Meena



Program

This course is designed to offer an in-depth understanding of applying machine learning (ML) techniques to optical image data, with a particular focus on monitoring and analyzing landslides and floods through remote sensing. Participants will gain hands-on experience in processing and interpreting optical images, learning how to extract critical insights for disaster management and environmental monitoring. Through a blend of theoretical foundations and practical exercises, the course will cover a range of topics from basic principles of optical remote sensing to advanced ML algorithms for detecting and assessing natural hazards. By the end of this program, attendees will be equipped with the necessary skills to leverage optical remote sensing data in conjunction with ML models for effective decision-making in disaster response and mitigation strategies.

June 4, 2024	
09:30 - 12:30	Introduction to ML and DL for Remote Sensing: An overview focusing on applications in environmental hazard analysis, particularly landslides and floods.
14:00 - 18:00	Hands-on Python and DL Libraries Setup: Practical session on setting up and using Python and DL libraries for remote sensing data analysis. Includes basic exercises on data handling and analysis techniques.
June 5, 2024	
09:30 - 12:30	Landslide Detection with ML on Optical Images: Hands-on training on applying ML techniques for landslide detection and analysis, using high-resolution satellite imagery.
14:00 - 18:00	Advanced DL Techniques and Project Work: Deep dive into advanced DL models for remote sensing applied to landslides and floods, followed by an open lab session for project work on detecting and analyzing these natural hazards.