



Università
di Genova

DICCA DIPARTIMENTO
DI INGEGNERIA CIVILE, CHIMICA
E AMBIENTALE

DICCA
SEMINARS

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“Discover and share the digital environmental
value by GEO-AI challenges ”

ABSTRACT

The seminar aims to provide an overview of the innovative solutions that Geomatics, relying on the experiences of the GAP research team at UNIVPM, has addressed to the territorial/urban/architectural/archaeological fields, applying integrated techniques for data acquisition and combining multidisciplinary information to organize and make it available at different scales and different levels of use. The integration between Geomatics and ICT has recently developed into the concept of Geospatial Artificial Intelligence (Geo-AI) which is a new paradigm for discovering geographical knowledge and beyond, useful for automatically solving the task of classification, object detection, semantic segmentation and more. During the seminar, the main skills used in research and the different challenges faced in obtaining, managing, visualizing and making operational and useful geospatial data, will be illustrated. A focus will be on the territorial scale with the use of remote sensing and SLAM data in an integrated way for the 3D modelling of surveyed emergencies or to update the maps of archaeological sites or urban emergencies that are not always known (underground environments). An overview will be given of the development of AI algorithms for soil management and monitoring with thematic maps and change detection, which then directly produce GIS-ready solutions for precision farming and precision forestry. It will also describe how a better knowledge of emergency phenomena can be achieved through the analysis of data both from FSAR and INSAR active remote sensing sensors, in order to obtain 3D terrain models (DEM/DTM) and assess changes in the territory, for example in landslide monitoring, and from Lidar data, to assess the trend of cliffs or quarries. In the field of emergencies and safety, the development of platforms able of managing 'smart' data in urban locations affected by earthquakes, with the management of Big Data in geodatabases, should not be overlooked in the end. Much of the analysis was carried out by means of opensource software to illustrate the potential of the research and to describe how it is possible to interface certain processes in a participatory and collaborative task.

REINFORCED GREEN PASS NEEDED FOR THE ATTENDANCE OF THE SEMINAR



Friday, March 18th
4.00 pm

Streaming on the Teams
channel using this link:
shorturl.at/djuCI



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