IAF EARTH OBSERVATION SYMPOSIUM (B1)
Nowhere to Hide – The impacts on society of Ubiquitous Earth Coverage (6)

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EARTH OBSERVATION FOR FACT-CHECKING: HARNESSING SPACE TECHNOLOGIES TO COUNTER DISINFORMATION AND STRENGTHEN POLICY DECISION-MAKING

Abstract

The growing pervasiveness of misinformation in today's information society calls for advanced tools for fact-checking, particularly regarding claims based on territorial and spatial data. The present abstract introduces the fact-checking framework project, developed by Fondazione E. Amaldi, as based on the integration and analysis of spatial data, leveraging satellite imagery, open-source geospatial data and machine learning models to objectively validate information related to geo-referenced events. Started in the framework of a student challenge competition of the "Deeptech, Robotics and Space economy" elective course at LUISS University taught by the Authors, the adopted approach employs remote sensing techniques, advanced GIS analysis, and predictive modeling to compare public statements with independent geospatial evidence. This method proves particularly effective in areas such as climate change monitoring, the verification of claims about catastrophic events, urban expansion analysis, and large-scale territorial dynamics assessment as well as war (battlefield or damage verifications) and political news. The integration of data from platforms such as Copernicus, OpenStreetMap, Google Maps, and IoT datasets enables the construction of a reliable and scalable ecosystem, free to access, for verifying and interpreting information. The importance of this approach lies in its ability to provide rigorous, data-driven fact-checking, with different tech approaches to address different tech skills from users and, thanks to the above-mentioned strategy, reducing ambiguity in evaluating spatial information. In a context where the manipulation and misinterpretation of geospatial data can impact environmental policies, urban planning, and global security, adopting spatial methodologies for fact-checking represents a crucial step toward ensuring transparent, evidence-based information. This abstract aims at presenting the results of the first year of on the field application of the mentioned tool, discussing results and criticism, as well as suggestion and implementations collected from users.