A.D. 1308
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DIPARTIMENTO
DI INGEGNERIA
CIVILE E AMBIENTALE

CIVIL AND ENVIRONMENTAL ENGINEERING

DOCTORAL PROGRAM 2025-2026

Born in Apulia (Italy), Pietro Milillo holds a degree in Physics from the University of Bari and a PhD in Environmental Engineering from the University of Basilicata. Italy. He is Assistant Professor of Civil and Environmental Engineering at the University of Houston, where he leads the Remote Sensing and Digital Engineering laboratory. Before joining UH, he held research positions at NASA's Jet Propulsion Laboratory / Caltech and at the German Aerospace Center (DLR), where he maintains an active research affiliation. He is currently an IEEE Senior Member. His work focuses on satellite radar remote sensing (InSAR/SAR) for ground deformation monitoring, digital terrain model generation through radargrammetry, natural hazard assessment, and infrastructure risk evaluation. He develops new algorithms for unsupervised change detection in SAR time series, enabling rapid damage mapping after natural and anthropogenic disasters.
He is co-founder of Tera Monitoring Solutions, a company that operationalizes InSAR technology for commercial infrastructure and insurance market applications. He serves on NASA's Surface Topography and Vegetation (STV) designated observable study team, contributing to the definition of science and application goals for future satellite missions. He is the recipient of NASA CESRA and STV awards, and has authored over 50 peer-reviewed publications In high-profile journals including Nature Communications, Nature Geoscience, Science Advances, and Remote Sensing of Environment.

SATELLITE RADAR FOR DECISION-MAKING: FROM INSAR MEASUREMENTS TO SOCIETAL IMPACT

Instructor

Pietro Milillo
Assistant Professor, University of Houston – German Aerospace Center (DLR)
NASA Surface Topography and Vegetation Applications Lead

Course description

This course traces the complete journey from satellite radar acquisition to societal decision-making, with uncertainty as the unifying thread.
Across four lectures, students will learn how SAR and InSAR measurements are generated, how they are transformed into knowledge about physical processes, how that knowledge informs real-world decisions in insurance markets and emergency response, and how the entire framework can be inverted to design the next generation of Earth observation missions.
Each lecture connects rigorous signal processing to tangible outcome, bridging the gap between the remote sensing laboratory and the boardroom, the emergency operations center, and the space agency.

Course Schedule (6 hours, 1 CFU)

16/06/2026	9:30 -12:30
19/06/2026	9:30 -12:30

Location

Campus of Engineering, Room 13
University of Perugia Via G. Duranti, 93 - Perugia

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TO JOIN!

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