



Francesca Trevisiol

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Date of birth: 27/12/1991 **Nationality**: Italian

WORK EXPERIENCE

[03/06/2024 – Current]

Earth Observation Researcher

CIMA Redearch Foundation

City: Savona | **Country**: Italy

Developing algorithms for flood mapping from both multispectral and SAR data (Sentinel-1 and Sentinel-2 data) in opensource environment (Python) for the CopLAC project (ESA).

[01/05/2022 – 31/05/2024]

Remote Sensing Consultant

Hydro Nova srl - hydronova.tech

Country: Italy

Collaborating with an interdisciplinary team of geologist and hydraulic engineers, I analyse satellite imagery and geospatial data, producing layers to support multicriteria analysis in GIS environment for the projects:

- Mapping of Groundwater Potential in Southeastern Rwanda (UNICEF)
- Somalila Water for Rural Resilience Project 'Barwaaqo' (The World Bank)

[01/11/2019 – 06/2024]

Research fellow

University of Bologna - DICAM Dept.

City: Bologna | **Country**: Italy

- Identification, monitoring and mapping of natural disasters through the analysis of geospatial data, with attention to flood and subsidence-related phenomena.
- Research Supervisor: Prof. Gabriele Bitelli
- Speaker at conferences
- Co-supervisor of 10 master thesis in Civil and Environmental Engineering about the use of geospatial data for environmental monitoring

[15/05/2022 – 15/09/2022]

Visiting PhD student

Delft University of Technology, Geoscience and Remote Sensing

City: Delft | **Country**: Netherlands

Research project: Satellite images time series analysis for levees stability monitoring.

Supervisor: Prof. Ramon Hanssen. Co-supervisor: Dr Freek Van Leijen.

[01/09/2017 – 15/06/2018]

Trainee

ENEA (Italian National Agency for new technologies, Energy and Sustainable Economic Development)

City: Bologna | **Country**: Italy

Internship at the remote sensing lab.

Flood mapping and recovery monitoring analysing both optical and radar data. Post flood crop monitoring. GIS analysis.

TEACHING ACTIVITY

[09/12/2024 – 13/12/2024]

Remote Sensing for Early Warnings and Early Action

CIMA Research Foundation - Nairobi (Kenya)

- Trainer of the five days workshop held in Nairobi, Kenya, from 9th to 13th November 2024, within the EW4IGAD project for UNDRR.

[01/03/2024 – 31/07/2024]

Laboratory of Soil and Land Protection (Geomatics module)

University of Bologna - Bologna [A.Y. 2023-2024]

- Professor of the Survey and GIS module of the laboratory for the second cycle degree programme in Environmental Engineering, at the University of Bologna. Interdisciplinary surveying of the Scascoli's landslide (Loiano, Bologna).

Link: <https://www.unibo.it/it/studiare/dottorati-master-specializzazioni-e-altra-formazione/insegnamenti/insegnamento/2023/467375>

[01/02/2018 – 31/05/2024]

Academic tutor

University of Bologna - Bologna

- Tutor providing teaching support and training on GIS and image processing software (SNAP/ENVI) for the courses:
 - "GEOMATICS FOR URBAN AND REGIONAL ANALYSIS" - Master's in Building Engineering and Architecture
 - "APPLIED GEOMATICS" - Master's in Civil Engineering
 - "TELERILEVAMENTO E GIS M" - Master's in Civil and Environmental Engineering
- Organizer and trainer of crowd mapping events for humanitarian purposes ('MAPATHON for Geo Awareness Week' and 'UN MAPS for Somalia' in collaboration with the United Nations).

[01/02/2024 – 29/02/2024]

From topographic and photogrammetric survey to GIS analysis (17h)

University of Bologna | Istituto Superiore Pacinotti - Bologna

- Instructor within the PCTO for the fifth grade classes of the technical high school Crescenzi Pacinotti Sirani in Bologna. Training including drone survey and photogrammetric analysis with Zephyr 3D. QGIS geospatial analysis.

[12/04/2023 – 15/04/2023]

GIS Trainer

Professional Building Institute of Bologna

- Instructor of the training "Introduction to GIS fundamentals and the QGIS software"

[13/12/2022 – 16/12/2022]

Satellite Image processing Instructor

Europlanet society - Ethiopia

- Instructor at the workshop "Earth Observation Techniques and Data Analysis – Europlanet WorkshopSeries" held in Addis Ababa from 13-16 December 2022. Basics of remote sensing image processing with SNAP software.

EDUCATION AND TRAINING

[01/11/2019 – 15/06/2023]

PhD in Civil, Chemical, Environmental and Materials Engineering

ALMA MATER STUDIORUM - University of Bologna

Address: viale del Risorgimento 2, 40123, Bologna, Italy | **Field(s) of study:** Earth observation | **Thesis:** CROSS-SENSORS ANALYSIS OF MULTISPECTRAL EARTH OBSERVATION DATA FOR ENVIRONMENTAL MONITORING

Supervisor: Prof. Gabriele Bitelli. Co-supervisor: Dr Emanuele Mandanici.

[01/10/2015 – 16/06/2018]

Master's degree in Environmental Engineering

ALMA MATER STUDIORUM - University of Bologna

Address: viale del Risorgimento 2, 40123, Bologna, Italy | | **Thesis:** Satellite remote sensing for natural disaster management: flooding along the Enza and Parma rivers, December 2017

Bachelor's Degree in Environmental Engineering

University of Padua

COURSES & OTHER TRAININGS

[01/06/2019 – 31/07/2019]

Basics of statistics and database management (80h)

CISITA Parma - BigDataLab Project (funded by Emilia-Romagna region)

[02/04/2019 – 04/04/2019]

Automatic geosprocessing and machine learning with ERDAS IMAGINE

Planetek Italy - Bari

[06/02/2019 – 08/02/2019]

Introduction to Python programming

CINECA - Segrate (MI)

HONOURS AND AWARDS

[20/09/2018]

Geomatics Award Awarding institution: RemTech Expo

Winner of cat. A "Geomatics for land control" with the contribution *Sentinel 1 satellite images for flooded areas mapping* by Trevisiol F., Immordino F., Franci F. and Bitelli G.

LANGUAGE SKILLS

Mother tongue(s): Italian

Other language(s):

English

LISTENING B2 **READING** B2 **WRITING** C1

SPOKEN PRODUCTION B2 **SPOKEN INTERACTION** B2

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

DIGITAL SKILLS

My Digital Skills

Coding

Python | R | JavaScript | MATLAB

Satellite image processing and GIS

SNAP | ENVI | Google Earth Engine | eCognition | QGIS

PUBLICATIONS

[2024]

Evaluation of Landsat-9 interoperability with Sentinel-2 and Landsat-8 over Europe and local comparison with field surveys

Reference: Trevisiol F.; Mandanici E.; Pagliarani A.; Bitelli G.

in «ISPRS Journal of Photogrammetry and Remote Sensing», vol. 210, pp.55-68, 2024.
[Scientific Article]

[2024] [Cross sensors comparison of popular vegetation indexes from Landsat TM, ETM+, OLI and Sentinel MSI for time series analysis over Europe](#)

Reference: Trevisiol F., Mattivi P., Mandanici E., Bitelli G.

in: «IEEE Transactions on Geoscience and Remote Sensing», vol. 62, pp. 1-16, 2024, Art no. 4400616. [Scientific Article]

[2023] [3D Data Management and Thermographic Studies as a Knowledge Base for the Conservation of a Rationalist Architecture](#)

Reference: Barbieri E.; Franzoni E.; Lambertini A.; Pizzigatti C.; Trevisiol F.; Bitelli G.,

in: Lecture Notes in Mechanical Engineering, Springer Science and Business Media Deutschland GmbH, 2023, pp. 3 - 15 (proceedings: 3rd International Conference on The Future of Heritage Science and Technologies, Florence Heri-Tech 2022, ita, 16-18 May 2022) [Contribution to conference proceedings]

[2022] [Multitemporal Thermal Imagery Acquisition and Data Processing on Historical Masonry: Experimental Application on a Case Study](#)

Reference: Trevisiol F.; Barbieri E.; Bitelli G.

in: «SUSTAINABILITY», 2022, 14, Article number: 10559 , pp. 1 - 13 [Scientific article]

[2022] [An Object-Oriented Approach to the Classification of Roofing Materials Using Very High-Resolution Satellite Stereo-Pairs](#)

Reference: Trevisiol F.; Lambertini A.; Franci F.; Mandanici E.

in: «REMOTE SENSING», 2022, 14, Article number: 849 , pp. 1 - 18 [Scientific article]

[2022] [Evaluating water-repellents applied to brick masonry: An experimental study by thermal imaging and water transport properties' characterization](#)

Reference: Barbieri E.; Trevisiol F.; Pizzigatti C.; Bitelli G.; Franzoni E.

in: «CONSTRUCTION AND BUILDING MATERIALS», 2022, 356, Article number: 129319 , pp. 1 - 13 [Scientific article]

[2023] [Application of deep learning crop classification model based on multispectral and SAR satellite imagery.](#)

Reference: Qi Y., Bitelli G., Mandanici E., Trevisiol F..

in: «INTERNATIONAL ARCHIVES OF THE PHOTOGRAMMETRY, REMOTE SENSING AND SPATIAL INFORMATION SCIENCES», 2023, XLVIII-1/W2-2023, pp. 1515 - 1521 [Contribution to conference proceedings]

PROJECTS

[2024 – Current]

CopLAC

CopernicusLAC develops EO-based services in the Latin American and Caribbean region to enhance disaster risk reduction, geological hazard mitigation, and exposure assessment. Leveraging Copernicus data, the project supports local authorities in building resilience, improving preparedness, and enabling informed decision-making for sustainable development.

CopLAC is held for the European Space Agency under contract number 4000144210/24/I-KE (<https://www.copernicuslac-panama.eu/>).

[2019 – 2023] **SHELTER**

European Union's Horizon 2020 research and innovation programme under grant agreement No 821282.

SHELTER develops a data-driven, community-based framework to enhance the resilience of cultural heritage against climate-related hazards, promoting safer and sustainable reconstruction in historic areas. The project involves five open-labs across Europe to validate innovative methodologies, tools, and governance models for adaptive heritage management. (<https://shelter-project.com/>)

[2021 – 2023] **AMIRA**

"Analisi e monitoraggio dell'Integrità dei Rilevati Arginali dei fiumi appenninici" - Research agreement EX ART. 15 L. 241/90 Rep. 149/2021 with AIPO

[2020 – 2022] **ECOSAM**

"Evaluation of COntaminated soils & SEnsitivity SAteellite Mapping" - ECOSAM develops environmental sensitivity maps using satellite imagery to support the Oil Spill Contingency Plan, enhancing preparedness and response to marine pollution incidents.

Research agreement between ENI S.p.A and DICAM (UNIBO) n°2500029504.