FEDERICA GASPARI

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Environmental Engineering MSc. Graduate at Politecnico di Milano (Italy), passionate about **Geographic Information Systems**, **Remote Sensing** and **Photogrammetric** innovative applications.

EXPERIENCE

NOV 2022 – NOW
PHD CANDIDATE, POLITECNICO DI MILANO
Research project: Geomatics for a multi-scale integrated approach in support of decision making for bridge monitoring – Environmental and Infrastructure Engineering (XXXVIII Cycle).
Development of procedures and an integrated platform for monitoring and rapid mapping of the condition of civil infrastructures and the environment on which they insist using approaches through Geographical Information Systems (GIS), remote sensing, photogrammetry and deep learning technologies.

DEC 2020 – OCT 2022
GRADUATE RESEARCH FELLOW, POLITECNICO DI MILANO - LABMGF
Development and implementation of procedures in GIS environment for the management of geo-referenced information flows. SW used: QGIS, Agisoft Metashape, CloudCompare, Qfield, Potree, PostgreSQL.
Support to the monitoring activities of bridges in Piacenza Province and dams in Calabria with topographic, laser scanning and drone surveys.
Teaching tutor for the surveying 2021 Summer School at Ghiacciaio Belvedere in Macugnaga (VB).
Contribution to the CIDMA (Climate Change Induced Disaster Management in Africa) MOOC preparation (video-recordings of lesson and exercise sessions) on collaborative web mapping topics.

MAR 2021 – NOW
TEACHING SUPPORT, POLITECNICO DI MILANO
Teaching assistant for:
- "Survey and 3D modelling for architecture" with special focus on the use of Agisoft Metashape, CloudCompare, ReCap and AutoCAD for photogrammetric applications and 3D modelling. Preparation of training material. [a.y. 20/21, 21/22]
- "GIS Applications" dedicated to the basics of QGIS tools linked to vector and raster analysis for architectural application with an introduction to satellite imagery processing. [a.y. 21/22]
- "Fundamental of GIS development" focused on the use of QGIS and ArcGIS Pro for basic queries and elaborations with vector and raster data in the context of urban planning. Introduction to MySQL. [a.y. 22/23]

OCT 2020 – MAY 2022
OPENSTREETMAP TEACHER & TUTOR, WIKIMEDIA ITALIA
"OpenStreetMap: il database geografico collaborativo per la conoscenza del territorio" course focused on the training of secondary school teachers for teaching through webinars and workshops the use of the most common OSM tools. Support to teaching activities and training material preparation for 5 editions.

AUG 2020 – OCT 2020
GEOSPATIAL DATA QUALITY INTERN, HUMANITARIAN OPENSTREETMAP TEAM
Online internship program focused on the use and application of methodologies and instruments to ensure geospatial feature quality on QGIS and OpenStreetMap environment. Support to the COVID response and disaster preparedness activities in Africa and in the Caribbean area.

EDUCATION

SEP 2017 – OCT 2020

MASTER OF SCIENCE ENVIRONMENTAL AND LAND PLANNING ENGINEERING, POLITECNICO DI MILANO

From October 2019 to September 2020 – Thesis work: "Geolocated Twitter data as a proxy for the analysis of natural disasters: the Hurricane Florence case study", social big data analyses in GIS environment (ArcGIS, QGIS, MATLAB, Python). Graduation Mark: 106/110 – Full text
Supervisor: Prof. Federica Migliaccio
Co-supervisor: Katarina Spasenovic, Ph.D candidate

Activities and associations: PoliMappers, Open Day, Mobility Exchange Orientation Day, International Buddy project, Webinar tutor for the *Architecture for Smart City* Course (Prof. Massimo Tadi) organised by IMM DesignLab in collaboration with PoliMappers (May-June 2020)

JAN 2019 – JUN 2019

ERASMUS EXCHANGE PROGRAMME, UNIVERSITE GRENOBLE ALPES

Genie Civil - Sciences de la terre et des planètes, environnement

Activities and associations: InteGre – International Etudiants Grenoble, U-Glisse

SEP 2014 – SEP 2017

BACHELOR OF SCIENCE ENVIRONMENTAL AND LAND PLANNING ENGINEERING, POLITECNICO DI MILANO

Thesis: "*Social Media Geographic Information: analisi geostatistiche sui dati di Instagram - Il caso di studio di Expo Milano 2015*" social big data analyses in GIS environment (ArcGIS, QGIS). Graduation Mark: 93/110
Supervisor: Prof.ssa Federica Migliaccio
Co-supervisor: Dott.ssa Diana Pagliari

Activities and associations: PoliMappers

SKILLS

LINGUE

ITALIAN Native language
ENGLISH
Listening, Reading, Speaking, Writing: Level C1
Certificate: First Certificate in English (2014)
FRENCH
Listening, Reading, Speaking, Writing: Level B2
Certificate: Français Langue étrangère (2019) – OLS Assessment (2019)

COMMUNICATION & ORGANIZATION

Team-work and problem solving attitude; good writing abilities; active listener and confident speaker; learning attitude for new and challenging activities

DIGITAL

GIS&CAD ENVIRONMENT
ArcGIS – QGIS: Proficient User
SAGA-GIS - AutoCAD – ReCap : Intermediate User
PHOTOGRAMMETRY & REMOTE SENSING
ENVI – Agisoft Metashape – CloudCompare: Experienced User
PROGRAMMING AND DATA ANALYSIS
MATLAB – Python (Numpy, GeoPandas, PyQGIS) – PostGIS: Intermediate User
R - HTML – CSS - JavaScript: Basic understanding
OSM EDITOR & TOOLS
iD – JOSM – Go Map ! – Mapillary – MapRoulette – OSMCha – OverpassTurbo – Field Papers - WikiOSM: Proficient User
EDITING, PRESENTATION AND GRAPHICS
Microsoft Office Suite: Proficient User
Certificate: ECDL (2012)
Blender – Inkscape: Basic understanding

ACTIVITIES

PUBLICATIONS

- Ruzindana, E., Gaspari, F., Ntakobangize, E., Ponti, C., Biraghi, C. A., Kilsedar, C. E., Tadi, M., Muindi, Z., Agenga, P. & Mugeha, L. (2023). Open Data Addressing Challenges Associated with Informal Settlements in the Global South. In Open Mapping towards Sustainable Development Goals (pp. 13-27). Springer, Cham. https://doi.org/10.1007/978-3-031-05182-1_2
- Gaspari, F., Ioli, F., Barbieri, F., Belcore, E., and Pinto, L.: INTEGRATION OF UAV-LIDAR AND UAV-PHOTOGRAMMETRY FOR INFRASTRUCTURE MONITORING AND BRIDGE ASSESSMENT, Int. Arch. Photogramm. Remote Sens. Spatial Inf. Sci., XLIII-B2-2022, 995-1002, https://doi.org/10.5194/isprs-archives-XLIII-B2-2022-995-2022, 2022.
- Raviscioni, S., Rojas Bolanos, M. A., Gaspari, F., Ponti, C., Biraghi, C. A., and Tadi, M.: COLLABORATIVE MAPPING STRATEGY IN SUPPORT OF SLUM UPGRADING: THE CASE OF BOGOTA', Int. Arch. Photogramm. Remote Sens. Spatial Inf. Sci., XLIII-B4-2022, 273-280, https://doi.org/10.5194/isprs-archives-XLIII-B4-2022-273-2022, 2022
- Gaspari, F., Stucchi, L., Bratic, G., Jovanovic, D., Ponti, C., Biagi, L. G. A., and Brovelli, M. A.: INNOVATION IN TEACHING: THE POLIMAPPERS COLLABORATIVE AND HUMANITARIAN MAPPING COURSE AT POLITECNICO DI MILANO, Int. Arch. Photogramm. Remote Sens. Spatial Inf. Sci., XLVI-4/W2-2021, 63–69, https://doi.org/10.5194/isprs-archives-XLVI-4-W2-2021-63-2021, 2021.
- Migliaccio F., Pagliari D., Carrion D., Gaspari F., "Geostatistical and temporal analysis of Instagram data: The EXPO Milano 2015 case study," Proceedings ICTIC (Proceedings in Conference of Informatics and Management Sciences), DOI: 10.18638/ictic.2018.7.1.337, ISBN: 978-80-554-1436-2, ISSN: 1339-9144, vol. 7,issue 1,pp. 101 - 105, 2018

CONFERENCES

- ISPRS 2022 Nice (June 6-11, 2022)
  "Integration of UAV-LiDAR and UAV-photogrammetry for infrastructure monitoring and bridge assessment" – Poster session
- FOSS4G 2021 Buenos Aires (October 1st, 2021)
  "Innovation in teaching: the PoliMappers collaborative and humanitarian mapping course at Politecnico di Milano" - Presentation on Academic Track (Video)
- WikiMania 2021 (Aug 16th, 2021)
  "cOSMopolIT - Diversity and Inclusion within OpenStreetMap Italy" – Lightning Talk (Video)
- Global Humanitarian OpenStreetMap Summit 2020 (Dec 4th, 2020)
  "HOT Data Quality Internship: Results and perspectives of a collaborative project" – Lightning Talk (Video - Slides)

COURSES

- *Do-It-Yourself Geo Apps* (February 2022) - ESRI
- *Prova di completamento della Formazione online UAS Open A1-A3* (July 2021) - ENAC
- *Spatial Data Science: The New Frontier in Analytics with ArcGIS Pro* (December 2020) - ESRI
- *Python for Everybody Specialization* (July 2020) – Coursera
- *2020 IGARSS Online Summer School: Remote Sensing for Volcanoes* (July 2020) - IEEE
- *Introduction to programming with Matlab* (June 2020) - Coursera
- *Cartography MOOC with ArcGIS Pro* (May 2020) – ESRI
- *Social Media and Emergency Rapid Mapping* (2019) - Politecnico di Milano

NETWORKS AND MEMBERSHIPS

- *Charter Member* of the Open Source Geospatial Foundation (OSGeo) since 2022.
- *Faculty Advisor* and *co-founder* of PoliMappers, volunteer students' association based at Politecnico di Milano.
- *Member* of AVIS, Association of volunteered Italian blood donors, since 2013.
- *Active mapper member* of OpenStreetMap foundation, *Member of the Comms groups* of State of the Map and HOT Summit working groups. *Co-founder* of the diversity&inclusion group cOSMopolIT from the OSM Italian local chapter. Social media committee co-chair for FOSS4G 2022. Member of the local team of State of the Map 2022 Firenze.

DRIVING LICENCE

Italian driving licences AM, A1, B

HOBBIES

Cinema and tv series enthusiast. Piano player. Curious about new and innovative technologies for modern challenges. Swimmer and tennis player.

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