



# Federico Gianoli

**Date of birth:** 21/08/1988 | **Nationality:** Italian | **Gender:** Male | **Phone number:** (+39) 3407433504 (Mobile) |

**Email address:** [gianoli.federico@gmail.com](mailto:gianoli.federico@gmail.com) | **Address:** VIA CITOLO DA PERUGIA 7, 35138, PADOVA, Italy (Home)

## ● WORK EXPERIENCE

 **ARCADIA SIT - JOINT RESEARCH CENTRE EUROPEAN COMMISSION** – ISPRA, ITALY

**GIS DEVELOPER** – 04/01/2018 – CURRENT

- GIS Analyst
- WebGIS Developer
- GIS Developer

Main project: World Atlas of Desertification [www.wad.jrc.ec.eu](http://www.wad.jrc.ec.eu) and Global Surface Water. Developing the WebSite and the WebGIS Data catalog for the WAD, using Drupal, Leaflet, PostGIS and Geoserver. Creation of QGIS's Plugin and R and Python Tools to analyse indicators related to Land Degradation.

 **UNIVERSITY OF PADOVA - DEPARTMENT OF STATISTICAL SCIENCES** – PADOVA, ITALY

**LECTURER** – 01/09/2021 – CURRENT

*Course: "Multisource Data and Territorial Analysis" (MSc, 2nd year)*

**Academic Years: 2021–2025**

- Introductory course to Geographic Information Systems (GIS) with a focus on spatial data analysis using QGIS. The course provides students with foundational skills in managing, analyzing, and visualizing geospatial data from multiple sources for territorial analysis and decision-making.

 **UNIVERSITY OF PADOVA - MASTER IN GISCIENCE AND UAV** – PADOVA, ITALY

**LECTURER** – 01/03/2015 – CURRENT

Lecture:

- Introduction to GIS (16h course). 2015-2025
- Photogrammetry and UAV (16h course). 2016-2018
- WebGIS using GeoNode, Geoserver, Leaflet and Lizmap (16h course). 2016-2025
- Advances WebGIS (16h course) 2019-2025
- WebGIS Back-end and Front-end (32h course) 2020-2025

Workshops:

- Network Analysis (8h). 2017-2025
- Photogrammetry (8h). 2015-2019
- PostgreSQL/PostGIS (8h) 2020

 **HYDRONOVA SRL** – TREVISO, ITALY

**GIS ANALYST** – 01/01/2025 – CURRENT

**GIS Consultant – Flood Risk and Damage Assessment Tool (Rwanda)**

Led the development of a spatial analysis tool in QGIS to evaluate flood-related economic damages in the urban areas of **Musanze** and **Rubavu**, Rwanda. The project aimed to support disaster risk reduction strategies through the integration of geospatial data and automated scenario analysis. Key responsibilities included:

- Design and implementation of a QGIS-based tool to assess flood exposure and estimate potential economic losses under various flood scenarios.
- Development of **automated Python workflows** to streamline spatial data processing, scenario modeling, and output generation.
- Integration of land use, infrastructure, and socio-economic datasets to support detailed spatial analysis and risk mapping.

The tool contributed to strengthening urban resilience and informed planning for flood mitigation in high-risk Rwandan municipalities.

 **SGI STUDIO GALLI INGEGNERIA** – PADOVA, ITALY

## GIS ANALYST – 01/12/2022 – CURRENT

### **GIS Consultant for International Development and Urban Planning Projects**

Provided technical expertise in GIS and WebGIS for a range of urban planning, infrastructure, and risk assessment projects across Africa and the Middle East. Key roles and responsibilities included geospatial data analysis, field data collection system design, staff training, and implementation of spatial data infrastructures using open-source technologies such as QGIS, PostGIS, and Mergin Maps. Selected projects include:

- **Urban Planning for the City of Mosul, Iraq** Designed and implemented a comprehensive field mapping system to support the reconstruction and urban planning process of Mosul. Coordinated data collection infrastructure for 30 surveyors using Mergin Maps, PostGIS, and QGIS, enabling the mapping and census of over 200,000 buildings including household and commercial data. Developed quality control workflows and centralized spatial database architecture for streamlined data validation and integration.
- **Non-Revenue Water (NRW) Project – Gambia** (NAWEC, World Bank-funded) GIS expert for a water supply optimization project focused on leak detection and the establishment of District Metered Areas (DMAs). Responsible for the digitization and update of the national water supply network database and GIS training of NAWEC staff to support long-term infrastructure management and operational efficiency.
- **Non-Revenue Water (NRW) Project – Mozambique** Supported spatial data analysis and infrastructure mapping for a water utility NRW assessment project, with a focus on reducing system losses and improving asset management through GIS integration.
- **WebGIS Infrastructure for Rwanda** Developed a national-level WebGIS platform for the integration and visualization of road networks and landslide risk data. The system enables government stakeholders to monitor infrastructure vulnerability and prioritize mitigation strategies.
- **Urban Planning and WebGIS Development – Iraq and Africa** Delivered GIS and WebGIS solutions for urban development projects, including the design of spatial databases and web-based visualization tools to support planning, decision-making, and community engagement in post-conflict and high-risk environments.

## **COMUNE DI PADOVA – PADOVA, ITALY**

### GIS CONSULTANT – 01/05/2021 – 31/12/2023

GIS Consultant for the Trade and Productive Activities Sector (SECTOR)

## **DBAMBIENTE – PADOVA, ITALY**

### GIS ANALYST – 01/09/2022 – CURRENT

Supported the development and implementation of municipal acoustic zoning plans across various municipalities in the Veneto region. Responsibilities included:

- Creation of cartographic outputs and spatial analyses for acoustic zoning in compliance with regional and national regulations.
- Development of customized QGIS plugins and Python scripts to automate workflows and support the management of acoustic plans.
- Delivery of GIS training sessions for DbAmbiente technical staff, aimed at enhancing in-house capacity in spatial data management and the use of open-source tools for environmental planning.

This work contributed to improving the digital infrastructure and technical capacity of local administrations and consultants involved in acoustic and environmental planning.

## **UNESCO - IRAQ**

### WEBGIS DEVELOPER – 01/01/2021 – 03/03/2021

#### *Design and Implementation of a Spatial Data Infrastructure (SDI)*

Collaborated with UNESCO Iraq to design and deploy a Spatial Data Infrastructure (SDI) aimed at improving access to geospatial data related to hydrogeological resources in Iraq. Key responsibilities included:

- Development of a GeoNode-based WebGIS platform for the publication and sharing of spatial datasets, metadata, and technical documentation.
- Configuration of user roles, data upload workflows, and metadata standards to ensure interoperability and alignment with international best practices.
- Integration of datasets related to water resources, hydrogeological surveys, and environmental assessments to support planning, research, and decision-making by national stakeholders.

This SDI project contributed to enhancing institutional capacity and promoting transparency and collaboration among Iraqi ministries, researchers, and international organizations.

## **SGI-STUDIO GALLI ENGINEERING – PADOVA, ITALY**

## **GIS DEVELOPER** – 01/08/2019 – 31/08/2019

Developed a custom QGIS plugin as part of a World Bank-funded project to assess the **economic and social risk of flooding** in the N'Djili area of Kinshasa, Democratic Republic of Congo. The tool was designed to support local authorities and stakeholders in flood risk management and urban planning. Key contributions included:

- Design and implementation of a user-friendly QGIS plugin to integrate geospatial datasets and calculate flood exposure indicators.
- Integration of social vulnerability and economic asset data to produce composite flood risk assessments.
- Automation of risk mapping workflows to support evidence-based decision-making for mitigation strategies and infrastructure investment.

The plugin enabled reproducible and scalable flood risk analyses, supporting institutional efforts toward disaster preparedness and climate resilience.

## **IDEA SRL** – TREVISO, ITALY

### **GIS ANALYST** – 01/04/2019 – 20/05/2019

Main project:

Pedemontana Veneta - Network analysis to analyze traffic data in Veneto

## **REGIONE DEL VENETO**

### **GIS ANALYST AND CARTOGRAPHER** – 10/09/2017 – 31/12/2017

Main Projects:

*Regional Cycling Cartography*

Creation and updating of regional cycle path cartography

## **AIIG VENETO- ASSOCIAZIONE ITALIANA INSEGNANTI DI GEOGRAFIA** – PADOVA, ITALY

### **LECTURER AND PROJECT MANAGER** – 01/10/2015 – 04/2018

Main project:

"GPS, drones and landscape: the new geography that we were waiting for"

Created and facilitated a 6 hours laboratory for students (10-17years) about the new topics of geography. This project was totally funded by "Fondazione Cassa di Risparmio di Padova e Rovigo" in their "Attivamente" project framework. The laboratory involved 160 classes (around 4000 students) during 3 years, in the provinces of Padua and Rovigo. For this project I have coordinate a staff of 5 people.

## **SGI-STUDIO GALLI ENGINEERING** – PADOVA, ITALY

### **GIS ANALYST AND WEBGIS DEVELOPER** – 01/03/2017 – 31/12/2017

Main Projects:

*ASHRI 2*

A Spatial Data Infrastructure based on Geonode for UNESCO, in order to present the hydrogeological data of Iraq, collected by SGI Studio Galli Ingegneria in the framework of the projects ASHRI and GEOFIA.

## **MOBILITY IN CHAIN** – MILANO, ITALY

### **GIS ANALYST** – 01/09/2016 – 31/10/2016

- Production and analysis of GIS data
- Network analysis

Main project:

*Study of catchment areas for Bologna airport*

Study of mobility and accessibility of the major Italian airports to understand the current and future catchment areas.

## **4LAND NATURE DYNAMICS** – TRENTO, ITALY

### **GIS ANALYST** – 01/10/2014 – 31/12/2017

- Relief hiking paths with GPS and analysis of geographic data
- Analyzed geographic information and produced maps

Main Project:

*Cartography of Euganean Hills*

## **FTO REMOTEFly PADOVA** – PADOVA, ITALY

## **GIS ANALYST** – 01/09/2015 – 31/12/2016

Photogrammetry and GIS analysis  
UAV Pilot

## **ENOIA GROUP** – DUBAI, UNITED ARAB EMIRATES

### **GIS ANALYST** – 01/12/2015 – 31/12/2015

- Production and analysis of geographic data
- Production of thematic cartography

Main Projects:

*Shichahai urban plan (Beijing, China)*

Production and analysis of geographic data and thematic maps in GIS and Illustrator to support the urban renewal plan of Shichahai in the historic center of Beijing.

## **SGI-STUDIO GALLI ENGINEERING** – PADOVA, ITALY

### **GIS ANALYST** – 01/02/2013 – 31/03/2015

- Analyzed geographic information and produced project maps under tight deadlines.
- Organized geographical data into Geodatabase and wrote comprehensive reports.
- Made recommendations for territorial development and urban planning projects on an international team

Main Projects:

*Structural Plans for Basra, Maysan, and Thi Qar Governorates*

Worked with local administrations as a GIS and Rural Development Strategy Expert to deliver extensive recommendations to guide the development of the infrastructure, natural resources, socio-economic aspects, public services, public facilities, water supply and sewerage of the region. The phases of research and information collection were developed through extensive field surveys and data-gathering from national and local offices. All three projects were worth over 3 million dollars and involved an international team of over two dozen people.

*Master Plan for the Municipalities of Baijii, Sharquat, Dowr, and Tuz*

Developed a 25-year master plan for the Governorate of Salah al Din to create a more dynamic future for citizens including tourism, economic efficiency, social equity, and transportation with special attention to the region's natural environment and heritage.

*National Atlas of Marshes and Wetlands for CRIM in Iraq*

Worked as a GIS Expert for the Center for the Restoration of Iraqi Marshes and Wetlands to identify and describe the most important wetland sites for the purpose of conservation. Accurate site description and characterization was completed by office and field surveys, and by remote sensing analysis combined with historical data.

*Resource Plan for the Water Resources Ministry of Uganda*

Created detailed cartography for the future development of water supplies and sewage networks in the towns of Katwe, Koboko, and Rukungiri in the Northern and Southwest regions of Uganda.

## **GEOGRAPHICA SL** – SEVILLA, SPAIN

### **GIS ANALYST AND TRADE MANAGER** – 01/09/2012 – 31/12/2013

- Act as sales liaison between company and potential clients including Italian public administration officials.
- Evaluate public services infrastructure, created detailed cartography, and wrote comprehensive reports.
- Manage project database and digitized existing cartography.

## **FONDAZIONE FENICE ONLUS** – PADOVA, ITALY

### **GIS LECTURER AND PROJECT DEVELOPER** – 01/03/2008 – 31/12/2016

- Develop environmental and educational projects funded by the EU as well as regional and private donors.
- Create informational material and design tours used by over a dozen tour guides.
- Facilitate GIS training for high school students financed by an EU educational grant.
- Maintain grounds, preserve facilities, and complete routine building maintenance.



### **LECTURESHIPS** – 01/12/2013 – CURRENT

*FAUNALIA, Pontedera, Italy*

- Facilitated a three days training on GeoNode and Geoserver for "Protezione Civile del Veneto". December 2020

*ARPA PIEMONTE, Torino, Italy*

- Created and facilitated a training on Google Earth Engine. (20h course). June 2020

*UNIVERSITY OF PADOVA, Padova, Italy*

- GPS mobile apps to collect GIS data, for 30 students in October 2016
- WebGIS training for 25 students of Engineering Department in May 2016
- Facilitated a GIS training for 40 students of Natural Science Department in April 2016
- Created and facilitated two-day workshop on GIS and Biodiversity for 50+ students in the Department of Civil, Environmental and Architectural Engineering in December, 2013.

*Club Alpino Italiano (CAI) Padova*

- Facilitate GPS training in order to use a Smartphone in an alpine contest.

*AGENDA 21 CONSULTING*

- Facilitated three-day workshop on QGIS and Relational Database Management (PostgreSQL & PostGIS) for Agenda 21 employees in March, 2015.
- Created and facilitated three-day workshop on QGIS for Agenda 21 employees in April, 2014.
- Created and facilitated week-long course on QGIS and Geographical Information Systems for the Regional Park of Alta Valle Antrona in Villadossola, Italy in January, 2014.

*Tecna SOC. CONS. A.R.L*

- Created and facilitated two-week course on GIS and Renewable Energy for 30 unemployed students as part of a job-training program funded by the European Union in February, 2014.

**EDUCATION AND TRAINING**

---

01/09/2011 – 12/12/2012 Spain

**MASTER'S DEGREE IN MANAGEMENT AND ORGANIZATION OF REGIONAL AND LOCAL PROCESSES**

University of Sevilla

---

**Level in EQF** EQF level 7

01/09/2007 – 30/03/2011 Italy

**BACHELOR'S DEGREE IN GEOGRAPHY OF REGIONAL PROCESSES** University of Padova

---

**Level in EQF** EQF level 6

01/09/2022 – 19/09/2023 Padova, Italy

**MASTER IN GEOSTATISTICS FOR HUMAN, ANIMAL, AND ENVIRONMENTAL HEALTH** University of Padova

---

**Level in EQF** EQF level 8

**CONTINUING EDUCATION:**

---

Python 3-Day Course, Terrelogiche (Sept. 2017).GRASS 3-Day Course, University of Padua (Mar. 2015).GeoDatabase with QGIS 3-Day Course, University of Padua (Mar. 2015).GeoDatabase Open Source and PostgreSQL/PostGIS 2-Day Course, University of Padua (Nov. 2013).Remote Sensing with Envi 3-Day Course, University of Padua (Oct. 2013).WebGIS with QGIS 2-Day Course, Faunalia SRL Company (Sept. 2013).GeoDatabase and Data Management 1-Week Course, Geographica SL Company (Nov. 2012).

**LANGUAGE SKILLS**

---

Mother tongue(s): **ITALIAN**

Other language(s):

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken production	Spoken interaction	
<b>SPANISH</b>	C2	C2	C1	C1	C1
<b>ENGLISH</b>	B2	C1	B2	B2	B2

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

## ● SKILLS

---

GIS | QGIS | ArcGIS | Drupal | Python | SQL | Windows | Microsoft Office | HTML | Linux | CSS | Javascript | Git | Bootstrap | jQuery | Problem Solving | CMS tools like Drupal, EpiServer, Wordpress | Google Earth Engine

## ● DRIVING LICENCE

---

**Driving Licence:** A

**Driving Licence:** B

## ● COMMUNICATION AND INTERPERSONAL SKILLS

---

### Communication and interpersonal skills

---

- good communication skills gained through my experience as lecturer
- excellent predisposition to teamwork

## ● ORGANISATIONAL SKILLS

---

### Organisational skills

---

- good team-leading skills gained as boy scout chief

## ● PUBLICATIONS

---

2025

### [Water and Land in the Sahel. Mapping the Flow](#)

---

Drawing on over thirty years of research, this book investigates the intermingling of land and water in the Sahel, analysing landscapes defined by the ebb and flow of rainfall, flooding and population movements, as well as environmental, political and social crises.

Exploring both the seasonal flooding of rivers around the Nile, Chari-Logone, Niger and Senegal, as well as agricultural irrigation projects such as dams, canals and pumping stations, the book examines the different narratives related to water and land in the Sahel. It combines fieldwork research with remote sensing, big data and GIS mapping to outline the ever-changing interplay between land and water in the region. Beyond this, the book also reinterprets the colonial and post-colonial legacies of large-scale irrigation projects and the geopolitical interests which defined them.

Supported by an Open Access website with a WebGIS and further maps and analysis, this book is an essential read for policy makers and development practitioners in the region, as well as for researchers and scholars across the fields of geography, history, political science, sustainable development and African studies.

**Authors:** Andrea Pase, Angela Kronenburg García, Mariasole Pepa, Federico Gianoli, Marina Bertoncin, Carla Braga. | **Publisher:** Routledge