Sofia Pietrogrande

Research Fellow in Geomorphology
MSc in Earth Science

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Reaserch Fellowships

May 2024–October 2025 **Assegnista di Ricerca, tipo B, GEOS-03/A**,
Università degli Studi di Genova, Dipartimento di Scienze della Terra, dell'Ambiente e della Vita,
Geoheritage along the high rocky coast of Eastern Liguria: an emblematic case of interaction between natural hazard and human impact.
Tutor: P. Brandolini.

- Geomorphological survey and mapping of anthropical coastal cliffs.
- Analysis of anthropic features and their impact on the landscape.
- Integration of field data with historical and cartographic sources.

Main topics: GIS, remote sensing, geospatial analysis, databases.

Education

September 2022-February 2024 **Earth Sciences Master's degree (LM-74)**,
Università degli Studi di Milano, Dipartimento di Scienze della Terra "A. Desio",
Grade: 110/110 *cum laude*,
Thesis: *Geomorphological map of Val di Spluga (SO) and morphodynamic analysis of local rock glaciers from field and remote surveys.* Supervisor: R.S. Azzoni.

- Geomorphological mapping using field surveys and remote sensing techniques.
- Quaternary Geology.
- Core barrel sampling.
- GIS and geodatabase.

Main topics: Field survey, GIS, remote sensing, geospatial analysis, databases.

September 2017-June 2021 **Bachelor's degree in Geology (L-34)**,
Università degli Studi di Milano, Dipartimento di Scienze della Terra "A. Desio",
Grade: 100/110,
Thesis: *Creazione di una banca dati GIS da carte geologiche: il settore di Livigno (SO).* Supervisor: F. Berra.

- Geological mapping.
- GIS and geodatabase.

Main topics: GIS, remote sensing, databases.

Internships

February 2023 (150 hours) **Fondazione Montagna Sicura**, *Courmayeur (AO)*

- Updated the Cadastre of Valle d'Aosta glaciers and analyzed debris cover using a GIS platform, based on multispectral satellite imagery from ESA Sentinel-2.

Main topics: GIS, databases, remote sensing, glaciology

Publications

- **Pietrogrande S.**, Mandarino A., Azzoni R.S., Forti L., Faccini F., Pelfini M., Brandolini P., (submitted). Geomorphological mapping and anthropogenic signature along the rocky coast in the Tigullio Gulf (Eastern Liguria, Italy). Geografia Fisica e Dinamica Quaternaria and under review. Submitted to Geografia Fisica e Dinamica Quaternaria and under review. Manuscript including a geomorphological map
- **Pietrogrande S.**, Tantardini D., Pezzotta A., Zerboni A., Azzoni R.S., Tartarotti P., (submitted). Periglacial landforms and Late Quaternary deposits of Val Visogno and Val di Spluga valleys, Central Italian Alps. Submitted to Journal of Maps. Manuscript including a geomorphological map

Conference attendance

3-5 September 2024	Congresso Congiunto SGI–SIMP, Geology for a sustainable management of our Planet, Bari, Italy.
1-2 March 2024	X AIGeo Italian Young Geomorphologists' Day, III IAG International Young Geomorphologists' Meeting, Ca' Foscari University of Venice, Italy.
17-18 October 2024	AIGeo meeting, workshop and field trip, Lecco, Italy.

Conference contributions

September 2024	**Pietrogrande S.**, Brandolini P., Bollati I.M., Pelfini M., Faccini F., Ferrando A., Forti L., Azzoni R.S. GEOTRes - Geoheritage threats and resilience: mapping the impact of geomorphological and anthropic processes in sensitive morphoclimatic environments. Congresso Congiunto SGI–SIMP, Bari, Italy. Poster contribution.
September 2024	Brandolini P., Bollati I.M., Pelfini M., Faccini F., Ferrando A., Forti L., **Pietrogrande S.**, Azzoni R.S. Geoheritage along the high rocky coast of Eastern Liguria: an emblematic case of interaction between natural hazard and human impact. Congresso Congiunto SGI–SIMP, Bari, Italy. Poster contribution.
March 2024	**Pietrogrande S.**, Azzoni R.S., Tantardini D., Pezzotta A., Zerboni A. Geormorphological map and morphodynamic analysis of rock glaciers in Val di Spluga (SO) from field and remote sensing surveys. X AIGeo Italian Young Geomorphologists' Day, III IAG International Young Geomorphologists' Meeting, Venice, Italy. Poster contribution.
June 2023	**Pietrogrande S.**, Troilo F., Perret P. Valle d'Aosta's glacier cadastre and test of a method for automatic mapping glaciers from Sentinel-2 images. European Young Geomorphologists Meeting, Chamonix-Courmayeur, France. Oral contribution.

Participation to research projects

2024–2025	**GEOTRes – Geoheritage threating and resilience: mapping the impact of geomorphic and human processes in sensitive morpho-climatic environments**, *PRIN2022*, member of the research unit of the University of Genoa. Role: geomorphological survey and mapping and GIS analyst; P.I.: R.S. Azzoni, Dipartimento di Scienze della Terra "A.Desio", Università degli Studi di Milano.

2022–2024 **CARG Project – Geological and geomatic cartography: Quaternary geology and geomorphology survey for Sheet 038 Chiavenna**, *master thesist of the University of Milan. Role: geomorphological survey and mapping and GIS analyst*, P.I.: P. Tartarotti, Dipartimento di Scienze della Terra "A.Desio", Università degli Studi di Milano.

2024–ongoing **GuardaMI– citizen science**, *promotion of scientific knowledge and environmental education, and data collection to produce the Atlas of Breeding Birds in the city of Milan*, P.I.: D. Rubolini (Università degli Studi di Milano), M. Nova (Liceo Artistico di Brera), M. Deaddis (Liceo Artistico di Brera), in collaboration with: Università degli Studi di Milano, EBN Italia, Museo Civico di Storia Naturale di Milano., member of the educational unit and responsible for mapping and GIS analyst. Role: Educator and cartographer

Teaching, assistance, and public engagement

15, May 2025 Educational field trip to the Whale Sanctuary (Genova Gulf, Liguria) for high school classes. Education about relationship between large cetaceans and seabed geomorphology of the Ligurian Sea. GuardaMI project.

28, October 2024 Festival della Scienza 2024, Genova, Italy. Educational activities for primary and middle school students. Project leader: F. Berra, Università degli Studi di Milano.

11, October 2024 I segreti della Terra. Settimana del Pianeta Terra 2024, Lecco, Italy. Educational activities for primary and middle school students. Project leader: F. Berra, Università degli Studi di Milano.

November 2023 Educational field trip along the Martesana Canal (Milan) for primary school classes in the Trotter district, focused on sustainability and water resource use, with activities exploring local aquatic flora and fauna. GuardaMI project - Il Vespaio.

June 2023 (20h) Tutoring for undergraduate students, Campagne geologiche del I e II anno, corso di laurea Triennale in Scienze Geologiche, Università degli Studi di Milano. Fieldwork assistance during the Maniva campaign with a contribute in geomorphology, quaternary geology, and support in geological mapping activity.

Attended Post-Graduate Courses

Machine Learning — Machine learning for geosciences application, 15-18/05/2024,
PhD short course 15h, Università degli Studi di Milano. Prof. L. Brodsky

Remote Sensing — Glacier monitoring: from in situ measurements to remote sensing techniques, 9-11/01/2024,
PhD short course 15h, Università degli Studi di Milano. Dott. N. Dematteis

Micropedology — Laboratorio di micropedologia,
48h, Università degli Studi di Milano. Prof. L. Trombino

Spatial Analysis — Understanding geomorphological dynamics through point pattern modelling, 10-12/05/2023,
PhD short course 15h, Università degli Studi di Milano. Dr. F. Brandolini

Environmental Management — Percorsi professionali per la tutela dell'ambiente: rischi naturali, clima e usi sostenibili delle acque, 14/11/2022,
course 3:30h, Scuola per l'ambiente Lombardia, ARPA

Attended Summer Schools

Quaternary geology and Geomorphology	Climate Change in coastal areas, by International Centre for Climate Change Research and Studies, University of Venice Ca' Foscari and University of Venice IUAV, 12-17/06/2025, Venice (VE).
Remote Sensing	International Remote Sensing Summer School, by INGV, FMS, DSCG-UNICA and AIT, 17-21/06/2024, Courmayeur (AO).

Languages

Italian	Mother tongue
English	C1
French	B2

Software

DBMS	QGIS, ArcGIS: highly specialised
3D point cloud processing	Agisoft Metashape: advanced CloudCompare: advanced
Utilities	Office, Latex: advanced Adobe: advanced Spyder: intermediate
Remote sensing	Google Earth Engine: base

Licence

Driving	licence B
UAV	A1 - A3 Open sub category