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Francesco Lelli

Nationality: Italian **Date of birth:** 6 Jan 1996 **Gender:** Male

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Work: Campi 103 Department of Chemical and Geological Sciences - UNIMORE, 411 25 Modena (Italy)

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EDUCATION AND TRAINING

PHD Student

Department of Chemical and Geological Sciences, University of Modena and Reggio Emilia [1 Nov 2023 – Current]

Address: Via Campi 103, Modena - Italy, 41125 Modena (Italy) | **Field(s) of study:** Natural sciences, mathematics and statistics: • Earth sciences

PhD Course: "Models and Methods for Material and Environmental Sciences".
PhD project title: "Innovative Techniques for Landslide monitoring and assessment".

Main activities:
Landslide research and monitoring activity with innovative techniques and combined monitoring approaches. Use of advanced techniques including drone surveys, total stations, and satellite data analysis for Landslide hazard assessment. Development of methodologies to enhance the accuracy of landslide monitoring and prediction. Collaboration with academic supervisors, research teams and external partners to meet project objectives. Presentation of the main research findings in national and international conferences and peer-reviewed publications.

Master's degree in Geosciences, Georisks and Georesources

Department of Chemical and Geological Sciences, University of Modena and Reggio Emilia [8 Jun 2022]

City: Modena | **Country:** Italy | **Field(s) of study:** Natural sciences, mathematics and statistics: • Earth sciences | **Final grade:** 110/110 cum laude | **Thesis:** Geological-technical study and consolidation hypothesis on the Vallette di Ceci landslide (Trebbia River Valley, Piacenza Province)

Supervisors: Prof. A. Corsini; Dott. Geol. G. Truffelli

Bachelor's degree in Geological Sciences

Department of Chemical and Geological Sciences, University of Modena and Reggio Emilia [17 Apr 2019]

City: Modena | **Country:** Italy | **Field(s) of study:** Natural sciences, mathematics and statistics: • Earth sciences | **Final grade:** 101/110 | **Thesis:** Geotechnical characterisation of fine fracture fill material in rockfall-affected areas (Stone of Bismantova, Reggio Emilia Apennines

Supervisors: Prof. A. Corsini; Dott. F. Melotti

Italian High School Diploma

"A. Sorbelli" Scientific High School [Jul 2015]

City: Pavullo nel Frignano (Modena) | **Country:** Italy | **Final grade:** 75/100

WORK EXPERIENCE

Geologist

GEO GROUP S.r.l. [12 Sep 2023 – 31 Oct 2023]

City: Castelnuovo Rangone (Modena) | **Country:** Italy

Collaboration for project.
Activities: Technical support activities including on-site and office activities in geological, geophysical and environmental sectors.
Field: Applied Geology, Geophysics, Environmental Geology.

INTERNSHIPS

[12 Dec 2022 – 9 Jun 2023]
ARPAE EMILIA-ROMAGNA

Post-Graduate Internship at the Technical Directorate of the Bologna office - Cartography and GIS Section.
Activities: Satellite imagery and ortho-photogrammetric survey photointerpretation for land use change in the period 2021-2022; Emilia-Romagna land-use analysis and monitoring; data processing and production of associated cartography in a GIS environment (QGIS and ArcGIS); creation and updating of existing relevant-risk maps; territorial data management for WebGIS open databases, etc.

Field: Environmental Geology, Cartography

[29 Nov 2021 – 16 Feb 2022]
GEO GROUP S.r.l.

275 hours internship provided by the study program in Geosciences, Georisks and Georesources
Activities: On-site and office activities in geology, engineering and environment; commission tests, geognostic and geophysical surveys, geological and geotechnical models and reports, as well as detailed cartography.

Field: Applied Geology, Geophysics, Environmental Geology, Cartography.

[Dec 2018 – Jan 2019]
PIACENTINI COSTRUZIONI S.p.a.

150 hours internship provided by the study program in Geological Sciences (L-34)
Activities: Tender analysis, review of metric calculations and special tender specifications and technical and/or project documents required in tenders.

Field: Geotechnics, Civil Engineering

LANGUAGE SKILLS

Mother tongue(s): Italian

Other language(s):

English

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

SPOKEN PRODUCTION B2 **SPOKEN INTERACTION** B2

French

LISTENING A1 **READING** A1 **WRITING** A1

SPOKEN PRODUCTION A1 **SPOKEN INTERACTION** A1

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

DIGITAL SKILLS

Operating Systems

Windows (advanced user) / MacOS (advanced user) / Linux (basic user)

Productivity Tools and Basic Software

Microsoft Office Package (Word, Excel, Power Point) (advanced) / Google Suite (Gmail, Drive, Calendar, Docs, Sheets, Slide, etc.) (advanced) / Apple Suite (Pages, Numbers, Keynote) (intermediate)

Geographical Informational Systems (GIS)

QGIS (advanced) / ArcGIS Desktop/Pro (advanced)

Computer-aided design (CAD)

AutoCAD 2D-3D (advanced) / QCAD (intermediate)

Sector-Specific Software (Geology & Drone data analysis)

RocPro 3D (basic) / SSAP - Slope Stability Analysis Program (advanced) / Geostru SLOPE (intermediate) / DJI Terra (advanced) / Agisoft Metashape (advanced) / Cloud Compare (basic) / Open Drone Map and WebODM (advanced)

Programming

MatLab (basic) / Phyton (basic)

QUALIFICATION AND CERTIFICATES

[15 Jun 2023]

Environmental Technician

Certification of competence for Environmental Technician qualification, in accordance with the Regional System of Formalization and Certification of Competencies (SRFC). Attesting institution: Centro Formazione Emilia S.r.l.

[5 Dec 2022]

Geologist Professional Licence - Section A

Licence to practice as Geologist (Section A) obtained in session II, year 2022 at Alma Mater Studiorum - University of Bologna.

DRONE PILOT CERTIFICATES & EXPERIENCE

[18 Aug 2022]

UAS A1/A3 Open Category Pilot Certificate

Attesting institution: "Ente Nazionale per l'Aviazione Civile" (ENAC) - ITA.

[30 Aug 2022]

UAS A2 Open Subcategory Pilot Certificate

Attesting institution: "Rijksdienst voor het Wegverkeer" (RDW) - NL

[11 Aug 2023]

UAS Pilot Certificate for SPECIFIC CATEGORY for Standard Scenarios IT-STS 01 and IT-STS 02

Attesting institution: "DT ACADEMY" (Milan, Italy)

[4 Aug 2023]

TRUST Completion Certificate (The Recreational UAS Safety Test)

Attesting institution: "Federal Aviation Administration" (FAA) - USA

Experience

- **DJI Mini 3 Pro**
  40 operations
  15 flight hours in total

- **DJI Phantom 4 RTK**
  10 operations
  5 flight hours in total

- **DJI Matrice 350 RTK**
  25 operations
  30 flying hours in total

SCIENTIFIC ACTIVITY (TRAINING AND RESEARCH ACTIVITIES)

[9 Sep 2024 – 20 Sep 2024]

LARAM School 2024

International School on "LAndslide Risk Assessment and Mitigation" of the Geotechnical Engineering Group (GEG) of the University of Salerno. 2-week long school for PhD students and young doctors including formal lessons, tutorials and field training.

Link: https://www.laram.unisa.it/index

[1 Mar 2023 – 15 Jul 2023]

Occasional/professional partnership in the project "Caratterizzazione e monitoraggio di fenomeni franosi e versanti instabili (Characterization and monitoring of landslide phenomena and unstable slopes)"

Research Activity contract

Institution: Department of Chemical and Geological Sciences, University of Modena and Reggio Emilia

Position: Collaboration on geological-technical site surveys and GIS database development, site monitoring and remote sensing (aerial and proximal), slope stability analyses using specialized processing and software, technical reports and scientific publications.

Technical-Scientific Officer: Prof. A. Corsini

Co-operation between Regional Agency for Territorial Security, Civil Protection and University of Modena and Reggio Emilia, Department of Chemical and Geological Sciences

Specialistic support in technical-scientific activities for prevention, planning and management of hydrogeological risk-related emergencies (DGR 995 of 20 June 2022)

Research Activity collaboration

Institution: Department of Chemical and Geological Sciences, University of Modena and Reggio Emilia

Technical-Scientific Officer: Prof. A. Corsini

Research contract between Autostrada del Brennero S.p.A. and University of Modena and Reggio Emilia, Department of Chemical and Geological Sciences, for "Study of slope-highway interaction: identification, monitoring, management"

Research Activity collaboration

Institution: Department of Chemical and Geological Sciences, University of Modena and Reggio Emilia

Technical-Scientific Officer: Prof. A. Corsini; Prof. F. Ronchetti

Numerical Groundwater Modelling, Integrated Waste Treatment and Recovery Pole, Località Saliceti - Comune Di Vezzano Ligure (SP) - Step.2 of 2

Research Activity collaboration

(Free and voluntary participation in research activities, specifically geological and hydrogeological data collection and processing)

Institution: Department of Chemical and Geological Sciences, University of Modena and Reggio Emilia

Technical-Scientific Officer: Prof. F. Ronchetti

PUBLICATIONS

[2024]

RER2023: the landslide inventory dataset of the May 2023 Emilia-Romagna event Berti, M., Pizziolo, M., Scaroni, M., Generali, M., Critelli, V., Mulas, M., Tondo, M., **Lelli, F.**, Fabbiani, C., Ronchetti, F., Ciccarese, G., Dal Seno, N., Ioriatti, E., Rani, R., Zuccarini, A., Simonelli, T., and Corsini, A.: RER2023: the landslide inventory dataset of the May 2023 Emilia-Romagna event, Earth Syst. Sci. Data Discuss. [preprint], https://doi.org/10.5194/essd-2024-407, in review, 2024.

[2024]

Mobile Terrestrial LiDAR survey for rockfall risk management along a highway Simeoni L., Vitti A., Ferro E., Corsini A., Ronchetti F., **Lelli F.**, Costa C., Quattrociocchi D., Rover S., Beltrami A. (2024). Mobile Terrestrial LiDAR survey for rockfall risk management along a highway. In Procedia Structural Integrity, Volume 62, 2024, Pages 499-505, ISSN 2452-3216.

[2023]

GIS-Based Analysis of the Potential Effectiveness and Efficiency of Mobile Terrestrial LiDAR to Survey and Monitor Rockfall Areas Along 15 km of Highway E45. Ferro E., Cemin F., De Rosa L., Corsini A., Ronchetti F., **Lelli F.**, Vitti A. and Simeoni L. (2023). GIS-Based Analysis of the Potential Effectiveness and Efficiency of Mobile Terrestrial LiDAR to Survey and Monitor Rockfall Areas Along 15 km of Highway E45. In. A. Ferrari A., M., Rosone, M. Ziccarelli, G. Gottardi (Editors). Geotechnical Engineering in the Digital and Technological Innovation Era. Springer Series in Geomechanics and Geoengineering. eBook ISBN 978-3-031-34761-0 Print ISBN 978-3-031-34760-3, pp 194-201.

CONFERENCES AND SEMINARS

[16 Jun 2024 – 19 Jun 2024] XVIII CONVEGNO NAZIONALE GIT-SI, Malnisio - Montereale Valcellina (PN), Italy

Estrazione di informazioni geo-scientifiche di sintesi relative alle frane ed il loro impatto sul territorio durante l'evento meteorologico di maggio 2023 in Emilia-Romagna Critelli V., Fabbiani C., Tondo M., Mulas M., **Le lli F.**, Ronchetti F., Scaroni M., Generali M., Pizziolo M., Gozza G., Formicola P., Berti M., Ciccarese M., Dal Seno N., Ioriatti E., Rani R., Zuccarini A., Olivucci S., Simonelli T., Corsini A. (2024) Estrazione di informazioni geo-scientifiche di sintesi relative alle frane ed il loro impatto sul territorio durante l'evento meteorologico di maggio 2023 in Emilia-Romagna

[16 Jun 2024 – 19 Jun 2024] XVIII CONVEGNO NAZIONALE GIT-SI, Malnisio - Montereale Valcellina (PN), Italy
Combined approach for landslide monitoring: the new case study of the Baldiola landslide (Val Panaro, MO) L elli F., Critelli V., Tondo M., Fabbiani C., Corsini A. (2024) Combined approach for landslide monitoring: the new case study of the Baldiola landslide (Val Panaro, MO)

[16 Jun 2024 – 19 Jun 2024] XVIII CONVEGNO NAZIONALE GIT-SI, Malnisio - Montereale Valcellina (PN), Italy
Rilievi UAV (Uncrewed Aerial Vehicle), analisi SfM (Structure from Motion) e prove di laboratorio a supporto della caratterizzazione di sito di frane di scivolamento traslativo in roccia: casi di studio a Civitella di Romagna (Appennino Romagnolo) Fabbiani C., Critelli V., Lelli F., Tondo M., Corsini A. (2024) Rilievi UAV (Uncrewed Aerial Vehicle), analisi SfM (Structure from Motion) e prove di laboratorio a supporto della caratterizzazione di sito di frane di scivolamento traslativo in roccia: casi di studio a Civitella di Romagna (Appennino Romagnolo)

[14 Apr 2024 – 19 Apr 2024] EGU General Assembly 2024, Vienna, Austria
Rockfalls risk assessment along a E45 motorway section in South Tyrol (Italy) Lelli, F., De Rosa, L., Simeoni, L., Ronchetti, F., Critelli, V., and Corsini, A. (2024): Rockfalls risk assessment along a E45 motorway section in South Tyrol (Italy)

Link: https://doi.org/10.5194/egusphere-egu24-15711

[14 Apr 2024 – 19 Apr 2024] EGU General Assembly 2024, Vienna, Austria
Landslide inventory following the May 2023 Romagna hydrometeorological event (Northern Italian Apennines): the unavoidable requirement for laborious manual mapping Berti, M., Corsini, A., Pizziolo, M., Tommaso, S., Ciccarese, G., Critelli, V., Dal Seno, N., Fabbiani, C., Generali, M., Ioriatti, E., **Lelli, F.**, Mulas, M., Rani, R., Ronchetti, F., Scaroni, M., Tondo, M., and Zuccarini, A. (2024): Landslide inventory following the May 2023 Romagna hydrometeorological event (Northern Italian Apennines): the unavoidable requirement for laborious manual mapping

Link: https://doi.org/10.5194/egusphere-egu24-11385

[14 Apr 2024 – 19 Apr 2024] EGU General Assembly 2024, Vienna, Austria
Effects of rainfall Intensity-Duration on landslides' velocity variations: insights from long-term monitoring of case studies in Emilia-Romagna and South Tyrol (Italy) Tondo, M., Critelli, V., Mulas, M., **Lelli, F.**, Ciccarese, G., Truffelli, G., Mair, V., and Corsini, A. (2024): Effects of rainfall Intensity-Duration on landslides' velocity variations: insights from long-term monitoring of case studies in Emilia-Romagna and South Tyrol (Italy)

Link: https://doi.org/10.5194/egusphere-egu24-15258

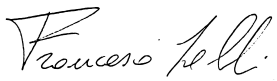
[22 Jun 2023 – 24 Jun 2023] XII Convegno Nazionale Giovani Ricercatori di Geologia Applicata, Urbino, Italy
Studio geologico-tecnico e ipotesi di consolidamento della frana di Vallette di Ceci (Val Trebbia, PC) Lelli F., Ciccarese G., Mulas M., Mereu G., Moretti A., Truffelli G., Corsini A. (2023) - Studio geologico-tecnico e ipotesi di consolidamento della frana di Vallette di Ceci (Val Trebbia, PC) – XII Convegno Nazionale Giovani Ricercatori di Geologia Applicata. Poster presentation

[22 Jun 2023 – 24 Jun 2023] XII Convegno Nazionale Giovani Ricercatori di Geologia Applicata, Urbino, Italy
Integration of site investigation and monitoring and open-access Lidar and InSAR data for the characterization of large- scale active deep-seated rock-slides: a case-study in Isarco Valley (South Tyrol, Italy) Critelli V., Ferro E., Corsini A., Simeoni L., **Lelli F.**, Tondo M., Ciccarese G., Mulas M., Ronchetti F. (2023). Integration of site investigation and monitoring and open-access Lidar and InSAR data for the characterization of large- scale active deep-seated rock-slides: a case-study in Isarco Valley (South Tyrol, Italy). Abstract.

[5 Sep 2022 – 7 Sep 2022] XVI Convegno Nazionale delle Sezioni GIT-SI, Fondi (LT), Italy

Valutazione dell'esposizione alla contaminazione di un campo pozzi mediante il Metodo Null-Space Monte Carlo Ronchetti F., Critelli V., **Lelli F.**, Brozzo G. (2022) – Valutazione dell'esposizione alla contaminazione di un campo pozzi mediante il Metodo Null-Space Monte Carlo.

The undersigned, Francesco Lelli, born on January 6, 1996, in Pavullo nel Frignano (MO) and residing at Via Umbria, No. 4, Pavullo nel Frignano (MO), aware that false statements are punishable under the Penal Code and special laws, hereby declares that all the information provided in this curriculum vitae is true.



Modena, 29 Oct 2024

Francesco Lelli