Curriculum Vitae - Riccardo Salvini, PhD
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Center of Geotechnologies
Via Vetri Vecchi 34, 52027 - San Giovanni Valdarno - Arezzo - Italy

ACTUAL POSITION

- Associate Professor - SDS: Scientific Disciplinary Sector GEO/05 – Engineering Geology.
- Member of the Didactics Committee of Degree Programs in Earth Sciences, University of Siena (since 2018).
- President of the Center of Geotechnologies (University of Siena, since 2020).
- Member of the “Pegaso” Regional Doctoral School in Earth Sciences (since 2020).
- Director of the 1st and 2nd level Professional Master in "Geomatics" (since 2017).
- Director of the 2nd level Professional Master in "Engineering Geology" (since 2017).
- Member of the Management Committee of the Arezzo Campus (CoGeAR) University of Siena (since 2022).

Riccardo Salvini is a geologist with expertise in the field of Remote Sensing, Digital Photogrammetry, GNSS positioning, Laser Scanning, geomechanics and GIS applied to geological and environmental research. Since 2001 he has been teaching on the aforementioned topics and he is involved in research in Italy (Apuan Alps, Northern Apennines, Western Alps), Brazil (Mato Grosso and Mato Grosso do Sul), Libya (Cyrenaica), Turkey (Central Anatolia), Egypt (North-Eastern Sahara Desert), United Arab Emirates (Abu Dhabi), and Ethiopia (Rift Valley). He was involved in national and international projects on rock mechanics, slope stability, multitemporal morphological and land use changes, and land subsidence monitoring.

EDUCATION

- 2018: National Scientific Habilitation for Full Professor, Sector 04 / A3 Engineering Geology, Physical Geography and Geomorphology, SDS GEO / 05 - Call D.D. 1532/2016. Validity from September 04, 2018 to September 04, 2027.
- 2004: Universitary researcher - SDS: Scientific Disciplinary Sector GEO/05 – Engineering Geology.
- 2001: PhD in Engineering Geology, “Land cover and soil loss in the Pantanal wetland (Brazil): Multitemporal study and predictive modelling”. University of Siena.
- 1998: Professional Master’s degree in Geoinformatics (Photogrammetry and Remote Sensing specialization - with distinction), “Land use-land cover change detection using remotely sensed images in Pantanal area (Brazil)”. International Institute of Aerospace Survey and Earth Science ITC, Enschede, the Netherlands.
- 1997: Qualification to practice as a Geologist.
- 1996: Master’s degree in Geological Sciences, “Geology of the North-Northwestern Frosini area, Italy”. University of Siena.

MAIN RESEARCH ACTIVITIES (last five years)

- February 2022 - February 2027: Research project between University of Siena - Center of Geotechnologies - and National Institute of Geophysics and Volcanology (INGV) for the development of research relating to prospecting geophysics, reconstruction of the crustal structure of the Italian area, and geomatics. **Scientific Manager**.
- October 2021 - October 2024: Research project between University of Siena - Center of Geotechnologies - and Local Sanitary Agency n.1. of Massa and Carrara for the development of research relating to estimating the in-situ stress state and numerical modeling aimed at slope stability assessment. **Scientific Manager**.

- June 2021- June 2024: Contract between University of Siena - Center of Geotechnologies - and ENEL Produzione SpA for the supervision of the geotechnical monitoring of the new hill located in the ex-mining area of S. Barbara, Cavriglia (Arezzo). **Scientific Manager**.
- April 2021 - June 2021: Contract between University of Siena - Center of Geotechnologies - and Imerys Talc Italy S.p.A. for the assessment of stability of a natural detrital slope over an active mining deposit (Rodoretto mine, Prali, Turin). **Scientific Manager**.
- December 2020 - December 2021: Contract between University of Siena - Center of Geotechnologies - and Tuscany Region - Integrated Regional Information System for the Government of the Territory for the processing of remotely sensed data. CIG: 8451815261. **Scientific Manager**.
- October 2020 - October 2021: Research project between University of Siena - Center of Geotechnologies - and National Institute of Geophysics and Volcanology (INGV) for geophysical and geomatic surveys in the extensional basins of the Central Apennines and in the Campi Flegrei area. **Scientific Manager**.
- June 2020 – Research Support Plan (UNISI), provision of the F-LAB fund. Project title: MISSION (Multidisciplinary Integration for SubSurface InvestigatiON): Integration of Ground Penetrating Radar on UAV for geological and archaeological investigations. **Scientific Manager**.
- November 2019 – November 2021: Contract between University of Siena - Center of Geotechnologies - and State Property Agency - Regional Directorate of Tuscany and Umbria, Technical Services - for monitoring and control of a hazardous slope located in Via del Paduletto (Vecchiano, Pisa). **Scientific Manager**.
- November 2019 – December 2020: Contract between University of Siena - Center of Geotechnologies – and the Department of Agricultural, Food and Agro-environmental Sciences of University of Pisa for multiparametric surveys with remote sensing tools aimed at identifying the origins of pests and parasitic attacks on crops. **Scientific Manager**.
- October 2018 – April 2019: Research project between University of Siena - Center of Geotechnologies – and the Municipality of Vecchiano (Pisa) for studying the hazardous slopes of the San Frediano quarry through stability analysis and simulation of the rockfall runout. **Scientific Manager**.
- April 2018 - March 2022: European Commission Horizon 2020. Project title: PHUSICOS "According to Nature" - solutions to reduce risk in mountain landscapes. SC5-2016-2017 call (Greening the Economy). **Responsible of geomatic and engineering-geological activities**.
- March 2018 - February 2020: Tuscany Region - Regional Operational Program (POR) of the European Social Fund (ESF) 2014-2020. Project title: Monitoring with optical fibers for the protection and conservation of cultural heritage - CHOF. **Scientific coordinator of 2 research grants.**
- April 2017 - December 2018: Tuscany Region - Regional Operational Program (POR) of the European Social Fund (FESR) 2014-2020. Project title: Real-time monitoring of quarry walls using optical fibers – CAVOTT. **Responsible of geomatic activities and monitoring.**

TEACHINGS CURRENTLY HELD

- Lecturer of "Photogeology" and "Geotechnics" for the B.Sc. degree in Geological Sciences, lecturer of "Rock Mechanics" and "Close range Sensing" for the M.Sc. degree in Geological Sciences and Technologies.
- Lecturer of "Remote Sensing", "Photogrammetry" and "Laser Scanning" for the Professional M.Sc. degree in Geomatics.
- Lecturer of "Rock slope stability" for the Professional M.Sc. degree in Engineering Geology.
- Supervisor and co-supervisor of 90 B.Sc. and M.Sc. thesis in Engineering Geology.
- Tutor and co-tutor of 20 PhD thesis.
- Tutor and co-tutor of 59 M.Sc. thesis.

RECENT PUBLICATIONS IN JOURNALS (last three years)

1. Perotti M., Iacoviello F., Marian N.M., Indelicato C., Capitani G., **Salvini R.**, Zampini M., Viti C. (2023): Flotation Sludges from Precious Metal Recovery Processes: From Waste to Secondary Raw Material in Ceramics. Recycling 2023, 8, 35. https://doi.org/10.3390/recycling8020035.
2. **Salvini R.**, Ermini A., De Lucia V., Beltramone L., Silvestri D., Rindinella A., Guido S., Marchetti D., Gullì D. (2022): Stress–Strain Investigation of the Rock Mass Based on Overcoring with CSIRO HI Cell Test and Numerical Modeling: A Case Study from an Italian Underground Marble Quarry. Geosciences. 2022; 12(12):441. DOI: 10.3390/geosciences12120441.

3. **Salvini R**., Vanneschi C., Lanciano C., Maseroli R. (2022): Ground Displacements Estimation through GNSS and Geometric Leveling: A Geological Interpretation of the 2016–2017 Seismic Sequence in Central Italy. Geosciences 2022, 12, 167. https://doi.org/10.3390/geosciences12040167.
4. Vanneschi C., Rindinella A., **Salvini R.** (2022). Hazard Assessment of Rocky Slopes: An Integrated Photogrammetry–GIS Approach Including Fracture Density and Probability of Failure Data. Remote Sens. 2022, 14, 1438. DOI: 10.3390/rs14061438.
5. Vanneschi C, Mastrorocco G, **Salvini R.** (2021): Assessment of a Rock Pillar Failure by Using Change Detection Analysis and FEM Modelling. ISPRS International Journal of Geo-Information. 2021, 10(11):774. DOI: 10.3390/ijgi10110774.
6. Lanciano C., Vanneschi C., Tufarolo E., **Salvini R.** (2021): Distributed Optical Fiber Sensors and Terrestrial Laser Scanner surveys for the monitoring of an underground marble quarry. Italian Journal of Engineering Geology and Environment, Proceedings of AIGA 2021 - VII National Congress, 23-24 September 2021 - LECCO (Italy), 117-125, DOI: 10.4408/IJEGE.2021-01.S-11.
7. Marian N.M., Giorgetti G., Magrini C., Capitani G.C., Galimberti L., Cavallo A., **Salvini R.**, Vanneschi C., Viti C. (2021): From hazardous asbestos containing wastes (ACW) to new secondary raw material through a new sustainable inertization process: A multimethodological mineralogical study. Journal of Hazardous Materials, 413(2021) 125419; https://doi.org/10.1016/j.jhazmat.2021.125419.
8. **Salvini R.**, Vanneschi C., Coggan J.S., Mastrorocco, G. (2020): Evaluation of the Use of UAV Photogrammetry for Rock Discontinuity Roughness Characterization. *Rock Mech Rock Eng*, 2020; https://doi.org/10.1007/s00603-020-02130-2.
9. Esposito G., Matano F., Sacchi M., **Salvini R.** (2020): Mechanisms and frequency-size statistics of failures characterizing a coastal cliff partially protected from the wave erosive action. *Rend. Fis. Acc. Lincei*, 2020); https://doi.org/10.1007/s12210-020-00902-0.
10. Lanciano C., **Salvini R**. (2020): Monitoring of Strain and Temperature in an Open Pit Using Brillouin Distributed Optical Fiber Sensors. *Sensors* 2020*, 20,* 1924; https://doi.org/10.3390/s20071924.
11. Giordan D., Adams M.S., Aicardi I., Alicandro M., Allasia P., Baldo M., De Berardinis P., Dominici D., Godone D., Hobbs P., Lechner V., Niedzielski T., Piras M., Rotilio M., **Salvini R.**, Segor V., Sotier B., Troilo F. (2020): The use of unmanned aerial vehicles (UAVs) for engineering geology applications. *Bull Eng Geol Environ*, 2020; https://doi.org/10.1007/s10064-020-01766-2.
12. Mancini F.; **Salvini R**. (2019): Applications of Photogrammetry for Environmental Research. *ISPRS Int. J. Geo-Inf.* 2019, *8*, 542; https://doi.org/10.3390/ijgi8120542.
13. Vanneschi C., Di Camillo M., Aiello E., Bonciani F., **Salvini R**. (2019): SfM-MVS Photogrammetry for Rockfall Analysis and Hazard Assessment Along the Ancient Roman Via Flaminia Road at the Furlo Gorge (Italy). ISPRS Int. J. Geo-Inf. 2019, 8(8), 325; https://doi.org/10.3390/ijgi8080325.
14. Tufarolo E., Vanneschi C., Casella M., **Salvini R**. (2019): Evaluation of camera positions and ground points quality in a GNSS-NRTK based UAV survey: preliminary results from a practical test in morphological very complex areas. Int. Arch. Photogramm. Remote Sens. Spatial Inf. Sci., XLII-2/W13, 637-641, https://doi.org/10.5194/isprs-archives-XLII-2-W13-637-2019.
15. Di Bartolo S., **Salvini R.** (2019): Multitemporal terrestrial laser scanning for marble extraction assessment in an underground quarry of the Apuan Alps (Italy). Sensors, 19(3), 450, DOI:10.3390/s19030450.
16. Francıonı M., Scıarra N., Ghırottı M., Borgattı L., **Salvını R.**, Calamıta F. (2019): The impact of new technologies in the engineering classification of rock masses. Italian Journal of Engineering Geology and Environment, Special Issue 1 (2019), 33-39. DOI: 10.4408/IJEGE.2019-01.S-06.

Siena, March 18, 2023

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