Curriculum

Nome Name:	Filomena
Cognome Surname:	DE SILVA

ORCID:	0000-0003-3509-4281
Scopus Author ID:	55760141900
WOS Author ID:	n.d.
Sito WEB WEB site:	n.d.

POSIZIONE PROFESSIONALE ATTUALE / CURRENT PROFESSIONAL POSITION:

Posizione attuale Current position:	In servizio
Qualifica Qualification:	Ricercatore a t.d. - t.pieno (art. 24 c.3-b L. 240/10)
Ateneo/Ente/Azienda University/Institution/Company:	Università degli Studi di Napoli Federico II
Nazione Ateneo/Ente/Azienda University/Institution/Company Country:	ITA
Anno inizio Start Year:	2024
Anno fine End Year:	n.d.

PRECEDENTI ESPERIENZE LAVORATIVE (ULTIMI 10 ANNI) / PREVIOUS WORK EXPERIENCE (LAST 10 YEARS):

LINGUE / LANGUAGES:

Lingua Language:	Inglese
Scrittura Writing:	C1
Comunicazione Comunication:	C1

AREA/SETTORE SCIENTIFICO-DISCIPLINARE / AREA/SECTOR SCIENTIFIC-DISCIPLINARY

Area scientifico-disciplinare Area scientific-disciplinary:	Ingegneria civile e Architettura
Area scientifico-disciplinare codice Area scientific-disciplinary code:	08
Settore scientifico-disciplinare codice Sector scientific-disciplinary code:	-Geotecnica
Settore scientifico-disciplinare codice Sector scientific-disciplinary code:	-CEAR-05/A

DESCRIZIONE DEI PRINCIPALI RISULTATI SCIENTIFICI CONSEGUITI NEGLI ULTIMI 10 ANNI (CON ANNESSO ELENCO DI MASSIMO 10 PUBBLICAZIONI) / DESCRIPTION OF THE MAIN SCIENTIFIC RESULTS ACHIEVED IN THE LAST 10 YEARS (WITH ATTACHED LIST OF MAXIMUM 10 PUBLICATIONS):

Descrizione Description:	*The research interests of Dr. de Silva are focused on the following three mainstreams: the effect of SFSI on the seismic performance of structures. She has studied the effects of SFSI numerically at building scale and at territorial scale, experimentally, analytically and from real case studies. She is now investigating the exploitation of soil hysteresis to improve the resilience of structures in the EU project PERSEFONE; the estimation of the seismic response of geotechnical systems in the frame of performance-based earthquake engineering. On such a topic she has produced demand hazard curves for foundations, fragility curves of buildings accounting for site effects and SFSI, fragility curves of tunnels, retaining walls and embankments, probabilistic safety assessment of cavities; the derivation of practice-oriented tools that allows the outcome of the research to be applied in the seismic assessment or decision-making process. She has produced approaches and web applications to include SFSI in the structural analyses, stability charts for cavities and she is producing a software to estimate the seismic resilience of road networks in the frame of the FAIR MOIRAE project. The above research activities are often shared with colleagues of different related disciplines, typically researchers in structural or transportation engineering, involve BSc, MSc and PhD students and are developed with stakeholders. About the above-mentioned*

	topics, she has been often reviewer of papers for international conferences and journals, such as Soil Dynamics, Bulletin of Earthquake Engineering, Tunnelling and Underground Space Technology, Computer and Geotechnics.

PUBBLICAZIONI / PUBLICATIONS:

Anno della pubblicazione Year of publication:	2025
Citazione Citation:	J1. de Silva F., Silvestri F. (forthcoming). Derivation, validation and web-application of dimensionless analytical solutions for period lengthening and damping ratio of soil-foundation-structure systems. Journal of geotechnical and geoenvironmental engineering. DOI: 10.1061/JGGEFK/GTENG-12927

Anno della pubblicazione Year of publication:	2025
Citazione Citation:	J2. de Silva F., Iodice C., Russo G. 2025. Time-dependent interaction coefficients to quantify the settlement of energy pile groups. Canadian Geotechnical Journal, 62:1-16 https://doi.org/10.1139/cgj-2024-0576

Anno della pubblicazione Year of publication:	2024
Citazione Citation:	J3. Zeolla E., de Silva F., Sica S., 2024. Towards a practice-oriented procedure to account for static and dynamic interaction among three adjacent foundations. Computers and Geotechnics 170, 106242.

Anno della pubblicazione Year of publication:	2024
Citazione Citation:	J4. Silvestri F., de Silva F., Piro A., Parisi F., 2024. Soil-structure interaction effects on out-of-plane seismic response and damage of masonry buildings with shallow foundations. Soil Dynamics and Earthquake Engineering 177, 108403

Anno della pubblicazione Year of publication:	2023
Citazione Citation:	J8. de Silva F., Amendola C., Pitilakis D., Silvestri F. 2023 Prediction of foundation stiffness and damping ratio under swaying and rocking motion. Soil Dynamics and Earthquake Engineering 166 (2023) 107735.

Anno della pubblicazione Year of publication:	2021
Citazione Citation:	J13. Amendola C., de Silva F., Vratsikidis A., Pitilakis D., Anastasiadis A., Silvestri F., 2021. Foundation impedance functions from full-scale

	soil-structure interaction tests. Soil Dynamics and Earthquake Engineering, 2021, 141, 106523 https://doi.org/10.1016/j.soildyn.2020.106523 SJR 2021: Q1 1.426; IF 2021: 3.718; n° of SCOPUS citation 3/2025:25

Anno della pubblicazione Year of publication:	2021
Citazione Citation:	J15. de Silva F., Fabozzi S., Nikitas N., Bilotta E., Fuentes R. 2021 Seismic vulnerability of circular tunnels in sand. Geotechnique Symposium in print 2019 – Linear infrastructure. 2021. 71(11),1056-1070 https://doi.org/10.1680/jgeot.19.SiP.024.

Anno della pubblicazione Year of publication:	2020
Citazione Citation:	J18. de Silva F. Influence of soil-structure interaction on the site-specific seismic demand of masonry towers. Soil Dynamic and Earthquake Engineering, 2020, 131, 106023. https://doi.org/10.1016/j.soildyn.2019.106023

DESCRIZIONE DEI PRINCIPALI PROGETTI DI RICERCA E PREMI CONSEGUITI NEGLI ULTIMI 10 ANNI (CON ANNESSO ELENCO DI MASSIMO 10 RISULTATI, INCLUDENDO, A TITOLO DI ESEMPIO, PRINCIPAL INVESTIGATOR O COORDINATORE LOCALE DI PROGETTI DI RICERCA COMPETITIVI NAZIONALI O INTERNAZIONALI, SIGNIFICATIVI PREMI CONSEGUITI PER LA PROPRIA ATTIVITÀ DI RICERCA)/ DESCRIPTION OF THE MAIN RESEARCH PROJECTS AND AWARDS AWARDED IN THE LAST 10 YEARS (WITH ATTACHED LIST OF MAXIMUM 10 ACHIEVEMENTS, INCLUDING, FOR EXAMPLE, PRINCIPAL INVESTIGATOR OR LOCAL COORDINATOR OF NATIONAL OR INTERNATIONAL COMPETITIVE RESEARCH PROJECTS, SIGNIFICANT AWARDS AWARDED FOR YOUR RESEARCH ACTIVITY):

Descrizione Description:	*2024-now Principal Investigator of international research project PERSEFONE: Permanent Effects In Rocking Shallow Or Embedded Foundations Occurring After Earthquakes funded by European Commission through ERIES (70 k€). Selected after peer-review. Activities: Execution and interpretation of forced-vibration tests on an ad-hoc constructed structural prototype on a shallow foundation. The key controlling parameters, as the foundation embedment and factor of safety, will be varied. A stratum of clean sand will be even placed below the foundation to check if it can be a useful remedial intervention to reduce settlement. The experimental data will be used to quantify and compare the foundation stiffness, damping, settlement, and rotation. 2024-now*

	Responsible (with Lijun Deng on the other side) of research agreement between the Department of Civil, Architectural and Environmental Engineering of the University of Naples Federico II and the University of Alberta. 2023-now Principal Investigator of research project of national interest FAIR MOIRAE: Framework to Assess Infrastructure Resilience and Management Operations In Roads After Earthquake (240k€, UNINA 150 k€) funded by the Italian Ministry of University. Selected after peer-review. 2024-now Team member of Marie Skłodowska-Curie actions - Staff Exchanges project GRID: Geotechnical Resilience through Intelligent Design, PI: Enrico Soranzo, Boku University (1400 k€, UNINA 170K€) funded by European Commission. Selected after peer-review. 2021 Responsible of research agreement between the Department of Civil, Architectural and Environmental Engineering of the University of Naples Federico II and National Autonomous Roads Company ANAS SpA 2018-2020 Team member and co-author of the proposal for the international research project SISIFO: Seismic Impedance for Soil-structure Interaction From On-site tests funded by European Comm. through ERIES. PI: Francesco Silvestri. Selected after peer-review. 2018 Team member of the research unit of the University of Naples Federico II in the project: Third-level seismic microzonation of the sites affected by the earthquake in Central Italy. The project was carried out within the framework of the research agreement (amount € 29016.10) stipulated between the Center for Seismic Microzonation and its Applications (https://www.centromicrozonazionesismica.it/it/) and the Department of Civil, Building and Environmental Engineering of the University of Naples Federico II. PIs: Francesco Silvestri and Anna d'Onofrio. 2018 Team member of international research projects: Shaking tunnel vision (400 k£) & Extended tunnel vision (100 k£) funded by Engineering and Physical Sciences Research Council. Grant reference: EP/N03435X/1. PI: Raul Fuentes. Selected after peer-review.

Descrizione Description:	2024-now Principal Investigator of international research project PERSEFONE: Permanent Effects In Rocking Shallow Or Embedded Foundations Occurring After Earthquakes funded by European Commission through ERIES (70 k€). Selected after peer-review. Activities: Execution and interpretation of forced-vibration tests on an ad-hoc constructed structural prototype on a shallow foundation. The key controlling parameters, as the foundation embedment and factor of safety, will be varied. A stratum of clean sand will be even placed below the foundation to check if it can be a useful remedial intervention to reduce settlement. The experimental data will be used to quantify and compare the foundation stiffness, damping, settlement, and rotation. 2024-now Responsible (with Lijun Deng on the other side) of research agreement between the Department of Civil, Architectural and Environmental Engineering of the University of Naples Federico II and the

	University of Alberta. Activities: Development of analytical tools to predict the seismic response of foundations. 2023-now Principal Investigator of research project of national interest FAIR MOIRAE: Framework to Assess Infrastructure Resilience and Management Operations In Roads After Earthquake (240k€, UNINA 150 k€) funded by the Italian Ministry of University. Selected after peer-review. Activities: Generation of fragility curves of the road embankments and retaining walls. The latter are combined with hazard scenario to estimate damage, functionality loss and restoration time through scales defined within the project. The outcomes will be applied to individuate the arches of the net partially or fully closed during the recovery. The resulting configuration of the network will be analyzed to calculate the road network resilience indicators. The methodological framework will be implemented in a tool to estimate the resilience of networks from hazard scenarios.

DESCRIZIONE DEI PRINCIPALI RISULTATI CONSEGUITI NEGLI ULTIMI 10 ANNI IN TERMINI DI SVILUPPO DI RETI E RELAZIONI SCIENTIFICHE NAZIONALI E INTERNAZIONALI (CON ANNESSO ELENCO DI MASSIMO 5 RISULTATI, INCLUDENDO, A TITOLO DI ESEMPIO, PARTECIPAZIONE O ORGANIZZAZIONE DI CONVEGNI NAZIONALI E INTERNAZIONALI; CONTRIBUTI A CONSORZI DI RICERCA) / DESCRIPTION OF THE MAIN RESULTS ACHIEVED IN THE LAST 10 YEARS IN TERMS OF DEVELOPMENT OF NATIONAL AND INTERNATIONAL SCIENTIFIC NETWORKS AND RELATIONS (WITH ATTACHED LIST OF MAXIMUM 5 RESULTS, INCLUDING, FOR EXAMPLE, PARTICIPATION OR ORGANIZATION OF NATIONAL AND INTERNATIONAL CONFERENCES; CONTRIBUTIONS TO RESEARCH CONSORTIA):

Descrizione Description:	

DESCRIZIONE DEI PRINCIPALI RISULTATI CONSEGUITI NEGLI ULTIMI 10 ANNI IN TERMINI DI SUPPORTO ALLA COMUNITÀ SCIENTIFICA (CON ANNESSO ELENCO DI MASSIMO 5 RISULTATI, INCLUDENDO, A TITOLO DI ESEMPIO, RESPONSABILITÀ DI DIREZIONE DI COMITATI EDITORIALI; INCARICHI DI VALUTAZIONE DELLA RICERCA PRESSO ISTITUZIONI NAZIONALI O INTERNAZIONALI; RESPONSABILITÀ ISTITUZIONALI ALL'INTERNO DELL'ISTITUZIONE DI APPARTENENZA O DI ALTRE ISTITUZIONI) / DESCRIPTION OF THE MAIN RESULTS ACHIEVED IN THE LAST 10 YEARS IN TERMS OF SUPPORT TO THE SCIENTIFIC COMMUNITY (WITH ATTACHED LIST OF MAXIMUM 5 RESULTS, INCLUDING, FOR

EXAMPLE, MANAGEMENT RESPONSIBILITIES OF EDITORIAL COMMITTEES; RESEARCH EVALUATION ROLES AT NATIONAL OR INTERNATIONAL INSTITUTIONS; INSTITUTIONAL RESPONSIBILITIES WITHIN THE INSTITUTION OF AFFILIATION OR OTHER INSTITUTIONS):

Descrizione Description:	

DESCRIZIONE DEI PRINCIPALI RISULTATI CONSEGUITI NEGLI ULTIMI 10 ANNI IN TERMINI VALORIZZAZIONE DELLE CONOSCENZE (CON ANNESSO ELENCO DI MASSIMO 3 RISULTATI, RELATIVI ALLA PARTECIPAZIONE DEL CANDIDATO ALLE ATTIVITÀ DI VALORIZZAZIONE DELLE CONOSCENZE) / DESCRIPTION OF THE MAIN RESULTS ACHIEVED IN THE LAST 10 YEARS IN TERMS OF KNOWLEDGE VALORIZATION (WITH ATTACHED LIST OF MAXIMUM 3 RESULTS, RELATING TO THE CANDIDATE'S PARTICIPATION IN KNOWLEDGE VALORIZATION ACTIVITIES):

Descrizione Description:	

Informazioni aggiornate alla data di candidatura 21-05-2025

Filomena DE SILVA

Il presente curriculum costituisce allegato e parte integrante dell'incarico sottoscritto