europass

Giovanni Menichini

WORK EXPERIENCE

[01/05/2016 – 30/10/2016] **Civil engineer**

Technical Studio Eng. Simone Scatizzi

City: Pistoia | **Country:** Italy

Structural verification and design for both new and existing constructions

[11/2016 – Current] **Civil engineer**

S2R-Seismosafe Spin-off of University of Florence http://www.s2r-sismosafe.it

Address: 161, Via Vittorio Emanuele II, 50134, Florence, Italy | **Business/sector:** Construction

Design and verification of constructions, measures and materials tests on existing masonry and RC construction and bridges

1. Structural and operational design of a steel industrial building located in the industrial area of Norcia (PG), (2017);
2. Analysis of the safety level of the Puleto and Tevere IV viaducts along the S.S. 3 bis E45 "Orte Ravenna" (2019);
3. Level 1 Inspection (according to Guidelines on Existing Bridges approved by the C.S.L.P. on 17/04/2020) on 33 bridges located in the Province of Arezzo (2020);
4. Analysis and verification in non-linear field for an expansion of an existing industrial building in Sant'Egidio del Monte Albino (SA) (2021);
5. Static and seismic vulnerability assessment of the Cormor 3 viaduct on the highway (A23) between Udine and Tarvisio (2022);
6. Calculation of the elastic acceleration response spectrum from an accelerogram aimed at the linear elastic dynamic analysis of storage silos (2023);
7. Numerical modelling of the deck for the construction of a new RC kerb to support the new safety barriers on the Opera Idraulica 10 of the A23 Palmanova - Tarvisio highway (2023);
8. Analysis of the existing built environment: structural monitoring through combined use of advanced technologies and literature methodologies (2024);

[01/11/2016 – 31/10/2019] **PhD student in Civil an Enviromental engineering**

University of Florence

City: Florence | **Country:** Italy

[22/11/2016 – 29/11/2016] **Civil protection volunteer**

DI.COMA.C Direzione Comando e controllo Protezione Civile

City: Rieti | **Country:** Italy

Archiving and classification of AeDES Forms for public and private buildings of Centre Italy zones hit by the earthquakes of 24/08/2016 and 26-30/10/2016;

[31/10/2019 – 30/10/2020] **University research assistant**

University of Florence

City: Florence | **Country:** Italy

Research scholarship on "*Analysis and reduction of seismic vulnerability of prefabricated industrial structures*"

[31/10/2020 – 29/11/2021] **University research assistant**

University of Florence

City: Florence | **Country:** Italy

Research fellowship on the topic: "*Development of fragility curves of existing precast reinforced concrete structures*."

The research focused on the analysis of precast reinforced concrete (RC) industrial buildings in Tuscany, particularly in the regions of Mugello and Casentino, examining their geometry, materials, and structural configurations. Data were gathered using the “CARTIS GRANDI LUCI” forms and extended by including additional details on structural components such as roofing systems, cladding, and connection devices, to refine the typological characterization. These enhanced datasets were systematically organized into a GIS database for advanced processing and analysis and fragility function calculation, to assess the seismic risk of RC precast buildings.

A noteworthy aspect of the work is the collaboration with the *Masonry Database* project, spearheaded by DICEA in partnership with the Seismic Sector of the Tuscany Region (Abaco delle Murature). This project compiles and evaluates experimental results on masonry panels, employing standardized data reprocessing methods to ensure consistency and comparability. The database serves as a critical tool for advancing the understanding of seismic vulnerability in traditional and historic buildings across Tuscany, offering valuable insights for risk mitigation strategies.

[2020 – 2021] **University research assistant**

University of Florence

City: Florence | **Country:** Italy

Member of the research group coordinated by Prof. Andrea Vignoli, contributing to the ReLUIS research project - WP2 "Inventario delle tipologie strutturali ed edilizie esistenti" .

Task 2.3.2 - Vulnerabilità delle tipologie in Muratura

The research work was structured as follows:

- Collection of typological-structural information (CarTIS) and organization of an AeDES database containing over 3,000 forms compiled following the seismic event that occurred in Lunigiana and Garfagnana (Tuscany Region) in June 2013;
- Classification of inspected buildings, evaluation of their seismic vulnerability, and derivation of parametric vulnerability and fragility curves using the macroscale seismic method;
- Processing of experimental damage data to determine the average global damage for the main building typologies identified in the studied area, based on varying shaking parameters (Macroseismic Intensity and PGA) derived from the ShakeMaps of the aforementioned earthquake;
- Calibration of vulnerability and fragility curves based on observed post-earthquake damage for masonry buildings belonging to the EMS-98 M1 typological class (rubble stone) and for low values of Macroseismic Intensity and PGA;
- Identification of empirical correlations for uninhabitable conditions, aimed at estimating the percentage of uninhabitable masonry buildings as a function of either the damage distribution across structures or the intensity of the seismic event.

The research work led to the development of the scientific paper: "*Calibration of vulnerability and fragility curves from moderate*

intensity Italian earthquake damage data", International Journal of Disaster Risk Reduction,https://doi.org/10.1016/j.ijdrr.2021.102676

Task 2.3.6 - Analisi di rischio a scala territoriale

The research conducted within this task aimed primarily at developing seismic risk maps for the municipalities of Mugello, located in the Florence area. Specifically, the work involved the creation of a series of graphical outputs addressing the following aspects:

- The spatial context and territorial boundaries of the municipalities under analysis;
- ISTAT statistical data regarding the built environment within the respective Census Sections;
- The classification of these municipalities into homogeneous zones based on the age of initial construction and construction/structural techniques;
- The spatial distribution of building typologies, materials, land uses, and construction periods within the defined sectors;
- The representation of damage scenarios and the generation of municipal maps depicting seismic vulnerability, hazard, exposure, and overall seismic risk.

The research work led to the development of the scientific papers:

- *"Seismic risk assessment: the case study of Barberino di Mugello municipality",* Procedia Structural Integrity https://doi.org/10.1016/j.prostr.2023.01.023
- *"The seismic risk assessment at the territorial scale of Mugello area in Italy"***,** WCEE Conference 2024, Milano

[14/01/2022 – 14/03/2022] **University research assistant**

University of Florence

City: Florence | **Country:** Italy

Research collaboration on the topic: "*Study of the static behaviour of built-up cold-formed steel profiles*"

[01/06/2022 – 01/02/2023] **University research assistant**

University of Florence

City: Florence | **Country:** Italy

Research scholarship on the topic: *"Testing and non-linear numerical modelling of structural and non-structural RC elements."*

[01/03/2023 – Current] **University research assistant**

University of Naples Federico II

City: Naples | **Country:** Italy

Research scholarship on the topic: "*Supporto alle unità di ricerca per le attività attuative del DM 578/2020 e sue successive modifiche*" - Accordo CSLLPP-ReLUIS _CUP G55F21001010001

Member of the research unit of DICEA-UNIFI coordinated by Prof. Maurizio Orlando, contributing to the ReLUIS research project - WP2 "Sperimentazione delle linee guida per la classificazione e gestione del rischio, la valutazione della sicurezza ed il monitoraggio dei ponti esistenti" and WP4 "Sperimentazione su Componenti Strutturali e/o Speciali"

WP2

The research contributed to the review and refinement of the process for assigning "attention classes" to existing bridges. The work was primarily focused on the A12 highway, specifically the section between Livorno and Rosignano.

In this context, I conducted visual inspections of the bridges and analyzed Level 0 and Level 1 evaluation forms for the structures. I also re-evaluated the process leading to Level 2 assessments, ending with the assignment of attention classes for the bridges according to the 2020 Italian Guidelines.

WP4 - Task 4.4. "*Selle Gerber*"

The research focused on dapped-end beams, beginning with a comprehensive bibliographic review to understand the variety of structural and reinforcement schemes used across the Italian territory. This included examining both cast-in-place and precast structures, with particular attention to those featuring conventional reinforcement and prestressing.

Subsequently, the reliability of computational algorithms of varying complexity was assessed for calculating the load-bearing capacity of dapped-end beams. This evaluation was supported by laboratory experiments, which I directly oversaw, involving dapped-end beams in their undamaged state.

Moreover, experimental tests and numerical simulations were conducted to explore various intervention techniques aimed at enhancing the load-bearing capacity of the dapped-ends. These investigations provided valuable insights into both the structural behaviour and potential reinforcement strategies for these critical elements

[31/10/2017 – Current] **University teaching assistant**

University of Florence

City: Florence | **Country:** Italy

Support to teaching (revision of student work exercises, supervision of dissertations and exams) for the classes "*Ingegneria Sismica*" and "*Progetto di strutture*".

EDUCATION AND TRAINING

[08/1996 – 07/2001] **High School (72/100)**

Liceo scientifico A. di Savoia

City: Pistoia | **Country:** Italy | | **Level in EQF:** EQF level 4

Scientific subjects (Math/Science based schools)

[08/2001 – 07/2010] **Bachelor's Degree in Civil Engineering (99/110)**

University of Florence - School of Engineering

City: Firenze | **Country:** Italy | | **Level in EQF:** EQF level 6

Thesis title: Seismic design and verification of multi-storey RC building

[08/2010 – 04/2016] **Master degree in Civil Engineering (108/110)**

University of Florence - School of Engineering

City: Florence | **Country:** Italy | | **Level in EQF:** EQF level 7

Thesis title: The role of roof joints in seismic response of sigle-storey precast RC buildings

[01/11/2016 – 08/12/2020] **International doctorate in Civil and environmental engineering (Doctorate in cotutelle with the University of Ljubljana) (Mark: Excellent)**

University of Florence - School of Engineering

Address: Via Santa Marta, 50139, Florence, Italy | **Field(s) of study:** Engineering, manufacturing and construction | **Level in EQF:** EQF level 8 | **Thesis:** Seismic response of vertical concrete façade systems in reinforced concrete prefabricated buildings

Personal competence certificate in accordance with UNI PdR56:2019

Tiquadro Cert srl www.tiquadrocert.org

Address: Zona Ind. C.da Cucullo , 66026, Ortona, Italy |

Certification of Technical Staff in the field of non-destructive testing in the area of Civil Engineering - UNI PdR56:2019

Method: Visual survey and inspection of civil structures and infrastructures (VT) Level: 2

[2020 – 2021] **University research assistant**

Università degli Studi di Firenze

City: Florence | **Country:** Italy |

ReLUIS research project: "WP2 - inventario delle tipologie strutturali ed edilizie esistenti", Task 2.3.2 - Vulnerabilità delle tipologie in Muratura.

[24/05/2023]

Personal competence cetificate according to clause 37 subsection 1 and 2 of D. Lgs. 81/2008

Università degli Studi di Firenze

City: Florence | **Country:** Italy |

"*corso di formazione generale per i lavoratori in materia di sicurezza e salute sul lavoro*"

[27/09/2023]

Personal competence cetificate according to clause 37, 107 and 115 of D.lgs. 81/08

SA Sicurezza www.sasicurezza.it

City: Monterotondo (RM) | **Country:** Italy |

"Corso per addetti ai lavori in quota mediante utilizzo di DPI di terza categoria con procedure di soccorso e recupero dell'infortunato"

[06/09/2023]

Personal competence cetificate according to D.lgs. 277/2011

O.P.N. EFEI ITALIA https://opnefeitalia.org/

City: Rosignano Marittimo (LI) | **Country:** Italy |

"Corso di formazione ed addestramento preposti durata 8 ore lavori in ambienti sospetti di inquinamento o confinati"

[11/06/2024]

Certificate for completing training on compiling AEDES forms (Assessment of Safety and Damage in Seismic Emergencies)

Struttura Tecnica Nazionale STN -Protezione Civile

City: Firenze | **Country:** Italy |

Frequenza e superamento dell'esame finale per il Corso di formazione di Livello 1 e Livello 2 per: "VALUTAZIONE DELL'IMPATTO, CENSIMENTO DEI DANNI E RILIEVO AGIBILITÀ POST SISMA"

LANGUAGE SKILLS

Mother tongue(s): Italian

Other language(s):

English

LISTENING B1 **READING** B1 **WRITING** B1

SPOKEN PRODUCTION B1 **SPOKEN INTERACTION** B1

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

DIGITAL SKILLS

My Digital Skills

OpenSEES | CSI SAP2000 | Seismostruct | Microsoft Office | AutoCAD 2D e 3D | MATLAB | DIANA FEA

PUBLICATIONS

[2017]

Influence of roof connections on the seismic response of single-storey precasted buildings.

Reference: G. Menichini, E. Del Monte, G. Bartoli, S. Boschi, A. Vignoli.

XVII ANIDIS CONFERENCE, Pistoia

[2018] **Modeling the Seismic Response of Vertical Concrete Cladding Panels.**

Reference: Conference on Italian Concrete Days, 96–109. Springer.

[2019] **An innovative cladding panel connection for RC precast buildings.**

Reference: Bulletin of Earthquake Engineering, 17(2), 845–865.

[2020] **Seismic response of vertical concrete façade systems in reinforced concrete prefabricated buildings**

Reference: PhD. Thesis

[2020] **Out-of-plane capacity of cladding panel-to-structure connections in one-story R/C precast structures.**

Reference: Bulletin of Earthquake Engineering.

[2021] **Calibration of vulnerability and fragility curves from moderate intensity Italian earthquake damage data**

Reference: International Journal of Disaster Risk Reduction

[2022] **Analytical fragility curves proposal for Tuscan masonry building typologies**

Reference: Procedia Structural Integrity

[2022] **Seismic risk assessment: the case study of Barberino di Mugello municipality**

Reference: Procedia Structural Integrity

XIX ANIDIS Conference, Torino.

[2022] **On the verification of discontinuity regions in existing RC structural elements using Strut and Tie models**

Reference: G. Menichini, F. Gusella, M. Orlando.

Convegno ICC AICAP, Napoli.

[2022] **Load bearing capacity of an interior span of RC multi span MRFs**

Reference: F. Gusella, G. Menichini, M. Orlando.

Convegno ICC AICAP, Napoli

[2024] **Methods for evaluating the ultimate capacity of existing RC half-joints**

Reference: Engineering Structures Volume 299, 117087

[2024] **RC dapped-end beams with various reinforcement layouts: An experimental investigation**

Reference: Engineering Structures Volume 332, 119043

[2024] **Diagnostics and monitoring: operations to improve the verification of reinforced concrete viaducts**

Reference: G. Menichini, F. Nicchi, G. Lazzerini, A. Borghini, E. Del Monte

Convegno ICC AICAP 2024, Firenze

[2024] **Experimental campaign on dapped-end beams with different reinforcement layouts**

Reference: G. Menichini, F. Gusella, S.G. Morano, M. Orlando

Convegno ICC AICAP 2024, Firenze

[2024] **FEM modelling of dapped-end beams reinforced with post-installed bars**

Reference: B. Calcavecchia, G. Menichini, S. G. Morano, M. Orlando, P. Cantoni, B. Belletti

Convegno ICC AICAP 2024, Firenze

[2024] **Territorial seismic vulnerability analysis of precast reinforced concrete buildings within Mugello industrial districts**

Reference: G. Menichini, N. Banti, E. Del Monte, F. Bazzocchi, M.Orlando

Convegno ICC AICAP 2024, Firenze

[2024] **Out-of-plane strengthening of infill walls and global seismic response of rc-framed structures**

Reference: A. Batignani, G. Menichini, M. Orlando, L. Salvatori, P. Spinelli

WCEE Conference 2024, Milano

[2024] **Seismic performance of standard and new cladding-to-structure connections in rc precast structures**

Reference: G. Menichini, E. Del Monte, M. Orlando

WCEE Conference 2024, Milano

[2024] **The seismic risk assessment at the territorial scale of Mugello area in Italy**

Reference: G. Menichini, E. Del Monte. M. Orlando

WCEE Conference 2024, Milano

COMMUNICATION AND INTERPERSONAL SKILLS

Communication and interpersonal skills

Good communication skills acquired during my course of study. Ability to work both alone and in group.

JOB-RELATED SKILLS

Job-related skills

Knowledge in the fields of civil engineering and in particular in structural engineering and numerical modelling, with attention to the project and consolidation of RC and steel structures in accordance with current technical regulations

ACKNOWLEDGMENT, PRESENCE

[17/09/2017 – 21/09/2017] **Scientific secretary and organization secretary of XVII ANIDIS Conference, Pistoia 17-21 Settembre 2017;**

[19/06/2024 – 21/06/2024] **Scientific secretary and organization secretary of ICC Conference, Florence 19-21 Giugno 2024;**

DRIVING LICENCE

[redacted]

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Firma

[redacted]