

Grigor Angjeliu

Department of Civil and Environmental
Engineering, Politecnico di Milano
Piazza Leonardo da Vinci 20133, Milan, Italy.

Email: grigor.angjeliu@polimi.it

ORCID iD: orcid.org/0000-0001-5300-3932



Education

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| 2014 – 2018 | Ph.D. in Structural, Seismic and Geotechnical Engineering. Focus on the safety of historic buildings. Department of Civil and Environmental Engineering, Politecnico di Milano, Italy (<i>with Distinction</i>) |
| Sep 2016 – Dec 2016 | Visiting Scholar, Department of Architectural Engineering, Pennsylvania State University, USA |
| Nov 2013 – Jan 2014 | Visiting Scholar, Department of Civil and Environmental Engineering, Politecnico di Milano, Italy |
| 2010 – 2012 | M.Sc., Structural Engineering, Polytechnic University of Tirana, Albania |
| 2007 – 2010 | B.Sc., Civil Engineering, Polytechnic University of Tirana, Albania |

Work Experience

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| Jan 2018 – | Research Associate, Department of Civil and Environmental Engineering, Politecnico di Milano, Italy |
| Nov 2014 – Jan 2018 | Research Assistant, Department of Civil and Environmental Engineering, Politecnico di Milano, Italy |
| Jan 2013 – Nov 2014 | Preservation Engineer, Institute of Cultural Monuments, Tirana, Albania |

Teaching Experience

- Sep 2019 – Adjunct Professor of Structural Design, Module within the course of Architectural Design Studio for Complex Construction 2, School of Architecture, Urban Planning and Construction Engineering, Politecnico di Milano
- Sep 2018 – Jun 2019 Adjunct Professor, Building Technology Studio, Module of Structural Design, School of Architecture, Urban Planning and Construction Engineering, Politecnico di Milano
- Oct 2019 – Feb 2020 Teaching Assistant, Preservation Studio, School of Architecture, Urban Planning and Construction Engineering, Politecnico di Milano
- Oct 2017 – Jan 2020 Teaching Assistant, Matlab Programming, Department of Mathematics, Politecnico di Milano
- Sept 2016 – Teaching Assistant, Structural Design, School of Architecture, Urban Planning and Construction Engineering, Politecnico di Milano
- Oct 2016 – Mar 2017 Teaching Assistant, Statics of Structures, School of Architecture, Urban Planning and Construction Engineering, Politecnico di Milano

Honours and Awards

- 2018 Research Fellowship Award from Politecnico di Milano, Department of Civil and Environmental Engineering.
- 2017 Winner of the “Association for Preservation Technology Scholarship”, with the study “A parametric model for ribbed masonry vaults and the development of structural simulations” presented at the conference “Capitalizing on Heritage”, Ottawa, Canada.
- 2014 Research Grant for PhD Studies at Politecnico di Milano on Architectural Built Heritage by Italian Ministry of Educations and science, 36 months duration.
- 2013 Winner of a 3 months scholarship, by Italian Embassy in Tirana, Albania, with the research project “Diagnosis and intervention on historical masonry buildings” Politecnico di Milano.

Invited expert

- [1] Technical Review - Invited expert for impact assessment of a construction development project on a World Heritage Property Outstanding Universal Value, integrity and

authenticity from ICOMOS (International Council on Monuments and Sites), January, 2020.

- [2] Invited lecturer at the Regional Training Course on Emergency Response to Cultural Heritage organized by the Regional Centre for Conservation and Restoration of South East Europe, Institute of Cultural Monuments in cooperation with World Heritage Centre of UNESCO, in Gjirokastra (Albania), July, 2018.

Invited Presentations

- [1] Presentation of the Emerging Professionals initiative: Progress Update for the European region at the Annual General Assembly of ICOMOS (International Council on Monuments and Sites), Marrakesh, Morocco, October, 2019.
- [2] Invited Lecturer at the Annual Meeting of ESACH (European Student Association on Cultural Heritage): Participation and integration of emerging professionals within ICOMOS: the Emerging Professionals Working Group - EPWG, Genoa, Italy, October, 2019.
- [3] Invited expert at the International Council of Cultural Heritage: Continuity of Generations in ICOMOS – the Emerging Professionals Initiative, Moscow, Russia, September, 2019.
- [4] Presentation of the Emerging Professionals initiative at the ICOMOS (International Council on Monuments and Sites) Europe Group Meeting in Lisbon, Portugal, June, 2019.
- [5] A parametric model for ribbed masonry vaults and the development of structural simulations. Capitalizing on Heritage, Ottawa, Canada, Association for Preservation Technology International APTI, October, 2017
- [6] Structural assessment of complex phenomena in historic masonry structures. The Pennsylvania State University, Department of Architectural Engineering, State College, PA, USA. (Invited from Prof. Thomas Boothby), December 2016

Journal Reviewer

- [1] Structural Engineering and Mechanics, Publisher: Korea Advanced Institute of Science and Technology, South Korea, ISSN: 1225-4568(Print), ISSN: 1598-6217(Online).

Coordination of International Networks

- APT- Technical Committee on Modern Heritage *Co-Chair*: 2020 – (<https://www.apti.org/modern-heritage>)
- ICOMOS - Regional Coordinator for Europe of the Emerging Professionals Working Group (EPWG): 2018 – (<https://www.icomos.org/en/what-we-do/disseminating-knowledge/icomos-working-groups?start=4>)

Professional Memberships

- RILEM (International Union of Laboratories and Experts in Construction Materials, Systems and Structures): 2020 –
- APTI (Association for Preservation Technology International, Illinois, USA): 2017 –
- ICOM (International Council on Museums, Paris, France): 2017 –
- ICOMOS (International Council on Monuments and Sites, Paris, France): 2013 –

International Scientific and Technical Committees

- ICOMOS - Member of the International Scientific Committee on the Analysis and Restoration of Structures of Architectural Heritage (ISCARSAH) 2019 -
- APTI - Member of the Technical Committee on Modern Heritage 2017 -
- ICOMOS - Member of the Emerging Professionals Working Group (EPWG) 2017 –

Language skills

English (Fluent), Italian (Fluent), Albanian (Mother tongue)

Computer Knowledge

Excellent knowledge of computer software and hardware.

- *Operating Systems*: Ms-Dos, Ms-Windows (Xp, 7, 8, 10), Ubuntu.
- *General*: Ms-Office (Word, Excel, Access, Power Point, Publisher),
- *Graphics editor*: Adobe Package (Photoshop, Illustrator, InDesign, Acrobat, etc.)
- *Design and drafting*: Autodesk AutoCAD 2D, 3D, AutoCAD Structural Detailing, Autodesk Revit, Dynamo Studio (including programming in Iron Python 2.7), Autodesk ReCap, MeshLab, etc.
- *Structural Analysis*: CSi Sap2000, Etabs, SAFE, Simulia Abaqus, Midas Gen.
- *Programming*: Mathworks Matlab, Mathcad, IronPython, Python, VBA (Visual Basic for Applications).

Selected Research Projects

- [1] Collaborator in the research project SLAB STRESS - SLAB (SStructural Response for Seismic European Design). SERA - Seismology and Earthquake Engineering Research Infrastructure Alliance for Europe, H2020-EU.1.4.1.2. Integrating and Opening Existing National and Regional Research Infrastructures of European Interest,

INFRAIA-01-2016-2017 - Integrating Activities for Advanced Communities. 2018 - 2020. (<https://sera-ta.eucentre.it/index.php/sera-ta-project-02/>)

- [2] Digital Twin solutions for Historical Buildings. The project proposes the application of Digital Twin technology for understanding the structural integrity of historical buildings. The project is being developed at Politecnico di Milano in close collaboration with Microsoft and its partners. Current Status: Preparation of the PoC. 2019 -
- [3] Automatic geometrical and structural modelling based on LiDAR measurement in collaboration with Ouster Inc. (California, USA). 2019.
(<http://www.dica.polimi.it/it/inevidenza/news/applicationoftheousteros-1-6>)
- [4] Smart Pools - SmartPools - Design of a modular system for pools. Part of the finalist phase of Switch2Product (entrepreneurship competition at Politecnico di Milano), 2019.
- [5] Collaborator in the Agreement between Veneranda Fabbrica del Duomo di Milano – Politecnico di Milano. Structural assessment of Milan Cathedral, based on experimental measurements and observations. The objectives of the study are to develop a structural model of Milan Cathedral in order to study the response of the complex structural system; understand the causes of the present and past structural damage. In collaboration with Prof. Dario Coronelli, Prof. Giuliana Cardani. 2016 – 2018.
- [6] Part of the design and supervision team of the restoration works at Mother Theresa Square (Tirana, Albania), as part of the Institute of Cultural Monuments. The project was funded by the Albanian Government in honour of the visit of Pope Francis, 2014.

Publications

Journals

- [1] Cardani G., **Angjeliu, G.**: Integrated Use of Measurements for the Structural Diagnosis in Historical Vaulted Buildings. *Sensors* 2020, 20, 4290. doi: <https://doi.org/10.3390/s20154290>
- [2] **Angjeliu, G.**, Coronelli, D. Cardani, G.: Development of the simulation model for Digital Twin applications in historical masonry buildings: the integration between numerical and experimental reality. *Computers & Structures*, 2020, 238, 106282. doi: <https://doi.org/10.1016/j.compstruc.2020.106282>
- [3] **Angjeliu, G.**, Cardani G., Coronelli D. and Boothby, TE.: Structural assessment of iron tie rods based on numerical and experimental observations in Milan Cathedral. *Engineering Structures*. 2019. <https://doi.org/10.1016/j.engstruct.2019.109690>
- [4] Shehu, R., **Angjeliu, G.**, Bilgin, H.: A Simple Approach for the Design of Ductile Earthquake-Resisting Frame Structures Counting for P-Delta Effect. *Buildings* 2019, 9, 216. <https://doi.org/10.3390/buildings9100216>
- [5] **Angjeliu, G.**, Cardani G. and Coronelli D.: A parametric model for ribbed masonry vaults. *Automation in Construction*, 2019. <https://doi.org/10.1016/j.autcon.2019.03.006>

Conferences

- [1] **Angjeliu G.**, Cardani, G., and Coronelli, D.: Assessment of structural damage and evolution in time in historical constructions using numerical models: the case of the church of Saint Bassiano in Pizzighettone, Cremona. Proceedings of the SAHC Symposium, Barcelona, 2020. [*paper accepted; online publication postponed due to covid-19 pandemic*].
- [2] **Angjeliu G.**, Cardani G.: Investigation of the structural response through simple numerical models derived automatically from LiDAR scanning: the case of masonry vaults in historical buildings. Proceedings of the IB2MAC Symposium, Krakow, 2020.
- [3] **Angjeliu**, G., Cardani, G., and Coronelli, D.: Digital modelling and analysis of masonry vaults, Int. Arch. Photogramm. Remote Sens. Spatial Inf. Sci., XLII-2/W11, 83-89, <https://doi.org/10.5194/isprs-archives-XLII-2-W11-83-2019>, 2019.
- [4] **Angjeliu G.**, Coronelli D. and Cardani G.: Structural modelling of complex historic masonry buildings. 10th International Masonry Conference, Milan, Italy URL: <https://www.masonry.org.uk/downloads/s01-583-structural-modelling-of-complex-historic-masonry-buildings>, 2018.
- [5] Giangregorio M. C., **Angjeliu G.**, Coronelli D. and Cardani G.: A Study of the Apse of the Cathedral of Milan, Proc. 10th International Masonry Conference, Milan, Italy, 2018.
- [6] **Angjeliu, G.**, Coronelli D. and Cardani G.: Challenges in Modelling Complex Geometry in Historical Buildings for Numerical Simulations, in the 18th International Conference on Geometry and Graphics, 2019, Springer: Milan, Italy. p. 1218-1230. doi:10.1007/978-3-319-95588-9-105
- [7] Coronelli D., Cardani G. and **Angjeliu G.**: The analysis of the main spire reversed arches of the Cathedral of Milan - 16th International Brick and Block Masonry Conference IBMAC, Padova, 2016.
- [8] Cardani G, Coronelli D. and **Angjeliu G.**: Damage observation and settlement mechanisms in the naves of the cathedral of Milan. In the Proceedings of the 10th International Conference on Structural Analysis of Historical Constructions. CRC Press. ISBN 978-1-138-02951-4; 2016, p. 623-30. <http://hdl.handle.net/11311/1003615>.
- [9] Cardani G., **Angjeliu G.**: Challenges from Building Information Modelling to Finite Element Analysis of existing buildings, 10th International conference on Structural Analysis of Historical Constructions (SAHC 2016), Leuven Belgium.
- [10] Cardani G. and **Angjeliu G.**: Building Information Modelling Applied to Built Heritage: A Structural Analysis Perspective Based on the Interoperability, La conservazione preventiva e programmata: PPC Conference 2014 Monza-Mantova, Italy.
- [11] **Angjeliu G.**, Angjeliu K. and Çapeli L.: Historic Timber-Framed Masonry Buildings in Albania: Conference of Historic Earthquake-Resistant Timber Frames in the Mediterranean Area Università della Calabria, Cosenza, Italy, 2013

- [12] **Angjeliu G.** and Baballëku M.: Seismic Assessment of Historical Masonry Structures: The Former Italian Embassy: , 2nd International Balkans Conference on Challenges of Civil Engineering Tirana, Albania, 2013.

Dissertation

- [1] **Angjeliu G.** Integrated structural modelling and experimental observations in historic masonry constructions. Ph.D. Thesis; Politecnico di Milano, Italy; 2018. URL: <http://hdl.handle.net/10589/139005>.

Technical reports

- [1] D. Coronelli, **G. Angjeliu**, F. Peroti, Seismic structural verifications of a rectifier, Department of Civil and Environmental Engineering, Politecnico di Milano, 2020.
- [2] P. Bamonte **G. Angjeliu**, Smart Pool Project - Structural design of PET modules (Polyethylene terephthalate) used for the construction of swimming pools. [Report in Italian], Department of Civil and Environmental Engineering, Politecnico di Milano, 2019.
- [3] **G. Angjeliu**, Diagnosis and interventions on historical masonry buildings [Report in Italian], Supervisors: Prof. Giuliana Cardani and Prof. Luigia Binda, Politecnico di Milano, 2014.

Posters

- [1] **Angjeliu**, G., Cardani, G., and Coronelli, D.: Digital modelling and analysis of masonry vaults, 2nd International Conference on Geomatics and Restoration, Milan, 2019.
- [2] Cardani G, **Angjeliu G.** Building Information Modelling Applied to Built Heritage: A Structural Analysis Perspective Based on the Interoperability, La conservazione preventiva e programmata: PPC Conference 2014, Monza-Mantova.

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Autorizzo il Politecnico di Milano a pubblicare il presente curriculum sul sito WEB di Ateneo, ai fini istituzionali e in ottemperanza al D. Lgs n. 33 del 14 marzo 2013 Decreto trasparenza.