

# Gianluca Quinci, Ph. D.

BScEng, MScEng, CEng

*Curriculum Vitae*



## PERSONAL INFORMATION

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<b>Name</b>	Gianluca Quinci
<b>Profession</b>	Civil Engineer – Assistant Professor of Department of Civil Engineering, Computer Science and Aeronautical Technologies, Roma Tre University
<b>Nationality</b>	Italian
<b>Date of birth</b>	24/03/1992
<b>E-mail1</b>	gianluca.quinci@uniroma3.it
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<b>Certified e-mail</b>	g.quinci@pec.ording.roma.it

## WORK EXPERIENCE

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<b>Nov. 2023 – Present</b>	Assistant Professor (RtdA) Department of Civil Engineering, Computer Science and Aeronautical Technologies of Roma Tre University – Via Vito Volterra 62, 00146 Rome (Italy) Research Activity on Seismic Risk analysis, Machine learning techniques and seismic mitigation on critical infrastructures (industrial plants and bridges).
<b>Feb. 2023 – Oct. 2023</b>	Post-Doctoral Researcher Department of Civil Engineering, Computer Science and Aeronautical Technologies of Roma Tre University – Via Vito Volterra 62, 00146 Rome (Italy) Research Activity on Seismic Risk analysis, Machine learning techniques and seismic mitigation on critical infrastructures (industrial plants and bridges).
<b>Mar 2023-May 2023</b>	Technical Civil Engineering Scuola Universitaria Superiore di Pavia, Piazza della Vittoria, n.15, 27100, Pavia (PV) Using of shaking table for experimental seismic test at MAXXI Museum
<b>Mar. 2023 – Dec. 2023</b>	Technical Civil Engineering TEA SISTEMI S.p.A., Via Ponte a Piglieri, 8, 56121, Pisa Technical civil engineering for the seismic analysis and retrofit design of industrial structures and equipment
<b>Mar. 2022 – Sept. 2022</b>	Technical Civil Engineering Department of Engineering of Roma Tre University – Via Vito Volterra 62, 00146 Rome (Italy) Technical civil engineering for the study of a methodology for the seismic and static risk assessment of existent bridges
<b>Jun. 2021 - Present</b>	Technical Advisor ALC Engineering S.r.l.– Via delle Rose, 5, 00019, Tivoli (Italy) Technical advisor on static analysis and safety conditions of bridges located in Italy, with respect on exceptional transports.
<b>Jan. 2021 – Mar. 2021</b>	Research Fellow Department of Engineering of Roma Tre University – Via Vito Volterra 62, 00146 Rome (Italy) Research Activity on Seismic Risk analysis of equipment of an Industrial Plant based on fragility curves.

- Nov. 2019 – Jan. 2023** Ph.D. in Civil Engineering  
Department of Engineering of Roma Tre University – Via Vito Volterra 62, 00146 Rome (Italy)  
Research Activity on Seismic Risk of Industrial Facilities: Development of a valid methodology for the evaluation of seismic risk of Major-Hazard Industrial Plants. Design and development of mitigation strategies to reduce the seismic risk in industrial plants using Smart sensors and artificial intelligence.
- Jul. 2019-Nov. 2019** Research Fellow  
Department of Engineering of Roma Tre University – Via Vito Volterra 62, 00146 Rome (Italy)  
Research Activity on Mitigation of the Seismic Risk in Major-Hazard Industrial Plants using Smart Sensors technology.
- Dec. 2018- Mar. 2019** Curricular Trainee  
Department of Techn. Innovation of INAIL - Via Torraccio di Torrenova 7, 00133 Rome (Italy)  
Curricular Internship on Seismic Risk of Major-Hazard Industrial Plants and Mitigation Strategies.

## EDUCATION

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- Nov. 2019 – Jan. 2023** Ph. D. in Civil Engineering with the title of “Doctor Europaeus”. Roma Tre University – Via Vito Volterra 62, 00146 Rome (Italy)  
  
Title of thesis: “An innovative framework for the seismic risk assessment of major-hazard process plant and equipment based on A.I. techniques”, May 2023
- Oct. 2016 – Mar. 2019** Master’s Degree in Civil Engineering for the Protection of Territory from Natural Risks Roma Tre University – Via Vito Volterra 62, 00146 Rome (Italy)
  - Specialization Area: Structures and Seismic Risk
  - Mark: 105/110
  - Title of thesis: “Risk Analysis of an unanchored steel tank for the petrochemical industry”, March 2019
- Sep. 2011 – Dec. 2015** Bachelor’s Degree in Civil Engineering  
University of Rome Tor Vergata - Via del Politecnico 1, 00133 Rome (Italy)
  - Title of thesis: “Self-Healing in cementitious materials”
  - Mark: 104/110
- Sep. 2006 - Jul. 2011** High School Diploma in Scientific Studies  
High School in Science Education “Lazzaro Spallanzani” – Via Rivellese 1, 00019 Tivoli, Rome (Italy)

## PROFESSIONAL LICENCE

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- Jan. 2020 - Present** License to the professional activity of Civil and Environmental Engineer (Nov. 2019) Enrolment in the Board of Engineers of Rome, Section A (Civil and Environmental Engineering) (January 2020)

## COURSES ATTENDED AND CERTIFICATIONS

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- May. 2021** PASSAGGI SICURI: rilievo e modellazione BIM delle infrastrutture  
Course about relief and BIM modelling of civil infrastructures (i.e. bridges)
- June 2022** Giornata di studio Fabre: “Nuove tecnologie e recenti esperienze nel monitoraggio delle infrastrutture”, Portonovo (AN), 27 June 2022

<b>Sept. 2022</b>	NaTech Risk: Management Strategies and Resilience Towards Technological Accidents Caused by Natural Events, Udine, 4-9 Sept. 2022
<b>Jul. 2022</b>	Level 1 bridge inspector – certified by RINA
<b>Nov. 2022</b>	Level 2 bridge inspector – certified by RINA
<b>Oct. 2023</b>	Giornata di studio Fabre: “Dalla valutazione accurata delle opere infrastrutturali alla pianificazione degli interventi”, Bari, 19 Ottobre 2023

## SCOLARSHIPS

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**Nov. 2019 – Jan 2023**      3-year Ph.D. Scholarship

## NATIONAL AND INTERNATIONAL RESEARCH ACTIVITIES

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<b>May 2019</b>	Participation as research fellow at national project “MSMART”. The aim of the project is the investigation of the seismic behaviour of critical infrastructures, i.e. industrial and chemical plant, in order to evaluate efficient seismic mitigation system to reduce the seismic risk. Traditional and innovative sensor has been studied and tested in order to perform their potential. The project has been conducted with the collaboration of Department of Technological Innovations of INAIL.
<b>Jul. 2019</b>	Participation as PhD student at the European project "SPIF": Seismic Performance of multi-componentsystems in special risk Industrial Facilities The objective of the project is the holistic investigation of the seismic behavior of industrial plants equipped with complex process technology by means of shaking table tests. Members: Center for Wind and Earthquake Engineering, RWTH Aachen (Germany) National Technical University of Athens (Greece), University of Belgrade (Serbia), Swissnuclear (Switzerland), Wölfel Engineering GmbH (Germany), University of Trento (Italy), Maurer Engineering GmbH (Germany), Roma TRE University (Italy), Purdue University (USA)
<b>Jul. 2020</b>	Participation at the European project “FIRST WIRE”: Fiber Reinforced Steel WIRES for high performance lightweight ropes and cables operating in demanding scenarios FIRST-WIRE (Fiber Reinforced Steel WIRE) project aims at developing a lightweight steel-based wire to be used for ropes and cables for a wide range of industrial and civil (i.e. bridges) where high performance over weight ratio plays a decisive role and the recourse to traditional full steel wire is unfeasible due to the excessive selfweight and/or the unsatisfactory structural performances. Members: Astarte Strategies SRL (Italy), Redaelli Tecna S.p.a. (Italy), national technical university of athens - NTUA (Greece), Università degli Studi di Padova (Italy), Università degli Studi Roma Tre (Italy), Universitaet Stuttgart (Germany), KME GERMANY GMBH & CO KG (Germany), IHC MTI BV (Netherlands)
<b>Jan. 2022</b>	Technical Manager of Work Package 4 of the regional project “MLazio” founded by Lazio region. Topic of the work package: “Development of a methodology for the quantitative static and seismic risk assessment of the bridges of the Lazio region”. MLAZIO project aims at developing a smart and innovative methodology for the static and seismic risk assessment of the existent bridges of the Lazio Region. The primary goal of the project is to develop a bridge management system to manage the existent bridges through innovative technology such as satellite monitoring and machine learning.
<b>Jan. 2023</b>	Participation as Post-Doctoral researcher in the convention between Roma Tre University and research consortium FABRE. The activities of the convention are focused on the simplified analysis of the bridges of Perugia district based on the Italian guidelines the safety of existing

bridges

**March 2023**

Participation as Assistant Professor (RtdA) in the convention between Roma Tre University and research consortium FABRE. The activities of the convention are focused on the analysis of the bridges of ANAS based on Italian technical code (NTC '18)

**March 2023**

Participation as Assistant Professor (RtdA) in the convention between Roma Tre University and research consortium FABRE. The activities of the convention are focused on the design of monitoring system for the bridges of ASTM.

**June 2023**

Participation as Assistant Professor (RtdA) in the convention between Roma Tre University and research consortium FABRE. The activities of the convention are focused on the qualitative and quantitative analysis and design of monitoring system for the bridges of Autastrada Asti-Cuneo.

**January 2024**

Participation as Assistant Professor (RtdA) in the convention between Roma Tre University and ENEA research center. The activities of the convention are focused on the study of seismic behavior of secondary elements of school structures.

## **NATIONAL AND INTERNATIONAL CONFERENCES**

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Presenting author and speaker in “Ponti, viadotti, e gallerie esistenti: ricerca, innovazione e applicazioni” conference organized by FABRE consortium, Genova 12-15 February 2024 Memory: Paolacci F., Quinci G., Marta L., Moretti M. “A methodology for the preliminary seismic assessment of road bridges within the Italian guidelines on the assessment and management of risk conditions of bridges”

Presenting author and speaker in Pressure Vessels & Piping Division Conference PVP 2021, July 13-15, 2021, Virtual conference. Memory: Butenweg, C., Paolacci F., Quinci G. "Experimental Investigation on the Seismic Performance of a Multicomponent System for Major-hazard Industrial Facilities".

Presenting author and speaker in Pressure Vessels & Piping Division Conference PVP 2022, July 17-22, 2022, Las Vegas, Nevada. Memory: Quinci G., Paolacci F., Phan N. "A novel machine learning based framework for the seismic risk assessment of industrial plant”.

Presenting author and speaker in Pressure Vessels & Piping Division Conference PVP 2023, July 16-21, 2023, Atlanta, Georgia. Memory: Quinci G., Paolacci F. "On the use of artificial neural network technique for seismic fragility analysis of a three-dimensional industrial frame”.

Invited speaker to technical seminar “Monitoraggio delle infrastrutture critiche via satellite”, organized by Ordine degli Ingegneri della provincia di Roma, 27 May 2022, Memory:” Monitoraggio multi-livello di opere in elevazione: il progetto MLAZIO”

Invited speaker to technical seminar “Tecniche avanzate di raccolta ed utilizzo dati nell'ingegneria civile”, organized by Università degli Studi Roma Tre and Ordine degli Ingegneri della provincia di Roma, 31 May 2022, Memory:” Uso di tecniche di intelligenza artificiale nella valutazione della vulnerabilità sismica di impianti industriali”

Invited speaker to technical seminar “Il Rischio NATECH negli stabilimenti industriali: le principali sfide poste dalle attività di analisi, valutazione e controllo”, organized by Ordine degli Ingegneri della provincia di Roma, 09 May 2024, Memory:” Il rischio NATECH negli impianti a rischio di incidente rilevante: lo studio del comportamento dinamico e la modellazione numerica dei componenti industriali”

Presenting author and speaker in XIX Convegno ANIDIS L'ingegneria Sismica in Italia: Torino, 11-15 settembre 2022. Memory: Quinci G., Paolacci F., Fragiadakis M. “An innovative framework for risk assessment of non-structural components for industrial plants”

Presenting author in SPIE Remote Sensing 2022, Earth Resources and Environmental Remote Sensing/GIS Applications XIII: Berlin, 5-7 settembre 2022. Memory: Quinci et al. “A Novel Bridge Monitoring System Implementing Ground-Based, Structural and Remote Sensing Information into A GIS-Based Catalogue”

## **FELLOWSHIP AND AWARDS**

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Member of Seismic Technical Committee of American Society of Mechanical Engineering -Pressure Vessels and Piping Division.

It should be noted that the position of STC member is awarded only after passing the screening of all committee members based on the candidate's CV who must demonstrate distinguished contributions in the field of seismic engineering and particularly in the seismic engineering applied to industrial facilities

Co-Technical Program Responsible of Seismic Technical Committee of American Society of Mechanical Engineering -Pressure Vessels and Piping Division.

Early Career Responsible of Seismic Technical Committee of American Society of Mechanical Engineering -Pressure Vessels and Piping Division

Member of the European Association for Earthquake Engineering (EAEE). The main topic of the association is the Seismic assessment, design and resilience of industrial facilities. The association have the aim to create a network with other European Engineer. Members of the Association: Roma TRE University (Italy), Aachen university (Germany), SDA-Engineering GmbH (Germany), University of Trento (Italy), KOERI (Turkey), GEBZE (Turkey), University of Belgrade (Serbia), NTUA (Greece), University of Ljubljana (Slovenia), University of Bristol (UK)

Assistant Professor (RTdA) at University Roma Tre, November 2023- Present. Research Activity on seismic risk analysis, mitigation strategies and machine learning technique for the risk assessment of critical infrastructures (industrial plants and bridges)

Post-Doctoral researcher at University Roma Tre, February 2023- October 2023. Research Activity on seismic risk analysis, mitigation strategies and machine learning technique for the risk assessment of critical infrastructures (industrial plants and bridges)

Research Fellow at University Roma Tre, July 2019-November 2019. Research Activity on Mitigation of the Seismic Risk in Major-Hazard Industrial Plants using Smart Sensors technology.

PhD candidate at University Roma Tre, November 2019-January 2023. Research activity on Seismic Risk of Industrial Facilities: Development of a valid methodology for the evaluation of seismic risk oh Major-Hazard Industrial Plants. Design and development of mitigation strategies to reduce the seismic risk in industrial plants using Smart sensors and artificial intelligence.

Research fellow at University Roma Tre, January 2021-March 2021. Research Activity on Seismic Risk analysis of equipment of an Industrial Plant based on fragility curves.

Visiting PhD candidate at National Technical University of Athens, March 2022- June 2022. Research topic: Machine learning techniques applied to civil engineering

First runner-up prize in PhD category in in Pressure Vessels & Piping Division Conference PVP 2022, July 17-22, 2022, Las Vegas, Nevada. Memory: Quinci G., Paolacci F., Phan N. "On the use of artificial neural network technique for seismic fragility analysis of a three-dimensional industrial frame".

Certificate of Appreciation for Authoring the Outstanding Technical Paper from the Seismic Engineering Technical Committee at the 2022 ASME Pressure Vessels & Piping Conference Titled "On the Use of Artificial Neural Network Technique for Seismic Fragility Analysis of a Three-Dimensional Industrial Frame."

Chair of the session "SE-04 Machine Learning for Seismic Analysis of Industrial Facilities SE-04 Machine Learning for Seismic Analysis of Industrial Facilities" in PVP Conference 2024

## TEACHING ACTIVITIES

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Teaching assistant within Theory and Design of Bridges course at the Department of Engineering of Roma Tre University (Nov. 2019-Present)

Teaching assistant within di Offshore Engineering and Marine Structures course at the Department of Engineering of Roma Tre University (Sep. 2022-Present)

## PUBLICATIONS

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**Sep. 2019**

Ciucci M., Marino A., Barbieri L., Quinci G. "Seismic risk assessment and management in major hazard industrial plants", in [Atti del XVIII Convegno ANIDIS L'ingegneria Sismica in Italia: Ascoli Piceno, 15-19 settembre 2019][Pisa : Pisa University Press, 2019.] - Permalink: <http://digital.casalini.it/10.1400/271039> - Permalink: <http://digital.casalini.it/4551308>

**July. 2021**

Nardin, C, Bursi O., ..., Quinci G. "Shake Table Testing for a Multi-component Prototype Industrial Plant: Input and System Modelling Issues." American Society of Mechanical Engineers, Pressure Vessels and Piping Division (Publication) PVP 5 (2021): American Society of Mechanical Engineers, Pressure Vessels and Piping Division (Publication) PVP, 2021, Vol.5. Web.



- July 2021** Butenweg, C., Paolacci F, ..., Quinci G. "Experimental Investigation on the Seismic Performance of a Multicomponent System for Major-hazard Industrial Facilities." American Society of Mechanical Engineers, Pressure Vessels and Piping Division (Publication) PVP 5 (2021): American Society of Mechanical Engineers, Pressure Vessels and Piping Division (Publication) PVP, 2021, Vol.5. Web.
- Sep. 2021** Christoph Butenweg, Oreste S. Bursi, Fabrizio Paolacci, Marko Marinković, Igor Lanese, Chiara Nardin, Gianluca Quinci "Seismic performance of an industrial multi-storey frame structure with process equipment subjected to shake table testing", Engineering Structures, Volume 243, 2021, <https://doi.org/10.1016/j.engstruct.2021.112681>.
- Sep. 2021** F. Paolacci, G. Quinci, C. Nardin, V. Vezzari, A. Marino, M. Ciucci, "Bolted flange joints equipped with FBG sensors in industrial piping systems subjected to seismic loads", Journal of Loss Prevention in the Process Industries, Volume 72, 2021, <https://doi.org/10.1016/j.jlp.2021.104576>.
- May 2022** Nardin, C., Bursi, OS, Paolacci, F, Pavese, A, Quinci, G., "Experimental performance of a multi-storey braced frame structure with non-structural industrial components subjected to synthetic ground motions". Earthquake Engineering Structural Dynamics. 2022; 1– 24. <https://doi.org/10.1002/eqe.3656>
- June 2022** Quinci, G, Phan, NH, & Paolacci, F. "On the Use of Artificial Neural Network Technique for Seismic Fragility Analysis of a Three-Dimensional Industrial Frame." Proceedings of the .Volume 5: Operations, Applications, and Components; Seismic Engineering; ASME Nondestructive Evaluation, Diagnosis and Prognosis (NDPD) Division. Las Vegas, Nevada, USA. July 17–22, 2022. V005T08A013. ASME. <https://doi.org/10.1115/PVP2022-83874>
- June 2022** Kalemi, B, Paolacci, F, Caputo, AC, Corritore, D, & Quinci, G. "Quantitative Probabilistic Seismic Resilience Assessment of Industrial Facilities." Proceedings of the .Volume 5: Operations, Applications, and Components; Seismic Engineering; ASME Nondestructive Evaluation, Diagnosis and Prognosis (NDPD) Division. Las Vegas, Nevada, USA. July 17–22, 2022. V005T08A010. ASME. <https://doi.org/10.1115/PVP2022-84660>
- August 2022** Giannini R., Paolacci F., Phan H. N., Corritore D. and Quinci, G, "A novel framework for seismic risk assessment of structures" Earthquake Engineering and Structural Dynamics, 2022, pp. 118 DOI:10.1002/eqe.3729
- Sep. 2022** Quinci G., Paolacci F., Fragiadakis M. "An innovative framework for risk assessment of non-structural components for industrial plants", XIX Convegno ANIDIS L'ingegneria Sismica in Italia: Torino, 11-15 settembre 2022
- Sep 2022** Paolacci F., Quinci G, Meriggi P., Pallante L., De Felice G. "A regional model for classifying, managing, evaluating, and monitoring the seismic safety of bridge structures: the MLAZIO project", XIX Convegno ANIDIS L'ingegneria Sismica in Italia: Torino, 11-15 settembre 2022
- Sep 2022** Quinci, G., Gagliardi, V., Pallante, L., Manalo, J. R.D., Napolitano, A., Bertolini, L., Bianchini Ciampoli, L., Meriggi, P., D'Amico, F., Paolacci, F. "A Novel Bridge Monitoring System Implementing Ground-Based, Structural and Remote Sensing Information into A GIS-Based Catalogue". SPIE Remote Sensing 2022, Earth Resources and Environmental Remote Sensing/GIS Applications XIII.
- August 2022** Paolacci F., Giannini R., Phan N. H., Quinci G. "Scores: an algorithm for records selection to employ in seismic risk and resilience analysis", XIX Convegno ANIDIS L'ingegneria Sismica in Italia: Torino, 11-15 settembre 2022
- May 2023** Quinci G., "An innovative framework for seismic risk assessment of mayor-hazard process plant and equipment based on A.I. techniques", PhD Thesis, Roma Tre University, May 2023.
- Jul. 2023** Quinci, G, & Paolacci, F. "A Novel Machine Learning Based Framework for the Seismic Risk Assessment of Industrial Plant." Proceedings of the . Volume 7: Seismic Engineering; ASME Nondestructive Evaluation, Diagnosis and Prognosis (NDPD) Division. Atlanta, Georgia, USA. July 16–21, 2023. V007T08A010. ASME. <https://doi.org/10.1115/PVP2023-106452>
- Sep 2023** Quinci, Gianluca, et al. "Modelling of non-structural components of an industrial multi-storey frame for seismic risk assessment." Bulletin of Earthquake Engineering (2023): 1-25. <https://doi.org/10.1007/s10518-023-01753-4>
- Dec 2023** Quinci, Gianluca, Fabrizio Paolacci, and Hoang Nam Phan. "Artificial Neural Network Technique For Seismic Fragility Analysis Of A Storage Tank Supported By Multi-Storey Frame." Journal of Pressure Vessel Technology (2023): 1-15. <https://doi.org/10.1115/1.4063242>
- Jan. 2024** Pallante, L.; Meriggi, P.; D'Amico, F.; Gagliardi, V.; Napolitano, A.; Paolacci, F.; Quinci, G.; Lorello, M.; de Felice, G. "An Integrated Data-Driven System for Digital Bridge Management". Buildings 2024, 14, 253. <https://doi.org/10.3390/buildings14010253>