

EDUCATION AND TRAINING

- February 2016 **Cotutelle PhD program**
3-year PhD fellowship
First Class Honours
Sapienza University of Rome (Italy)
University of Minho - Guimarães (Portugal)
Thesis: **Seismic performance of masonry cross vaults: learning from historical developments and experimental testing**
Advisors: Prof. Paulo Lourenço (UMinho) and Prof. Giorgio Monti (Sapienza)
- October - December 2013 Two courses within the “**Advanced Master in Structural Analysis of Monuments and Historical Constructions**”
SA2: Structural analysis techniques
SA3: Seismic behaviour and structural dynamics
- April 2010 **University postgraduate professional degree (Master di II livello)**
“Design of seismic sustainable structures in construction works”
Master School F.lli Pesenti: Polytechnic University of Milan - Italy
Thesis: Structural analysis of a strategic building hit by the April 6th 2009 earthquake in L’Aquila: analysis of recorded seismic data, Codes of Practice comparison and strengthening interventions design (in Italian)
- December 2008 **MSc in Architecture and Building Engineering (5-year programme)**
University of Calabria - Italy
First Class Honours
Thesis: Seismic design: guidelines, issues and structural analysis models (in Italian)

RESEARCH and TEACHING EXPERIENCE

- Since April 2018 to March 2020 **Post-doctoral fellow**
University of Minho - Portugal
Finite Element Method, Nonlinear analyses, Constitutive laws, Structural dynamics, and Seismic engineering
Supervisor: Prof. P.B. Lourenço
- Since April 2017 to March 2018 **Post-doctoral fellow**
Sapienza University of Rome
Random Lattice Modelling of Pultruded GFRP beams: numerical investigation vs experimental results
Supervisor: Prof. N. Nisticò
- Since February to July 2017 **Teaching assistant for the courses entitled “Structural Design” and “Seismic design”**
Degree in Sustainable Building Engineering and Building and environmental systems engineering (held in Italian)
Faculty of Civil, Building and Environmental Engineering, Sapienza University of Rome, University branch of Rieti
Lecturer: Prof. N. Nisticò
- Since November 2016 to February 2017 **Tutor for the course entitled “Theoretical and Applied Mechanics”**
Degree in Product Design (held in English)
Faculty of Architecture, Sapienza University of Rome
Lecturer: Prof. M. Pasca

RESEARCH and TEACHING EXPERIENCE

- March to August 2016 **Post-doctoral fellow**
University of Minho (Portugal)
History of conservation, and evolution of materials and techniques in historical constructions
Within the “Advanced Master in Structural Analysis of Monuments and Historical Constructions” (promoted by the Universities of Guimarães, Padua, Barcelona, Prague)
Supervisor: Prof. P.B. Lourenço
- November 2015 to May 2016 **Tutor in the following master thesis dissertation**
Seismic analyses of cross vaults by means of micro-modelling approach (2016)
- May - September 2008 **Erasmus Placement**
SINTEF Building and Infrastructure - Trondheim (Norway)
Steel and Polypropylene fibre reinforced concrete
Laboratory activities and results processing for assessing capacity and ductility of the specimens

MEMBERSHIP and AWARD

- June 2020 Recipient of the **PhD thesis award 2016** of Sapienza University of Rome (15 October 2020)
- September 2018 **“David C. Fischetti Award”** in recognition of an outstanding peer-reviewed article that advances the field of conservation engineering - **APT conference, Buffalo (USA)**
- Since 2016 **Reviewer for:**
- **International Journal of Architectural Heritage**
- **International Journal of Masonry Research and Innovation**
- Since 2016 **Accredited for post-seismic survey of cultural heritage buildings**
In cooperation with Italian Department of Civil Protection and Ministry of Cultural Heritage and Activities and Tourism
- 2011 EUCENTRE (European Centre for Training and Research in Earthquake Engineering) in cooperation with the European Department of Civil Protection
Selected as expert for post-earthquake inspections
DRHOUSE project (Development of Rapid Highly-specialized Operative Units for Structural Evaluation)
- Since May 2010 **Professional Engineers** Registration Board of Rome - Nr. 31672-A

PUBLICATIONS

Books

Finite element analysis for building assessment: Advanced use and practical recommendations

P. B. Lourenço, A. Gaetani

about 350 pages | New York: Routledge (**expected publication Summer 2021**)

Publication of his PhD thesis - June 2020

about 160 pages | Rome: Sapienza Università Editrice

(ISBN 978-88-9377-144-3, doi.org/10.13133/9788893771443)

Historic construction and conservation: materials, systems and damage

P. Roca, P.B. Lourenço, A. Gaetani

324 pages | 717 Illustrations. 1st ed. **August 2019**, New York: Routledge.

ISBN: 9780367145743

Journal
publications

A. Gaetani, N. Bianchini, P.B. Lourenço (2021)

Simplified micro-modelling of masonry cross vaults: stereotomy and interface issues

International Journal of Masonry Research and Innovation, 6(1), 97–125 (doi: 10.1504/IJMRI.2020.10032218)

A. Gaetani, A. Fascetti, N. Nisticò (2019)

Parametric investigation on the tensile response of GFRP elements through a discrete lattice modeling approach

Compos. Part B Eng. 176, 107254. doi:10.1016/j.compositesb.2019.107254

A. Gaetani, P.B. Lourenço, G. Monti, G. Milani (2017)

A parametric investigation on the seismic capacity of masonry cross vaults

Engineering Structures 148:686–703. doi: 10.1016/j.engstruct.2017.07.013

A. Gaetani, P.B. Lourenço, G. Monti, M. Moroni (2017)

Shaking table tests and numerical analyses on a scaled dry-joint arch undergoing windowed sine pulses

Bulletin of Earthquake Engineering, 15, 4939–61. doi: 10.1007/s10518-017-0156-0

A. Gaetani, G. Monti, P.B. Lourenço, G. Marcari, (2015)

Design and analysis of cross vaults along history

International Journal of Architectural Heritage, 10(7), 841–856.

doi: 10.1080/15583058.2015.1132020

Recipient of the “David C. Fischetti Award”

Conference
publications with
review

A. Gaetani, N. Bianchini, P.B. Lourenço (2019)

Regras geométricas e estabilidade de abóbadas em cruzaria ao longo da história e outros subsídios para a intervenção no património

In *3rd International Congress on Luso-Brazilian Construction History*, Salvador - Bahia - Brazil, 3-6 September 2019

A. Gaetani, P.B. Lourenço (2019)

Influences and analogies between masonry arch and cross vault: from construction to seismic response

In *2nd International Symposium on Tile Vaulting*, Valencia (Spain), 21-24 November 2018

A. Gaetani, P.B. Lourenço (2018)

Finite element modelling of masonry cross vaults: considerations on block interlocking and interface properties

In *10th International Masonry Conference*, Milan (Italy), 9-11 July 2018

Selected for a Special Issue of the *International Journal of Masonry Research and Innovation*

A. Gaetani (2017)

Failure mechanisms of masonry arch and cross vault under seismic action

In *Dynamic Interaction of Soil and Structure DISS_17*, Rome (Italy), 19-20 October 2017

PUBLICATIONS

A. Gaetani, P.B. Lourenço, G. Monti, A. Paolone, G. Milani, (2016)
Sensitivity analysis on the seismic capacity of masonry cross vaults
In *10th International Conference on Structural Analysis of Historical Constructions*,
Leuven (Belgium)

Selected for a Special Issue of the International Journal of Architectural Heritage

A. Gaetani, P.B. Lourenço, G. Monti, M. Moroni, (2016)
Experimental and numerical analyses of a masonry arch under base impulse excitation.

In *16th International Brick and Block Masonry Conference*, Padua (Italy)

A. Gaetani, G. Monti, P.B. Lourenço, G. Marcari, (2015)

Masonry cross vaults: an overview of the historical developments

In *2nd International Conference on Architecture and Engineering for the Defence of the Monuments*, Perugia (Italy)

G. Monti, M. Vailati, A. Gaetani, A. Paolone, (2014)

Analytical models for seismic assessment and strengthening of masonry arches

In *9th International Masonry Conference*, Guimarães (Portugal)

National
conference
publications with
review

G. Monti, M. Vailati, A. Gaetani, A. Paolone (2013)

Modelli analitici di capacità per archi di muratura rinforzati soggetti ad azioni sismiche. In *XV Convegno ANIDIS - L'Ingegneria sismica in Italia*, Padova

F. Fornaini, L. Sonnessa, L. Larocca, A. Gaetani, (2010)

Meditated modelling and interpretation of the structural behaviour under heavy seismic actions, for a sustainable retrofit to the most updated codes. In *Sustainable Development Strategies for Constructions in Europe and China*, Roma

WORK EXPERIENCE

Since June to
September 2018 Freelance **Project Manager at AlienTT.**
Proposal writer for SME contribution within **Horizon 2020** program

Since April 2009 **Inspections** about the bearing capacity of structures **after the strong Italian earthquakes in Central Italy (2016), Emilia Romagna Region (May 2012) and L'Aquila (2009)**
In cooperation with Italian Department of Civil Protection and the Fire Department (Ordinary and cultural heritage buildings)

Since September
2009 **Freelance civil/structural engineer**

September 2009 -
December 2012 **Professional engineer, structural design at PRAS Tecnica edilizia S.r.l. – Rome**
Team design in cooperation with Architects and Mechanical Engineers
Structural design of new buildings
Works supervision & HSE Coordination
Proposals for national and foreign auctions
Structural analysis of historical constructions
Masonry and concrete buildings retrofit

LANGUAGES

Italian, native

English, full professional proficiency

Portuguese, minimum professional proficiency

Spanish, basic professional proficiency

SOFTWARE

DIANA, MIDAS, SAP2000, NOLIAN, STRAUS7, SISMICAD

Matlab, Seismosignal, SPSS

Autocad, Archicad, Photoshop, Office

OTHER SKILLS

Violin diploma and amateur **guitar** player

Violin player in the **John Cabot Chamber Orchestra** - Rome

Marathon runner (Lisbon 2015, Bari 2016, Rome 2018), football, mountain bike, swimming

Member of "**Art Trekking Italia**" association

FAI volunteer (Fondo Ambiente Italiano), Italian equivalent of British National Trust

Rome, 14/06/2021