

JACOPO BONARI

Born in Grosseto, Italy, 30th June 1991

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WORKING EXPERIENCE

- 06/2021–present Post-doctoral fellow, teaching assistant, IMT School for Advanced Studies Lucca (IMT)
- 11/2017–06/2021 PhD candidate, IMT

EDUCATION

- 09/2014–10/2017 University of Pisa, master's degree in Building and Structural Engineering, curriculum in Civil Constructions
Thesis: "*Modeling of Piezoelectric Cantilever Beams for Energy Harvesting from Structural Vibrations*"
Grade: 110/110 with honors
- 10/2010–09/2014 University of Pisa, bachelor's degree in Civil and Environmental Engineering
Thesis: "*Origini della statica grafica e del calcolo delle travature reticolari*"
Grade: 110/110 with honors

INTERNATIONAL EXPERIENCES

- 11/2019–present Visiting research scientist within the IMCS research team at the University of the Bundeswher, Munich (DE)
- 09/2018 Visiting research scientist within the IMCS research team at the University of the Bundeswher, Munich (DE)
- 06/2017–08/2017 Visiting student at the Babol Noshirvani University of Technology, Babol (IR), under the supervision of Prof. Ramazan-Ali JAFARI-TALOOKOLAEI
- 08/2014–09/2014 Visiting Student at the San Diego State University College of Engineering, San Diego (USA)

SELECTED INTERNATIONAL CONFERENCES CONTRIBUTION

- Bonari J., Paggi M. and Reinoso, J.: FEM formulation for fully coupled normal and tangential contact problems with complex interfaces, *10th Contact Mechanics International Symposium*, Lousanne, Switzerland, 23-25 May 2022
- Bonari, J. and Paggi, M.: A novel finite element approach for the analysis of normal and sliding contacts, *25th International Congress of Theoretical and Applied Mechanics*, Milan, Italy, 22–27 August 2021
- Bonari, J., Marulli, M.R., Hagemeyer, N., Mayr, M., Popp, A., Paggi, M.: A multi-scale FEM-BEM formulation for contact mechanics between rough surfaces, *8th GACM Colloquium on Computational Mechanics*, Kassel, Germany, 28–30 August 2019

- Bonari, J., Colonna, D., Valvo, P. S.: Energy harvesting from bridge vibrations with piezoelectric devices – Analysis of a case study bridge, *10th European Solid Mechanics Conference*, Bologna, Italy, 2–6 July 2018

LIST OF PEER REVIEWED PUBLICATIONS

- Bonari, J., Paggi, M., Dini, D. (2022): A new finite element paradigm to solve contact problems with roughness, *International Journal of Solids and Structures*, 253:111643
- Bonari, J., Paggi M., Reinoso, J. (2022): From the pioneering contributions by Wriggers to a new class of computational methods for tribology, in: Aldakheel, F., Hudobivnik, B., Soleimani, M., Wessels, H., Weißenfels, C., Marino, M. (eds) *Current Trends and Open Problems in Computational Mechanics*. Springer, Cham, 385–393
- Bonari, J., Paggi, M., Reinoso, J. (2020): A framework for the analysis of fully coupled normal and tangential contact problems with complex interfaces, *Finite Elements in Analysis and Design* 196(2021):103605
- Bonari, J. and Paggi, M. (2020): Viscoelastic effects during tangential contact analyzed by a novel finite element approach with embedded interface profiles, *Lubricants*, 8(12):107
- Bonari, J., Marulli, M.R., Hagemeyer, N., Mayr, M., Popp, A., Paggi, M. (2019): A multi-scale FEM-BEM formulation for contact mechanics between rough surfaces, *Computational Mechanics*, 65:731–749

TECHNICAL SKILLS

Theoretical and applied knowledge of Finite Element Method (FEM) gained through use of commercial and in-house developed FEM software, either oriented to the numerical analysis of a general class of fundamental physics problems or tailored for applications in the field of civil and structural engineering · **FreeFEM++**, **BACI**, **FEAP**, **CSIBridge**, **SAP2000**

Theoretical and applied knowledge of the Boundary Element Method (BEM), with particular focus on frictionless and frictional contact problems involving half spaces with rough interfaces analyzed either with self-developed or third-party software · **MIRCO**, **TAMAAS**

Knowledge of modelling, meshing, and post-processing software · **AutoCAD**, **Rhinoceros**, **CUBIT**, **GMSH**, **ParaView**

Programming and joint software development skills · **MATLAB**, **Fortran**, **Python**, **L^AT_EX**, **Gitlab**, **Gitlab**

Practical knowledge of real surfaces topology acquisition instrumentation · **Leica DCM Confocal Profilometer**

TRANSFERABLE SKILLS

Dissemination · Teamwork · Creativity · Responsiveness · Prioritization

LANGUAGES

ITALIAN · Mother-tongue

ENGLISH · Advanced, conversationally fluent (C1)

GERMAN · Basic (B1)

EXTRA-CURRICULAR ACTIVITIES

01/2016–present

Treasurer of the university student voluntary organization Engineering Without Borders - Pisa