Luigi Greco (Ph.D, Ms.C, Ing.)

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CONTACT INFORMATION

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ACADEMIC PROFILES: Google Scholar
ResearchGate
Scopus
ORCiD

DATE & PLACE OF BIRTH: June 30, 1997; Sant'Angelo Lodigiano, Italy

CITIZENSHIP: Italian

EDUCATION

1. PhD Degree in Design, Modeling and Simulation in Engineering. Advisors: Proff. A. Reali, M. Negri, Dr. A. Patton. Thesis title: *Isogeometric methods for the study of fracture mechanics via phase-field modeling* - University of Pavia, Pavia, Italy (Year 2025).
2. Italian Engineering professional license - University of Pavia, Pavia, Italy (Year 2022), special label "Doctor Europaeus".
3. Master's Degree in Civil Engineering (grade: 110/110 cum laude) - University of Pavia, Pavia, Italy (Year 2021).
4. Bachelor's Degree in Civil and Environmental Engineering (grade: 107/110) - University of Pavia, Pavia, Italy (Year 2019).
5. High School Diploma in Construction and Land Surveying (grade: 100/100 cum laude) - Technical Institute A. Volta, Pavia, Italy (Year 2016).

EMPLOYMENT

1. Adjunct Professor - University of Pavia, Pavia, Italy (October 2025 - present)
2. Post-doctoral researcher - University of Pavia, Pavia, Italy (April 2025 - present)
3. Research fellow - University of Pavia, Pavia, Italy (October 2024 - April 2025)
4. PhD student - University of Pavia, Pavia, Italy (October 2021 - October 2024)

VISITING PERIODS

1. Rostock University, Rostock, Germany (4 weeks, July 2025). Visiting Postdoc. Sponsor: Prof. L. Radtke.
2. Bundeswehr University, Munich, Germany (11 weeks, March 2024 - May 2024). Visiting PhD Student. Advisor: Prof. J. Kiendl.
3. Bundeswehr University, Munich, Germany (10 weeks, September 2023 - November 2023). Advisor: Prof. J. Kiendl.

AWARDS

1. Italian Best PhD Thesis in Computational Mechanics of 2025, from Gruppo Italiano di Meccanica Computazionale, GIMC, (March 2026).
2. 9th CISM-ECCOMAS Summer school, Attendance Scholarship for PhD student, from International Centre for Mechanical Sciences, (July 2024).
3. ECCOMAS Lisbon, Attendance Scholarship for PhD student, from European Community on Computational Methods in Applied Sciences, (June 2024).
4. Erasmus Traineeship grant, from Erasmus + program, (April 2023).

5. International mobility grants to students enrolled in PhD courses at the University of Pavia, from University of Pavia, (March 2023).
6. Merit and Right to Study Grant (academic scholarship for Bachelor and Master degree students), from EDiSU Pavia, (September 2017 - September 2020).
7. Autodesk Student Expert, Autodesk Education Community (June 2015) .

PUBLICATIONS

1. H.M.Verhelst, **L. Greco** and A. Reali, 2026. Adaptive isogeometric analysis of high-order phase-field fracture based on THB-splines. Computer Methods in Applied Mechanics and Engineering, Vol. 460 (2026): pp. 11910. DOI: 10.1016/j.cma.2026.119103
2. **L. Greco**, J. Kiendl, M. Negri, A. Patton and A. Reali, 2025. Fourth-order isogeometric phase-field modeling of dynamic brittle fracture: numerical study and comparison with second-order models. Computer Methods in Applied Mechanics and Engineering, Vol. 449, pp. 118513 DOI: 10.1016/j.cma.2025.118513.
3. **L. Greco**, E. Maggiorelli, M. Negri, A. Patton, A. Reali. 2025. AT_1 fourth-order isogeometric phase-field modeling of brittle fracture. Mathematical Models and Methods in Applied Sciences, Vol. 35, No. 13, pp. 2741-2795, DOI: 10.1142/S0218202525500502.
4. **L. Greco**, A. Patton, M. Negri, A. Marengo, U. Perego, A. Reali. 2024. Higher order phase-field modeling of brittle fracture via Isogeometric Analysis. Engineering with Computers, Vol. 40, pp. 3541-3560, DOI: 10.1007/s00366-024-01949-5.

JOURNAL REVIEWER

1. Reviewer of **Computer Methods in Applied Mechanics and Engineering** (CMAME).
2. Reviewer of **Computational Mechanics** (COMPMECH).
3. Reviewer of **Progress in Additive Manufacturing.**

INVITED TALK

1. **L. Greco**, A. Patton, M. Negri and A. Reali, Isogeometric methods for the study of fracture mechanics via phase-field modeling, 3rd GIMC-SIMAI Young, Pisa, Italy, June 2026, *Invited planarist.*
2. **L. Greco**, and A. Reali, Benefits of High-Order Phase-Field Models in Fracture Mechanics via Isogeometric Discretization, The 10th International Workshop on High-Order Finite Element and Isogeometric Methods (HOFEIM2026), Siena, Italy, May 2026, *invited poster.*
3. **L. Greco**, A. Patton, E. Maggiorelli, M. Negri and A. Reali, AT1 high-order Isogeometric phase-field modeling for brittle fracture, Lake Como Summer School "Isogeometric Analysis: Theory, Applications, and New Trends", Como, Italy, July 2024, *invited talk.*

CONFERENCE CONTRIBUTIONS

1. **L. Greco**, and A. Reali, Benefits of High-Order Phase-Field Models in Fracture Mechanics via Isogeometric Discretization, 17th World Congress on Computational Mechanics - 10th European Congress on Computational Methods in Applied Sciences and Engineering (WCCM-ECCOMAS 2026), Munich, Germany, July 19-24, 2026.
2. **L. Greco**, L. Radtke and A. Reali, A numerical-experimental comparison of Dog-Bone ductile sample via high-order isogeogmetric phase-field model for brittle fracture, 3rd GIMC-SIMAI Young, Pisa, Italy, June 2026.
3. **L. Greco**, L. Radtke and A. Reali, Phase-field brittle fracture simulation for real ductile experiments, 1st Fatigue-FEM-Fatigue workshop, Rostock, Germany, February 2026.
4. **H.M.Verhelst**, L. Greco and A. Reali, Adaptive Isogeometric Analysis of Phase-Field Brittle Fracture, 8th ECCOMAS Young Investigator Conference, Pescara, Italy, September 2025.

5. **H.M.Verhelst**, L.V. Vinuela, L. Greco, A. Mantzaflaris, C. Giannelli and A. Reali, Adaptive Isogeometric Analysis for Volumetric Phase-Field Simulations with Application to Brittle Fracture: Recent Advances and Challenges, 4th SMART conference, Reggio Calabria, Italy, September 2025.
6. **L.Greco**, J. Kiendl, M. Negri, A. Patton and A. Reali, High-order Phase-Field Models for accurate and efficient fracture simulations via Isogeometric discretizations, 8th ECCOMAS Young Investigator Conference, Pescara, Italy, September 2025.
7. **L.Greco**, J. Kiendl, M. Negri, A. Patton and A. Reali, Phase field for brittle fracture: a second- and fourth-order model comparison in dynamics, 10th International Conference on Computational Methods in Structural Dynamics and Earthquake Engineering, Rhodes, Greece, June 2025.
8. **L.Greco**, J. Kiendl, E. Maggiorelli, M. Negri, A. Patton and A. Reali, Benefits of high-order phase-field models in fracture mechanics, 1st joint GNCS-SIAM Chapters Meeting for Young Researchers in Numerical Analysis and Applied Mathematics, Pavia, Italy, February 2025.
9. L.Greco, A. Patton, **E. Maggiorelli**, M. Negri and A. Reali, AT1 high-oder Isogeometric phase-field modeling for brittle fracture, GIMC-SIMAI Young 2024, Naples, Italy, July 2024.
10. **L. Greco**, **M. Torre**, Towards adaptive phase-field modeling for high-order brittle fracture, 9th European Congress on Computational Methods in Applied Sciences and Engineering, Lisbon, Portugal, June 2024.
11. **L. Greco**, A. Patton, E. Maggiorelli, M. Negri and A. Reali, AT1 high-order Isogeometric phase-field modeling for brittle fracture, 9th European Congress on Computational Methods in Applied Sciences and Engineering, Lisbon, Portugal, June 2024.
12. **L. Greco**, A. Patton, A. Marengo, M. Negri U. Perego and A. Reali, A detailed study of high-order phase-field modeling for brittle fracture, XXIII Convegno Gruppo Italiano di Meccanica Computazionale, X Convegno Gruppo Meccanica dei Materiali, II Convegno Gruppo BioMeccanica, Reggio Calabria, Italy, July 2023.
13. **L. Greco**, A. Patton, A. Marengo, M. Negri U. Perego and A. Reali, A high order phase-field approach to the modelling of the brittle fracture mechanics via Isogeometric Analysis, IX International Conference on Isogeometric Analysis, Lyon, France, June 2023.

CONFERENCE COMMITTEES

1. Scientific committee of 1st joint GNCS-SIAM Chapters Meeting for Young Researchers in Numerical Analysis and Applied Mathematics, Pavia, Italy, 10-11 February 2025.

ORGANIZATION & CHAIR OF MINISYMPOSIA

1. Organizer of the mini-symposium: "Computational Approaches To Fatigue Crack Growth", within the 17th World Congress on Computational Mechanics - 10th European Congress on Computational Methods in Applied Sciences and Engineering (WCCM-ECCOMAS 2026), Munich, Germany, July 19-24, 2026.
2. Organizer of the mini-symposium: "High-Order Numerical Methods for Complex Mechanics and Higher-Order PDEs", within the 3rd GIMC-SIMAI Young, Pisa, Italy, June 03-05, 2026.
3. Organizer and chairman of the mini-symposium: "High-order and advanced discretization methods for complex problems", within the 8th European Congress on Computational Methods in Applied Sciences and Engineering Young Investigator Committee (EYIC 2025), Pescara, Italy, September 17-19, 2025.
4. Chairman of the mini-symposium: "Cardiovascular tissues: from the characterisation to the modelling", within the 8th European Congress on Computational Methods in Applied Sciences and Engineering Young Investigator Committee (EYIC 2025), Pescara, Italy, September 17-19, 2025.

ORGANISED COURSES AND SEMINARS

1. Scientific Committee of the PhD course: "A first course on Git, GitLab, and TDD" held by Prof. Lars Radtke - University of Pavia, Pavia, Italy (March 2-6, 2026).
2. Scientific committee of seminar series: "METaL Seminars: Mathematical & Engineering Talk and Lecture" - University of Pavia, Pavia, Italy (November 2025 - present).
3. Scientific Committee of the PhD course: "Advanced Scientific Programming in Python" held by Dr. Jochen Hinz - University of Pavia, Pavia, Italy (March 10-14, 2025).
4. Scientific committee of seminar series: "PAV-IA" - University of Pavia, Pavia, Italy (October 2024 - July 2025).
5. Scientific committee of the course: "Introduction to Julia Programming for Data Science and Scientific Computing" held by PhD students M. Ghiotto and I. Bioli - University of Pavia, Pavia, Italy (October 2024 - January 2025).

INSTITUTIONAL ROLES

1. Member of the Y-SIMAI (Societa' Italiana di Matematica Applicata e Industuriale, Giovani) Committee - Italy (February 2026 - Present).
2. Member of the SIAM (Society of Industrial and Applied Mathematics) Student Chapter Committee - University of Pavia, Pavia, Italy (October 2024 - September 2025).
3. PhD Student Representative, Science Area Libraries Board - University of Pavia, Pavia, Italy (May 2022 - July 2024).
4. PhD Student Representative, Civil Engineering and Architecture Department - University of Pavia, Pavia, Italy (March 2022 - March 2024).
5. Master Student Representative on the Civil Engineering Review Committee - University of Pavia, Pavia, Italy (September 2020 - September 2021).

INVITED COURSES

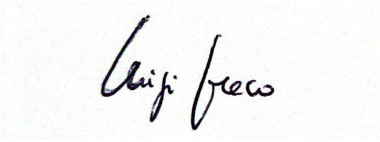
1. *From sharp to diffuse crack model: an introduction to phase-field models for fracture mechanics* - University of Rostock, Rostock, Germany (July 14-16, 2025).

TEACHING EXPERIENCE

1. Course instructor of "A first course on Git, GitLab, and TDD", held in collaboration with Prof. Lars Radtke, PhD transversal course at the University of Pavia, 4 ECTS - University of Pavia, Pavia, Italy (March 2-6, 2026).
2. Course instructor of Computational Mechanics Course, Master program of Risk of Seismic Engineering, 3 ECTS - University of Pavia, Pavia, Italy (November 2024 - present).
3. Teaching assistant of Computational Mechanics Course, Master program of Risk of Seismic Engineering, University of Pavia, Pavia, Italy (November, 2024 - December 2024).
4. Teaching assistant for Solid Mechanics Course, Civil and Environmental Engineering Bachelor Students - University of Pavia, Pavia, Italy (September 2023 - September 2025).
5. Teaching assistant for Dynamics of Structures Course, Master's in Civil Engineering, University of Pavia, Pavia, Italy (September 2021 - September 2025).
6. Teaching assistant for Finite Element Method Course, Civil and Environmental Engineering Bachelor Students, University of Pavia, Pavia, Italy (September 2020 - September 2024).
7. Teaching assistant in Chemistry for Engineering Bachelor Students, University of Pavia, Pavia, Italy (September 2017 - September 2021).

THESIS SUPERVISION

1. MSc Thesis Advisor: Herman Nguti Nubigha, *"Developing of 1D phase-field model for brittle fracture with focus on fatigue"*, MSc in Risk of Sysmic Engineering, Univeristy of Pavia, March 2026 - present.
2. MSc Thesis Advisor: Jonida Rrasa, *"Studio della frattura fragile mediante approccio phase-field e analisi agli elementi finiti"*, MSc in Civil Engineering, Univeristy of Pavia, Febbruary 2025 - December 2025.



Pavia, June 10, 2026