

M. Javad Beigrezaee

Ph.D. in Solid Mechanics and Structures

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Summary

Ph.D. in Solid Mechanics and Structures with expertise in computational modeling, lattice and composite structures, multi-physics simulations, and experimental validation. Skilled in Python, MATLAB, Julia, C++, HPC workflows, and PyQt GUI development. Experienced in integrating computational and experimental approaches for material and system optimization. Author of multiple peer-reviewed journal papers and international conference proceedings.

Research Interests

- Computational mechanics and finite element analysis of materials and structures
- Design and optimization of lattice and composite systems
- Molecular dynamics simulations and ML-assisted material design
- Experimental validation and prototype testing

Research Experience

- Overall 9 ISI journal papers, 2 papers under review, and 6 international conference proceedings.
- 2021–2025 **Doctoral Researcher (Ph.D.)**, *University of Trento, Italy*, Research and computational modeling
- Conducted simulations on lattice and composite structures for performance evaluation.
 - Designed and tested prototypes under controlled experimental conditions.
 - Developed parametric workflows for optimizing structural integrity and energy efficiency.
 - Implemented HPC-based frameworks for multi-physics simulations.
- 2019–2021 **Independent Researcher (Remote Collaboration)**, *Iran / International Collaboration*, Research projects
- Modeled thermally loaded porous materials and nanostructures.
 - Investigated heat conduction, mechanical stress, and defect sensitivity in 2D materials.
 - Contributed to publications on lattice and composite systems.
- 2017–2019 **Graduate Researcher (M.Sc.)**, *Iran University of Science and Technology*, Applied mechanics research
- Analyzed thermal and mechanical behavior of adhesive joints.
 - Correlated experimental results with FEA simulations.
 - Published in *Journal of Adhesion and Engineering Failure Analysis*.
- 2013–2017 **Undergraduate Research Assistant**, *Kermanshah University of Technology, Iran*, Computational mechanics
- Performed atomistic simulations of graphene sheets.
 - Developed skills in FEA, multi-scale modeling, and computational mechanics.

Education

- 2021 – 2025 **Ph.D. in Solid Mechanics and Structures**, *University of Trento, Italy*
Thesis: Mechanics of Lattice Functionally Graded Materials
Supervisor: Prof. Nicola Maria Pugno
- 2017 – 2019 **M.Sc. in Applied Mechanics**, *Iran University of Science and Technology, Tehran, Iran*
Thesis: Increasing the strength of single lap joints using adherend notching
Supervisor: Prof. Majid Reza Ayatollahi
- 2013 – 2017 **B.Sc. in Mechanical Engineering**, *Kermanshah University of Technology, Iran*
Thesis: Atomistic evaluation of stress concentration in graphene sheets
Supervisor: Prof. Seyed Kamal Jalali

Technical Skills

- FEM/CFD ABAQUS, ANSYS, COMSOL; multi-physics simulations
CAD SolidWorks, AutoCAD; parametric modeling
Programming Python, MATLAB, Julia, C++; HPC workflows; PyQt GUI
Experimental Prototype design, testing, sensor integration, data acquisition
Other Optimization, ML-assisted design, digital twin modeling

Languages

Persian (native), English (C1), Danish (A2), Italian (A1)

References

- Prof. Nicola Maria Pugno** — Solid and Structural Mechanics, nicola.pugno@unitn.it
Prof. Diego Misseroni — Solid Mechanics, diego.misseroni@unitn.it
Prof. Seyed Kamal Jalali — Mechanical Engineering, seyedkamal.jalali@iust.ac.ir
Prof. Majid Reza Ayatollahi — Mechanical Engineering, m.ayat@iust.ac.ir

Declaration

I confirm that all information provided is accurate and complete to the best of my knowledge.
I authorize the processing of my data for this application.

Horsens, Denmark
December 24, 2025

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