

# M. JAVAD BEIGREZAEI

## Mechanical Engineer — Industrial Design & Simulation

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## PROFILE

Mechanical engineer with broad experience in industrial design, structural analysis, and mechanical prototyping. Skilled at transforming engineering concepts into practical designs, optimizing components for manufacturability, and validating solutions through testing and simulation. Experienced in working with cross-functional teams and industrial workflows.

## SKILLS

### Mechanical & Industrial Design

- Mechanical assemblies, fixtures, and production equipment
- CAD: SolidWorks, AutoCAD, Autodesk Inventor; parametric modeling
- Design for manufacturability and industrial standards
- Prototype building, testing, and troubleshooting

### Engineering Analysis & Simulation

- FEA: ABAQUS, ANSYS; linear/nonlinear, metallic and composite structures
- CFD and thermo-mechanical simulations
- Structural integrity assessment and failure analysis

### Programming & Automation

- Python, MATLAB, Julia, C++; HPC workflows
- Automated simulation and optimization pipelines

### Other

- Familiar with basic CFD and heat transfer simulations for industrial components
- Ability to integrate modeling results into design decisions and prototyping
- Experience in technical reporting and documentation for team communication
- Collaborative work in multi-disciplinary teams

## EDUCATION

Ph.D., Solid Mechanics & Structures

University of Trento, Italy

2021–2025

M.Sc., Applied Mechanics

Iran University of Science and Technology

2017–2019

## EXPERIENCE

Mechanical Engineer / Ph.D. Researcher

University of Trento

2021–2025

Italy

- Designed and optimized mechanical components and assemblies for prototypes.
- Built and validated components in lab and industrial settings.
- Developed parametric workflows for simulation, analysis, and documentation.
- Collaborated with multidisciplinary teams for integration of designs.

Research Assistant / Engineer

Iran University of Science and Technology

2017–2019

Iran

- Analyzed and optimized structural components.
- Supported prototype testing and technical documentation.
- Coordinated with team members for manufacturability and feasibility.

## SELECTED PROJECTS

Industrial Design & Simulation Projects

Python, SolidWorks, COMSOL, ABAQUS

2019–2025

- Designed and validated mechanical assemblies and prototypes.
- Automated workflows for simulation, optimization, and documentation.
- Ensured manufacturability, robustness, and installation readiness.

Computational Fluid Dynamics (CFD)

ANSYS Fluent, COMSOL

3-month industrial experience

- Executed CFD simulations for flow, turbulence, and heat-transfer optimization.
- Developed reliable meshing and solver setups for complex geometries.
- Delivered performance evaluations and design recommendations based on simulation results.