Hamidreza Souzangarzadeh

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Google-Scholar

Linkedin

Github

ResearchGate

Qualifications

• **IELTS** Overall: **6.5** (Speaking: 6.0; Reading: 6.5; Writing: 6.0; Listening: 7.0)

• **GRE** Over all: **305** Verbal: 143, Quantitative: 162;

Hard Skills

- **Programming**
  - Python, Matlab
- **Machine Learning**
  - Regression, Neural Networks
- **Computer-Aided Design (CAD)**
  - Catia, SolidWorks, Freecad
- **Finite Element Analysis (FEA)**
  - ABAQUS
- **Operation Research**
  - Decision-making, Monte Carlo
- **Statistical Analysis**
- **Writing**
  - Main author of 3 publications, Using LaTeX

Soft Skills

- **Teamwork**
  - Worked in 3 research group
- **Communication**
  - Passed a Transactional Analysis Course
- **Critical thinking**
- **Time management**
  - Using GTD method

Education

Study

M.Sc. Mechanical Engineering *2014–2017* Azad University, Semnan, Iran
Applied Design

GPA: *18.4/20 (3.91/4)*
Thesis Topic: *Selection of optimum design for conical segmented aluminum tubes as energy absorbers: Application of MULTIMOORA method.*
Thesis Grade: *20/20*
Supervisor: *Dr. Mohammad Javad Rezvani*[1]
Advisor: *Dr. Ali Jahan*[2]

B.Sc. Mechanical engineering *2008–2013* Azad University, Parand, Iran

Selected Courses

- Continuum mechanics 4/4
- Engineering Design Methods 4/4
- Finite Element 4/4
- Advanced Robotic 4/4
- Mechanical Behavior of Materials 4/4

Other Courses:

- Programming (MATLAB and python)
- Machine Learning with Python (Coursera)
- Basic of AI & Image processing
- Transactional Analysis Training (TA)

Publications

Google Scholar: scholar.google.com/citations?user=HOgV0HMAAAAJ

First Author

2017 **H. Souzangarzadeh**, M. J. Rezvani[1], A. Jahan[2], *Selection of optimum design for conical segmented aluminum tubes as energy absorbers: Application of MULTIMOORA method,* Applied Mathematical Modelling. 51 (2017) 546–560.
doi | Decision-Making | FEA | Statistical Analysis | IF: 2.841 Q1

2020 **H. Souzangarzadeh**, Ali Jahan[2], M. J. Rezvani[1], Abbas S. Milani[3], *Multi-objective optimization of cylindrical segmented tubes as energy absorbers under oblique crushes: D-optimal design and integration of MULTIMOORA with combinative weighting,* Structural and Multidisciplinary Optimization. (2020).
doi | Multi-scenario Optimization | ML-Regression | DOE | IF: 4.105 Q1

2024 **H. Souzangarzadeh**, Ali Jahan[2], Mojtaba Shams Solari, M. J. Rezvani[1] *Selection of crash-box manufacturing process: Integration of ELECTRE-IDAT with Monte Carlo simulation (Under review).*
Materials and design selection | Uncertain data | Monte Carlo

Co-Author

2018 M. Razazan, M. J. Rezvani[1], **H. Souzangarzadeh**, *Evaluation of the Performance of Initiator on Energy Absorption of Foam-Filled Rectangular Tubes: Experimental and Numerical Assessment,* Experimental Techniques. 42 (2018). **doi**

2020 M. J. Rezvani[1], **H. Souzangarzadeh**, *Effects of triggering and polyurethane foam on energy absorption of thin-walled circular tubes under the inversion process,* Journal of Energy Storage. 27 (2020) 101071. **doi**

2024 M. J. Rezvani[1], **H. Souzangarzadeh**, *Performance of end-capped conical segmented tubes filled with foam under axial and oblique loads as an energy absorber.* Journal of the Brazilian Society of Mechanical Sciences and Engineering. **doi**

Professional Interests

- Product development
- Design engineering
- Operations Research
- Robotics
- Solid Mechanics
- Crashworthiness
- Numerical Modeling
- Machine learning
- 3D-printing

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Publications at a Glance

- **3 first-author publications:**
  - Structural and Multidisciplinary Optimization (2020),
  - Applied Mathematical Modeling (2017),
  - Under review
- **3 co-authored publications:**
  - Journal of Energy Storage (2020)
  - Experimental Techniques (2018)
  - Journal of the Brazilian Society of Mechanical Sciences and Engineering (2024)
- **Total citations:** 70
- **H-index:** 4

Reviewing Papers –

Elsevier Reviewer, Thin-walled structure, *2021*
Elsevier Reviewer, Ain Shams Engineering Journal, *2022*
Springer Nature Reviewer, Journal of the Brazilian Society of Mechanical Sciences and Engineering, *2024*

Hobbies

- Mountain Climbing
- Movie/Theater Going
- Playing Board Games

Academic Experience

Laboratory

Crash-Box Design and Evaluation *2016–2019* — Dr. Rezvani's Lab
- Developed, evaluated, and designed innovative crash-box concepts.
- Conducted various deformation analyses on crash-box prototypes.
- Simulated crash-box deformation behavior using advanced software tools.

Theoretical

Green Manufacturing Process Selection *2016–2019* — Dr. Jahan's Lab
- Successfully selected manufacturing processes under uncertain conditions.
- Utilized Monte Carlo simulations
- Gathered data on cost, time, and environmental impact during production.

Prototype Selection *2016–2019* — Dr. Jahan's Lab
- Explored multiple optimization scenarios to enhance crash-box designs.
- Developed decision-making techniques with different weighting methods
- Applied D-optimal Design of Experiments techniques
- Conducted Analysis of Variance (ANOVA) to analyze data and regression models.
- Collaborated with Dr. Milani from UBC

Work Experience

Tesching

Teaching Assistant *Since 2017* — IAU University
- Teaching: ABAQUS for the Finite Element Course
- Teaching Assistant: Mechanics of Materials

FEM with ABAQUS *Since 2015* — Private Tutor
- Basic FEM
- Static, Dynamic and Heat Transfer Analysis
- CAD and Meshing in ABAQUS

Full Parameteric Designing with CATIA V5 *2013-2018* — Private Tutor

DoE and Statistical Analysis with Design-Expert *May 2019* — Lecturer
- Three hours lecture

Mechanical Engineer

CAD Designer & Mechanical Engineer *since 2016* — Freelancer
- Surface Modeling of an Automobile interior design
- Designing and making Wooden Crafts with CATIA and Corel
- Mechanical modeling and analysis
- Providing handouts about metals and their market

Researcher at Dr. Ali Jahan's Lab *Since-218* — IAU University

Extra-Curricular Activities

DIY	Built a **3D printer** [link]
Designing	Designing and making fan-made Board Games with a laser-cut machine & 3d-printer