

# MOHAMMADHOSSEIN NAHAVANDIAN

PhD Student in Mechanical Engineering, Graduate Research Assistant

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## JOB EXPERIENCE

Industrial HVAC & Firefighting Systems Specialist  
TAM co.

June 2020 – Nov 2021 Tehran, Iran

- Engineering design, installation, and inspection of industrial HVAC & Fire suppression systems, including exhaust, air conditioning, fire dynamic analysis and water sprinkler, high & low expansion foam, water mist, and clean agent gas systems. Based on the latest Standard codes like NFPA, B.S.

HVAC & Firefighting Systems Specialist  
Imen Gostar Tehran Pouya co.

May 2019 – May 2020 Tehran, Iran

- Engineering design of HVAC & Fire Extinguishing systems, including exhaust, fire dynamic analysis, and water sprinkler for residential and commercial buildings following Tehran fire department rules and NFPA codes.

HVAC Systems Specialist  
Tahviah Tehran co.

Sept 2017 – Nov 2018 Tehran, Iran

- Engineering design and parking Smoke Management Systems, including CFD simulation for fire dynamic analysis based on the NFPA standard.

## TEACHING AND RESEARCH EXPERIENCES

Graduate Research Assistant  
Department of Mechanical Engineering

Jan 2024 – present Clemson, SC, United States

- Project: Composition-Aware Microstructure Evolution and Strength Models for Irradiated Ferritic Steel, Funded by DOE
- Using Kinetic Monte-Carlo method and Phase Field Modelings

Graduate Lab Assistant – Section ME2220  
Department of Mechanical Engineering

Jan 2022 – Jan 2024 Clemson, SC, United States

- Teaching undergraduate-level lab experiments

University Lecturer  
Department of Mechanical Engineering

Dec 2014 – Jul 2017 Roozbeh University, Zanjan, Iran

- Teaching and advising Undergraduate level students

## MY PHILOSOPHY

“Science is the most precious thing we have (A. Einstein)”

## MOST PROUD OF

ME Excellence Award for Graduate Teaching Assistants 2024  
nominated by faculty & ME undergrad students

Graduate Travel Grant for MS&T2023 Conference  
Awarded by the Graduate Student Organization of Clemson University

Supplementary Travel Award for TMS2024  
Awarded by Clemson College of Engineering, Computing and Applied Sciences

Writing Across the Curriculum (WAC) Grad Fellow - Spring and Fall 2023  
Awarded by Pearce Center, Clemson University

## RESEARCH INTERESTS

- Computational Materials engineering
- Irradiation Damage
- Condensed Matter
- Complex fluids
- Computational Fluid Mechanics
- Multiphase flows
- Hydrodynamic stability analysis
- Fire protection system
- HVAC systems

## LANGUAGES

English Persian Azerbaijani

## Teacher Assistant

### Department of Polymer-Textile Engineering

📅 Dec 2016 – June 2020

📍 Amirkabir University of Technology, Iran

- Teacher Assistant for undergraduate level courses of Fluid Mechanics 1&2, Thermodynamics 1

## PUBLICATIONS (JOURNAL, CONFERENCE, AND POSTER)

- **M Nahavandian**, S Sarkar, S Bagchi, D Perez, E Martinez. (2024). From anti-Arrhenius to Arrhenius behavior in a dislocation-obstacle bypass: Atomistic simulations and theoretical investigation. Computational Materials Science, 239, 112954.
- S Sadralashrafi, **M Nahavandian**, D Neyens, B Knijnenberg, D Li. (2024). Promoting Eco-Friendly Space Usage in Activity-Based Workspaces through Eco-Feedback. Proceedings of the Human Factors and Ergonomics Society Annual Meeting. (Accepted for publication)
- **M Nahavandian** S Sarkar, E Martinez. (2024). "From anti-Arrhenius to Arrhenius behavior in a dislocation-obstacle bypass: Atomistic Simulations and Theoretical Investigation", TMS 2024, Annual Meeting and Exhibition, Orlando, Florida, USA, 2024 (Presentation)
- **M Nahavandian**, S Sarkar, E Martinez. (2023). From Anti-Arrhenius to Arrhenius Behavior in a Dislocation-obstacle Bypass, Materials Science & Technology Technical Meeting and Exhibition, Columbus, Ohio, USA, (Presentation)
- **M Nahavandian** and E Martinez. (2022). Role of Activation Entropy in Dislocation Dynamics. research fellows & all faculty conference & celebration RFAF2022 (Made in SC), Greenville, South Carolina, USA. (Poster)
- **M Nahavandian** and A Izadi. (2019) Numerical Simulation of Flow Hydrodynamic Around Dolphin Body in Viscous Fluid. Journal Of Marine Engineering. Research Paper vol. 15, no. 29, pp. 147-165. (Journal Article)
- M Saffar Avval, MR Eslami, N Zehtabiyani-Rezaie, **M Nahavandian**. (2019). Status of research in the field of engineering in Iran; With a focus on mechanical engineering. Iranian Journal of Engineering Education, vol. 21, no. 82, pp. 31-57. (Journal Article)
- S Sadralashrafi, SHR Pasandideh, ST AkhavanNiaki, **M Nahavandian**, (2018). The gardener problem with reservation policy and discount. Computers & Industrial Engineering. 123, 82-102. (Journal Article)
- **M Nahavandian**, M Pourjafar, K Sadeghy. (2018). Stability of Thixotropic Fluids in Pipe Flow. Scientia Iranica. vol. 25, no. 2, pp. 790-798. (Journal Article)
- **M Nahavandian**, H Khoramishad. (2016) Effects of geometry and material factors of adhesively bonded single lap joint on stress concentration. The International Conference on New Researches in Engineering Sciences, Tehran, Iran, 2016. (Conference Paper)

## SKILLS

### 💻 Software Skills

- Microsoft Office 2023: Word, Excel, Power Point, One Note.
- Python, MatLab, Bash, Wolfram Mathematica, and Fortran.
- AutoCAD, Ansys (Fluent, CFX, ICEM), SOLIDWORKS, AutoSPRONG, Fire Dynamic Simulator, and Pyrosim.

## EDUCATION

### B.Sc. in Mechanical Engineering

#### Iran University of Science & Technology

📅 Tehran, Iran, 2012

GPA: 3.30/4.00

### M.Sc. in Mechanical Engineering

#### University of Tehran

📅 Tehran, Iran, 2015

GPA: 3.50/4.00

### PhD. Student in Mechanical Engineering

#### Clemson University

📅 Clemson, SC, United States, 2022 - present

GPA: 4.00/4.00

## REFERENCES

### Dr. Enrique Martinez Saez

@ enrique@clemson.edu

- ✉ Associate Professor of Mechanical Engineering in Clemson University  
Clemson, South Carolina, 29634

### Dr. Atieh Moridi

@ moridi@cornell.edu

- ✉ Associate Professor of Mechanical Engineering in Cornell University  
469 Upson Hall, Ithaca, NY, 14853

### Dr. Blas Pedro Uberuaga

@ blas@lanl.gov

- ✉ Los Alamos National Laboratory  
New Mexico

## Soft Skills

- Strong communication and presentation skills.
- Excellent Multi-Tasking and self motivation.
- Inspiring leadership and coaching skills.
- Excellent problem solving skills.
- Teamwork and collaboration skills.

## SOCIAL NON-PROFIT ACTIVITIES

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- Communication director of the Clemson Iranian Students Organization (CISO) (Sept 2022 – Sept 2023).
- Graduate Student Council member at ME Department of Clemson University (MEGSC) (Sept 2023 – present).