Arash Jalil Khabbazi

PhD Student in Mechanical Engineering (2023—)
Purdue University
West Lafayette, IN, USA

Webpage
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Education

Purdue University, IN, United States 2023 — Present
Ph.D. in Mechanical Engineering — GPA: 4.0/4.0
Minor in Computational Science and Engineering (CSE)
Societies: American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE)

University of British Columbia, BC, Canada 2021 — 2023
M.S. in Mechanical Engineering — GPA: 4.0/4.0 (94%)
Thesis: *Mixing gaseous hydrogen into natural gas distribution pipelines*
Societies: Canadian Society for Mechanical Engineering (CSME)

University of Tabriz, EA, Iran 2016 — 2020
B.S. in Mechanical Engineering — GPA: 4.0/4.0 (19.12/20) — Summa Cum Laude
Societies: Mechanical Engineering Olympiad

National Organization for Development of Exceptional Talents (NODET), EA, Iran 2009 — 2016
Middle and High School Diploma in Mathematics and Physics
Societies: Astronomy Olympiad — NODET

Research Interests

Energy Systems — Hydrogen — Automation — Scientific Machine Learning — Smart Control

Publications

Journal Articles

1. **A. J. Khabbazi**, M. Zabihi, R. Li, M. Hill, V. Chou, and J. Quinn, "Mixing hydrogen into natural gas distribution pipeline system through Tee junctions," *International Journal of Hydrogen Energy*, 2024. *(doi.org/10.1016/j.ijhydene.2023.11.038)*.

Conference Proceedings

1. **A. J. Khabbazi**, M. Zabihi, R. Li, V. Chou, and J. Quinn, "Blending of Hydrogen into a Natural Gas Distribution Pipeline in British Columbia through a Tee Junction for Reducing GHG Emissions," *Canadian Society for Mechanical Engineering International Congress*, 2023, pp. 1–6. *(doi.org/10.17118/11143/20845)*.
2. **A. Khabbazi**, R. Li, and J. Quinn, "Green Hydrogen Supply to Urban Infrastructure and Buildings through Blending into the Existing Grid," *Canadian Society for Mechanical Engineering International Congress*, 2022, pp. 1–1. *(doi.org/10.7939/r3-3vbx-9f49)*.
3. **A. Khabbazi**, R. Li, and J. Quinn, "The Blending and Transmission of Hydrogen and Natural Gas in Transmission and Distribution Pipelines," *International Green Energy Conference (IGEC-XIII)*, 2021, pp. 1–1. *(Link)*.

Honors & Awards

Selected

- Best Paper Award at CSME 2023 International Congress. *(Certificate)*. CSME, 2023
- Best Presentation Award at CSME 2022 International Congress. *(Certificate)*. CSME, 2022

Others

- 4YF Offer ($100k) for PhD in Mechanical Engineering from UBC, Vancouver. UBC, 2023
- UBC Graduate Scholarship. MSc, 2022
- UBC Dean's Entrance Scholarship. MSc, 2021
- Merit-based Admission for MSc in Mechanical Engineering from Sharif University of Technology, University of Tehran, and University of Tabriz. BSc, 2020
- 1st rank in CGPA (4.0/4.0) among 124 students. BSc, 2016—2020

Teaching

- Engineering Analysis I (APSC172) — *Role: Tutorial instructor* MSc, 2021 — 2022
- Heat Transfer Applications (ENGR385) — *Role: Lab instructor* MSc, 2022 — 2023
- Fluid Mechanics II (ENGR310) — *Role: Lab instructor* MSc, 2021
- Thermodynamics II — *Role: Course support* BSc, 2020
- C Programming — *Role: Head TA* BSc, 2018 — 2019

Skills

- **Technical Software**: ANSYS Workbench, OpenFOAM, Tecplot, SOLIDWORKS, CATIA
- **Programming**: Python, C/C++, Matlab, EES, PyTecplot, Git, HTML
- **Frameworks**: NumPy, Pandas, SKlearn, SciPy, Matplotlib, Seaborn, TensorFlow
- **System**: Linux

Selected Courses

- **Thermal Sciences and Energy**:
  Distributed Energy Resources — Thermodynamics I&II — Refrigeration Systems — Power Plants — Heat Transfer I
- **Applied Mathematics**:
  Industrial IoT Implementation for Smart Manufacturing — Applied Machine Learning — Advanced Mathematics For Engineers And Physicists I&II — Numerical Computations
- **Fluids**:
  Computational Fluid Dynamics (CFD) — Fundamentals of CFD — Multiphase Flows — Turbulence — Fluid Mechanics I&II

Certifications

- **Supervised Machine Learning: Regression and Classification**. *(Certificate)*. Deep learning.AI
- **Introduction to Data Science in Python**. *(Certificate)*. Coursera
- **Applied Plotting, Charting & Data Representation in Python**. *(Certificate)*. Coursera
- **Python Data Structures**. *(Certificate)*. Coursera