Arash Jalil Khabbazi

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

Webpage
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Education

Purdue University, United States — 2023 — Present
Ph.D. in Mechanical Engineering

University of British Columbia, Canada — 2021 — 2023
M.Sc. in Mechanical Engineering — GPA: 4.0/4.0 (94%)
Thesis: *Mixing Hydrogen into Natural Gas Distribution Pipelines*

University of Tabriz, Iran — 2016 — 2020
B.Sc. in Mechanical Engineering — GPA: 4.0/4.0 (19.12/20) — Highest Distinction

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

Research Interests

Energy Systems — Hydrogen — Thermodynamics
Machine Learning — Smart Control — Buildings

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*, 2023. **Accepted**.

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. *(Link)*.
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. *(Link)*.
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

- **Thermo-fluids**:
  Thermodynamics I&II — Refrigeration Systems — Power Plants — Heat Transfer I — Multiphase Flows — Turbulence — Fluid Mechanics I&II
- **Computational/numerical**:
  Computational Fluid Dynamics (CFD) — Fundamentals of CFD — Numerical Computations
- **Applied Mathematics**:
  Applied Machine Learning

Certifications

- **Machine Learning**. *(Certificate)*. Deep learning.AI
- **Introduction to Data Science in Python**. *(Certificate)*. Coursera
- **Applied Plotting & Data Representation in Python**. *(Certificate)*. Coursera
- **Python Data Structures**. *(Certificate)*. Coursera