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 (UBC), 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

Thermodynamics — Energy Systems — Power Systems
High Performance Computing (HPC) — 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," Under Review, 2023.

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," in Proceedings of the Canadian Society for Mechanical Engineering International Congress, 2023, pp. 1–6.
2. **A. Khabbazi**, R. Li, and J. Quinn, "Green Hydrogen Supply to Urban Infrastructure and Buildings through Blending into the Existing Grid," in Proceedings of the 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," in Proceedings of the 13th International Green Energy Conference, 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