Arash J. 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
Adviser: Kevin J. Kircher @ Ray W. Herrick Laboratories

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*
Adviser: Sunny Ri Li @ TMMFL

University of Tabriz, Iran 2016 — 2020
B.Sc. in Mechanical Engineering — GPA: 4.0/4.0 (19.12/20) — Highest Distinction
Thesis: *Thermodynamic and Exergy Analysis of Double-pressure Kalina Cycle System (KCS) 11*
Adviser: S. Mohammad S. Mahmoudi

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 — 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," submitted on Jul 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.
   - ***Best** paper awardee.*
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).*
   - ***Best** presentation of the Advanced Energy symposium.*
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).*

Accomplishments

- 4YF Offer ($100k) for PhD in Mechanical Engineering from UBC, Vancouver. UBC, 2023
- Best Paper Award at CSME 2023 International Congress, *(Certificate).* CSME, 2023
- Best Presentation Award at CSME 2022 International Congress, *(Certificate).* CSME, 2022
- 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

- APSC172 — Engineering Analysis I, *Role: Tutorial instructor* MSc — Fall'21, Fall'22
- ENGR385 — Heat Transfer Applications, *Role: Lab instructor* MSc — Winter'22, Winter'23
- ENGR310 — Fluid Mechanics II, *Role: Lab instructor* MSc — Fall'21
- Thermodynamics II, *Role: Course support* BSc — Winter'20
- Computer Programming (C), *Role: Head TA* BSc — Fall'18, Winter'19, Fall'19

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