

# AYAAZ YASIN

Cincinnati, Ohio

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Education	PhD in Mechanical Engineering, University of Cincinnati, Cincinnati, OH	Fall 2024 - present
	MS in Aerospace Engineering, University of Cincinnati, Cincinnati, OH Thesis title: <i>Computational Modeling of Evaporation without Tuning Coefficients</i>	2024
	BS in Mechanical Engineering Technology, Minor in Mathematics, University of Cincinnati, Cincinnati, OH Senior project: <i>Aerodynamic Optimization of a Solar Car</i>	2022
Peer-Reviewed Publications	3. <b>A multiscale CFD model of evaporating Hydrogen menisci: Incorporating subgrid thin-film dynamics and in situ accommodation coefficients</b> <u>A. Yasin*</u> , S. Pakanati*, and K. Bellur   *equal contribution Fuels	Accepted
	2. <b>Computational modeling of evaporation without tuning coefficients</b> <u>A. Yasin</u> and K. Bellur Applied Thermal Engineering	2025 10.1016/j.applthermaleng.2025.126807
	1. <b>An investigation of phase change induced Marangoni-dominated flow patterns using the Constrained Vapor Bubble Data from ISS experiments</b> U. Chakrabarti*, <u>A. Yasin*</u> , K. Bellur, and J. Allen   *equal contribution Frontiers in Space Technologies - Microgravity	2023 10.3389/frspt.2023.1263496
Invited Talks	1. <b>Liquid-vapor phase change in aerospace applications</b> Seminar talk at the Dept of Aerospace Engineering, University of Cincinnati	11 Apr 2025
Conference Presentations	8. <b>Modeling Multiscale Oscillations in Thin Liquid Films</b> <u>A. Yasin</u> , U. Chakrabarti, and K. Bellur 11th ASTFE Thermal and Fluids Engineering Conference, Tempe, AZ	09-12 Mar 2026
	7. <b>Stability and Contact Line Dynamics of Evaporating Thin Liquid Films</b> A. Sarchami, S. Pakanati, T. Enam, <u>A. Yasin</u> and K. Bellur 11th ASTFE Thermal and Fluids Engineering Conference, Tempe, AZ	09-12 Mar 2026
	6. <b>Multiscale Oscillations in Thin Liquid Films</b> <u>A. Yasin</u> , U. Chakrabarti, and K. Bellur ASME International Mechanical Engineering Congress & Exposition, Memphis, TN	(poster) 16-20 Nov 2025
	5. <b>Exploring two-dimensional flows in evaporating thin films: A step towards a dynamic model</b> <u>A. Yasin</u> and K. Bellur 10th ASTFE Thermal and Fluids Engineering Conference, Washington, DC	09-12 Mar 2025
	4. <b>Modeling of evaporation in cryogenic fuels without tuning coefficients</b> <u>A. Yasin</u> and K. Bellur 35th NASA Thermal and Fluids Analysis Workshop, Cleveland, OH	26-30 Aug 2024

5. **Modeling evaporation without tuning coefficients**  
A. Yasin and K. Bellur 12-14 Apr 2023  
51st Midwestern University Fluid Mechanics Retreat, Rochester, IN
4. **A numerical study of coefficient-free kinetic evaporation modeling in liquid Hydrogen**  
A. Yasin, and K. Bellur 19-21 Nov 2023  
76th American Physical Society Division of Fluid Dynamics Annual Meeting, Washington, DC
3. **An investigation of Marangoni induced flow in Constrained Vapor Bubble ISS experiments**  
A. Yasin, U. Chakrabarti, K. Bellur, and J. Allen 13-15 Mar 2023  
50th Midwestern University Fluid Mechanics Retreat, Rochester, IN
2. **A CFD model of evaporation in liquid Hydrogen without the need for tuning coefficients** (poster)  
A. Yasin, and K. Bellur 20-22 Nov 2022  
75th American Physical Society Division of Fluid Dynamics Annual Meeting, Indianapolis, IN
1. **A solution to the 2022 AUVSI Student Unmanned Aerial Systems competition**  
A. Yasin, R. Gilligan, D. Heitmeyer, and K. Cohen 23 Mar 2022  
AIAA Region III Student Conference, Purdue University, West Lafayette, IN

<b>Honors and Awards</b>	<b>Prof Kirti Ghia Fellowship</b>	2025
	Awarded by the UC Dept of Mechanical Engineering for CFD-related research.	
	<b>Excellence in Teaching Award – Honorable Mention</b>	2024
	Awarded by the University of Cincinnati Graduate College	
	<b>Travel Grant – American Physical Society</b>	2023
	Funding to present at the Division of Fluid Dynamics annual conference.	
	<b>Graduate Assistant Scholarship</b>	2023, 2024
	Awarded by the UC Dept of Engineering and Computing Education	
	<b>P&amp;G Simulation Center Student Support Scholarship</b>	2022
	Partial graduate funding	
	<b>Graduate Incentive Scholarship</b>	2022 - 2024
	Partial graduate funding by the UC Dept of Aerospace Engineering	
	<b>Several conference travel awards</b>	2022 - 2024
	Awarded by the UC Graduate College	
	<b>Undergraduate Research Fellowship</b>	2022
	Awarded by the UC Office of Research	
	<b>Outstanding Senior Award</b>	2022
	Awarded by the UC College of Engineering and Applied Science	
	<b>UC Global Outreach Scholarship</b>	2015
Awarded by the University of Cincinnati		

<b>Teaching Experience</b>	<b>As instructor of record</b>	
	4. MET 5036L: Thermal Environmental Systems & Heat Transfer Lab	Spring 2026
	3. MET 4076: Applied Computational Methods (Lecture & Lab)	Spring 2025
	2. ENED 1120: Foundations of Engineering Design Thinking II	Spring 2024
	1. ENED 1100: Foundations of Engineering Design Thinking I	Spring 2023, Fall 2023

**As teaching assistant**

2. ENED 1120: Foundations of Engineering Design Thinking II
1. ENED 1100: Foundations of Engineering Design Thinking I

Spring 2022  
Fall 2020, Fall 2021

**Mentoring & Supervision**

- Current students: Saaras Pakanati (undergraduate)
- Served as mentor for students in the First-Year Engineering Program, 2023-2024.
- Supervised a team of six undergraduate and two graduate teaching assistants, 2023-2024.

**Professional Experience**

**Graduate Student and Research Assistant,** 2022 - present  
UC Lab for Interfacial Dynamics, advised by Dr. Kishan Bellur  
Dept of Mechanical & Materials Engineering, University of Cincinnati  

- Investigation of phase change driven oscillations in liquid thin films.
- Modeling acoustic propagation in the ISS Flow Boiling & Condensation Experiment.
- Development of a tuning coefficient-free computational model of evaporation.
- Computational investigation of phase change driven surface-flow phenomena in microgravity using data from ISS Constrained Vapor Bubble experiments.

**Instructor**

Spring 2025, Spring 2026

Dept of Mechanical & Materials Engineering  
University of Cincinnati, Cincinnati, OH

**Instructor**

Fall 2023 - Spring 2024

Dept of Engineering & Computing Education  
University of Cincinnati, Cincinnati, OH

**Research Assistant, P&G Digital Accelerator**

Fall 2022

Dept of Mechanical Engineering, University of Cincinnati, Cincinnati, OH  
in collaboration with The Procter and Gamble Company.  

- Implementation of genetic algorithms for computing *arbitrarily oriented bounding boxes*.

**Student Worker, Ohio Innocence Project**

Summer 2022

University of Cincinnati, Cincinnati, OH

Product Development Engineering Co-op  
**GMi Companies**, Lebanon, OH

Spring 2021 - Summer 2021

Manufacturing Engineering Co-op  
**Regal Beloit Corporation**, Florence, KY

Spring 2019, Fall 2019

Research and Development Intern  
**3D Paradise**, New Delhi, India

Spring 2018 - Summer 2018

Engineering Intern  
**Shaperjet**, New Delhi, India

Spring 2017 - Summer 2017

**Computer Skills**

Programming: MATLAB, C, C++, Python, VBA, HTML, Bash, Git/GitHub, L<sup>A</sup>T<sub>E</sub>X.  
Modeling: Ansys Fluent, OpenFOAM, SolidWorks, Star CCM+, Simcenter 3D, COMSOL Multiphysics, LabVIEW.