Saaras Pakanati

Cincinnati, Ohio, USA

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Education

University of Cincinnati, Cincinnati, Ohio — August 2021 - Present
B.S. in Mechanical Engineering
Minor in Mathematics
GPA 3.95/4.00

Research Interests

Computational Fluid Dynamics, Multiphase Flows, Machine Learning, Data Driven Modeling

Research Experience

Undergraduate Research Assistant — August 2024 - Present
UC Lab for Interfacial Dynamics, advised by Dr. Kishan Bellur
Dept. of Mechanical & Materials Engineering, University of Cincinnati

- **Numerical & Experimental study of multiphase interfaces and associated phenomenon.**
  - Modeled multiscale cryogenic fuel evaporation using custom UDFs in ANSYS Fluent.
  - Designed & built an interferometry setup to study instabilities in liquid thin films.
  - Assisting in the study of the effect of temperature-sensitive surfactants on interfacial dynamics.

Peer-Reviewed Publications

1. A. Yasin*, **S. Pakanati***, K. Bellur, *A multiscale CFD model of evaporating Hydrogen menisci: Incorporating subgrid thin-film dynamics and in situ accommodation coefficients*, Fuels, 2025 (Accepted) ‖ *equal contribution

Conference Presentations

2. A. Sarchami, **S. Pakanati**, T. Enam, A. Yasin, K. Bellur, *Stability and Contact Line Dynamics of Evaporating Thin Liquid Films*, 11th ASTFE Thermal and Fluids Engineering Conference, Tempe, Arizona, March 9 – 12, 2026

1. A. Sarchami, **S. Pakanati**, K. Bellur, *Dynamic Optical Measurement of Evaporating Liquid Films*, ASME International Mechanical Engineering Congress & Exposition, Memphis, Tennessee, November 16 – 20, 2025 (Poster)

Honors, Awards, and Fellowships

Armstrong Discovery Fellowship — 2025
Awarded by the Armstrong Institute for Space, Technology, and Research

Undergraduate Research co-op Fellowship (2×) — 2024–2025
Awarded by the College of Engineering and Applied Science

CEAS Annual Scholar - Undergraduate Research — 2025
Awarded by the College of Engineering and Applied Science

UC Mathematics Department Calculus Contest - Runner's Up — 2022
Awarded by Cengage Publishing & UC Department of Mathematical Sciences

CEAS International Outreach Scholarship — 2021
Awarded by the College of Engineering and Applied Science

University of Cincinnati Global Scholarship — 2021
Awarded by the University of Cincinnati

Teaching Experience

Grader — August 2025 - Present
Dept. of Mechanical & Materials Engineering, University of Cincinnati

- Course(s): MECH 2010 (Thermodynamics)
- Managed assignments and proctored exams for 150+ students.

Supplemental Review Session Instructor January 2023 - May 2025
University of Cincinnati Learning Commons

- Led in-class review sessions for Calculus I and II.
- Tutored students in 15 different Engineering, Mathematics, Physics, and Chemistry courses.

Industry Experience

New Product Development Mechanical Engineering co-op January 2024 - April 2024
MSA Safety, Cranberry Township, Pennsylvania

- Executed Finite Element Analysis in Ansys to validate design decisions for safety devices.
- Optimized prototype testing of Technology Readiness Level (TRL) 1 gas detection technologies by developing and applying Design of Experiments (DOE) methods using Minitab.
- Collaborated with Electrical and Software teams for cross-functional design.

Engineering co-op August 2022 - December 2022 & May 2023 - August 2023
Richards Industrials, Cincinnati, Ohio

- Tested critical load-bearing components using destructive and non-destructive methods.
- Created technical drawings for shop floor fixtures using SolidWorks, collaborating with machinists.
- Developed tools and reports for engineering calculations, process optimization, and quality analysis.

Software Intern June 2022 - July 2022
Visual Collaboration Technologies, Inc., Bengaluru, Karnataka, India

- Created a visualization tool for a CFD study using the dash framework in Python.
- Collaborated in an Agile development framework to code, following PEP8 standards.

Skills

Simulation: Ansys (Fluent, Static Structural, LS Dyna), Siemens simulation suite (Siemens NX, StarCCM+), OpenFOAM, ParaView, SolidWorks, LAMMPS
Programming: Python, MATLAB, C, C++, Bash, R Language, Minitab, LabView, LaTeX
Experimental: Optical interferometry, image processing and analysis, flow control, Semiconductor manufacturing, Design of Experiments

Certifications & Licenses

OASiS Foundations Program, *University of Cincinnati* – 2025 | link to certificate
MATLAB Fundamentals, *Mathworks* – 2023 | link to certificate
IBM Data Science Practitioner, *IBM* – 2022 | link to certificate
Six Sigma Yellow Belt, *The Council for Six Sigma Certification* – 2022 | Credential ID: h7L0bACNv5
NX – CAD Design Associate, *Siemens* – 2022 | Credential ID: 6763-164-884-2231

Extra-Curricular

President September 2021 - Present
Undergraduate Research Society, University of Cincinnati

- President (2025-26), VP (2024-25) and, Events Chair (2022-23 & 2023-24)
- Organized meetings with executive team; managing presentations and logistics for regular outreach.
- Gave multiple presentations on undergraduate research at university classes, general meetings, and academic organizations.

Volunteer Tutor October 2021 - December 2023
Bearcat Buddies, Cincinnati, Ohio

- Tutored students in the Cincinnati Public School system and assisted in the improvement of the content covered with the local in-charge.