

Aras Vakilimafakheri

(818) 406-2030 | arasvakili@gmail.com | in/aras-vakili | arasvakilimafakheri.com

EDUCATION

University of California, Irvine

Expected Jun 2027

- B.S. Mechanical Engineering, B.S. Aerospace Engineering – GPA 3.88
- Dean's Honors List: 8 Quarters | UC Regents' Scholarship Recipient

SKILLS

Software: Siemens NX/Teamcenter, Creo Parametric, Windchill, SolidWorks (CSWA Certification), FEA, SAP, MATLAB, Python

Fabrication: Manual Mill & Lathe, MIG Welding, FDM & SLA 3D Printing

General: FMEA, PFMEA, GD&T, DfM, DfAM, Farsi (Native)

PROFESSIONAL EXPERIENCE

ITT Inc. | Irvine, CA

Jun 2026 – Present

Manufacturing Engineering Intern

- Managed CAD models and production data using Creo Parametric, Windchill, and SAP
- Closed gaps in the site's 5S strategy by authoring a controlled SOP for fixture and tooling lifecycle, storage, and inventory, applying PFMEA throughout the process
- Developed Manufacturing Work Instructions for all additive manufacturing processes on-site
- Developed control documents for the UV and CO2 lasers used in precision cable production for military applications
- Curated a company-wide lunch-and-learn on design for additive manufacturing (DfAM)

PROJECT EXPERIENCE

UC Irvine Rocket Project, Liquids | Irvine, CA

May 2025 – Present

Project Manager & Test Program Manager (Previously Propulsion Engineer)

- Led a 30+ member interdisciplinary team developing UCI's second liquid bi-propellant rocket
- Oversaw component tests, cold flows, and engine hot-fires to validate propulsion performance
- Conducted root-cause failure analyses and implemented corrective actions after test anomalies
- Designed and validated a cascading K-bottle manifold, cutting cold flow and hot-fire test time by 50%
- Machined 3 custom manifolds, eliminating 30+ fittings to reduce leak paths
- Produced GD&T-compliant injector drawings in Siemens NX to improve manufacturability
- Developed a test procedure and P&ID to characterize injector performance and inform pressure tuning

UC Irvine Aeronautics, Dynamics, and Control Lab | Irvine, CA

Mar 2025 – Jun 2026

Undergraduate Research Assistant

- Developed a data-free PINN using the Principle of Minimum Pressure Gradient (PMPG) to simulate Poiseuille flow, matching analytical solutions
- Extended the PMPG-based PINN framework to model inviscid airfoil flow, predicting lift and circulation without pressure data
- Trained variational PINN models on UCI's HPC3 cluster using Python/JupyterHub to accelerate convergence

UC Irvine Solar Car | Irvine, CA

Jan 2025 – May 2025

Suspension Engineer

- Reverse-engineered double-wishbone suspension components via laser scanning and CMM to produce high-fidelity CAD models
- Led fabrication of key suspension elements, including a custom trailing arm and precision welding jigs

PUBLICATIONS

Elmaradny, A. A., **Vakilimafakheri, A.**, Abdelrazek, A. A., & Taha, H. E. (2026). *Neural-Network-Based Computational Framework for the Variational Theory of Lift*. AIAA SCITECH 2026 Forum. <https://doi.org/10.2514/6.2026-0590>

LEADERSHIP INVOLVEMENT AND ACTIVITIES

Tau Beta Pi (TBP) The Engineering Honor Society | Irvine, CA

Jan 2025 – Jun 2026

President (Previously Media Co-Chair)

- Led chapter operations and board initiatives while revitalizing the chapter's social media and website to boost visibility and engagement