Krinal Doma

US Citizen

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EDUCATION

University of Southern California Viterbi School of Engineering — Los Angeles
M.S in Aerospace & Mechanical Engineering (Dynamics and Controls); GPA: N/A — Jan 2024 - Dec 2025

Purdue University College of Engineering — West Lafayette
B.S in Aeronautical & Astronautical Engineering (Propulsion); GPA: 3.38 — Aug 2019 - Dec 2023
- Courses: Hypersonic Propulsion, Rocket Propulsion, Air-Breathing Propulsion, Gas Dynamics, Aerodynamics, Control Systems, Dynamics and Vibration

B.S in Honors Mathematics (Analysis); GPA: 3.53 — Aug 2019 - Dec 2023
- Courses: Honors Real Analysis, Algebra Honors, Complex Analysis, Linear Algebra, Differential Equations, Probability, Statistical Theory

SKILLS SUMMARY

Coding	ROS, Agile, MATLAB, Simulink, C/C++, Python, Javascript, HTML+CSS
Software	Autodesk CAD ,Inventor, ANSYS, X-FOIL, OpenFOAM, SOLIDWORKS, CATIA, LTspice, LabVIEW
Libraries	CEA, Simscape, Numpy, Pandas, Tensorflow, Fluent, Chemkin, Workbench, Cantera
Platforms	Linux, Windows, Arduino, Raspberry, AWS, Hardware
Soft Skills	Cross-Functional Collaboration, Leadership, Problem Solving,, Time Management, Communication

EXPERIENCE

University of Southern California, Data-Driven Dynamics Laboratory — Los Angeles
Graduate Research Assistant — Jan 2024 - Dec 2025
- Developed an Automated Workflow for OpenFOAM Simulation, improving scalability by 20 times
- Conducted In-depth analysis on Strohaul number vs Reynolds number for flow past a cylinder
- Developed neural networks and implemented algorithms for manifold detection to understand dynamics

Purdue University, Zucrow Propulsion Laboratory — West Lafayette
Senior Design Project Lead — Aug 2023 - Dec 2023
- Managed team to Design, Build, and Test a 15 kW Hybrid Turbojet Engine
- Created Preliminary System Design and Architecture
- Generated Subsystem Requirements for Voltage, Current, Temperature, and Ripple Current
- Generated Simulation of BLDC in Simscape to simulate Voltage output from electro-mechanical system
- Developed propulsive subsystem prototypes and conducted tests of a 120 mm 5kW EDF with 12S Lipo Battery with thermocouples and oscilloscopes

Purdue University, ASCENT 10 — Remote
Undergraduate Design Optimization Research — Jan 2023 - Dec 2023
- Leveraged computer science expertise to develop a web application for the FLEET codebase, a systems engineering multidisciplinary optimization tool for predicting emissions trends, using MATLAB App Designer and Python Flask.
- Designed a Full Stack development plan for FLEET and Delivered it to the Head of Aerospace Department
- Assisted in managing and troubleshooting FLOPS Design codebase for Ascent 10

Purdue University, Vertically Integrated Program — West Lafayette
Undergraduate Fluid Dynamics Research — Aug 2019 - Mar 2020
- Analyzed force vectors in a Homogeneous Isotropic Turbulent (HIT) Regime applying one-point flow statistics
- Collected relevant data using PIV software for modeling flapping flight in a turbulent flow

PROJECTS

HRETS-CEA — West Lafayette
MATLAB, CEA — Dec 2022 - Aug 2023
- Developed MATLAB code for calculating area and perimeter of a variable non-convex polygons
- Implemented MATLAB code for generating chamber pressure history of a hybrid rocket engine
- Integrated CEA Wrapper to facilitate Real gas behavior

Firefly, Lead Test Engineer, Co-founder — West Lafayette
Startup — Jan 2021 - Apr 2021
- Provided support to mechanical engineers with regard to aerospace design processes and product lifecycle
- Analyzed aerodynamic forces through Open FOAM software to approximate range and battery consumption
- Tested drone motors for lift torque to maximize power efficiency
- Tech: OpenFOAM, ANSYS & Ardupilot

HONORS AND AWARDS

Senior Honors Award - Apr 2023

Semester Honors - Fall 2019, Spring 2020, Fall 2022

Mensa 98 Percentile