

Kyle Spink

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EDUCATION

University of California, Irvine

Expected June 2027

Bachelor of Science in Aerospace Engineering

Irvine, CA

Bachelor of Science in Applied & Computational Mathematics

• **Relevant Coursework:** Fluid Dynamics • Thermodynamics • Dynamics • Partial Differential Equations • Mathematical Modeling • Programming for Engineers

• **Organizations:** American Institute of Aeronautics and Astronautics • American Society of Mechanical Engineers • UCI Math Community Educational Outreach

Other Relevant Coursework

- **University of California, Berkeley:** Linear Algebra & Differential Equations June 2023 – Aug. 2023
- **University of California, Santa Barbara:** Real Analysis • Complex Analysis Dec. 2021 – June 2022
- **Santa Barbara City College:** Statics & Strength of Materials • Discrete Mathematics June 2020 – Aug. 2022

EXPERIENCE

Undergraduate Research Assistant

Mar. 2024 – Present

Aeronautics, Dynamics, & Control Laboratory

Irvine, CA

- Integrating a physics-informed neural network (PINN) with the Principle of Minimum Pressure Gradient (PMPG) to perform computationally inexpensive fluid dynamics simulations (PyTorch)
- Coauthor of preprint titled *On Predicting Magnus Force with Gauss-Constrained PINNs* to be presented in the AIAA SciTech Forum

Engineering Intern

June 2023 – Sept. 2023

Heliospace Inc.

Berkeley, CA

- Programmed script to determine the time of deployment of a spacecraft boom given multiple input parameters (MATLAB)
- Modified the design of ground support equipment (GSE) in CAD and 3D printed the parts for more efficient stowing. (SolidWorks, Onshape, PrusaSlicer)
- Oversaw thermal vacuum deployment testing of multiple aerospace mechanism assemblies (LabVIEW)
- Performed quality inspection of various machined flight hardware parts (Excel)

Mechanical Design Intern

June 2022 – Sept. 2022

Enerpro Inc.

Santa Barbara, CA

- Member of Research & Development Team.
- Designed multiple mechanical prototypes of an AC-DC power converter used on locomotives (SolidWorks)
- Simulated electromagnetic noise to create an external cover that mitigates interference with electronic control circuits (SolidWorks Simulation Package)
- Completed trade study to assess complexity, cost, and ease of assembly of multiple prototypes and presented to colleagues at IRAD design review summary

PROJECTS

Dos Pueblos Engineering Academy (DPEA) Capstone Project |

Aug. 2022 – June 2023

SolidWorks, SW Simulation Package, Excel, PrusaSlicer

- Project lead of a three-axis robotic gantry
- Designed and manufactured parts for the multi-staged linear actuator sub-assembly
- Simulated loads on various parts to minimize mass while maintaining structural integrity

DPEA Kinetic Sculpture | *SolidWorks, C++*

Aug. 2021 – June 2022

- Designed the moire disks and created full assembly in CAD with BOM and part drawings
- Soldered electric components onto a PCB
- Programmed various sequences for the LEDs and motor using an Arduino

TECHNICAL SKILLS

Certified SolidWorks Associate in Mechanical Design • Proficient in Onshape—a cloud-based CAD platform • MATLAB • Python • C++ with Arduino • LabVIEW • HTML • CSS • \LaTeX