

# Kaleb Rice

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kalecreative.work/portfolio

## Education

**Portland State University** – Bachelor of Science in Mechanical Engineering September 2022 – Ongoing

GPA: 3.73

Expected Graduation: June 2027

Relevant Courses: Thermodynamics · Fluid Mechanics · Analysis of Mechanical Components · Properties of Materials · Manufacturing Processes · Vibrations & System Dynamics

## Skills

**CAD & Design:** Creo · SolidWorks (CSWA) · OnShape (COP) · Fusion 360 · Siemens Solid Edge

**Fabrication:** FDM & SLA 3D Printing · CNC Programming · Mill · Lathe · MIG / TIG Welding · Shop Tool Operation

**Software & Coding:** MATLAB · C++ · Python · Arduino / ESP32 Microcontrollers

**Additional:** Design for Manufacturing (DFM) · Geometric Dimensioning and Tolerancing (GD&T)

## Experience

**Machine Shop Technician, PSU Mechanical Engineering Lab Team (MELT)** October 2025 – Ongoing

- Trained students of various skill levels on safe operation of mills, lathes, welders, and other shop tools.
- Designed and fabricated equipment for raw material processing to improve production efficiency.

**Mechanical Engineering Design Intern (MECOP), Benchmade Knife Company** April 2025 – September 2025

- Designed 11 production-ready knife assemblies in Creo from concept to manufacturing, integrating DFM and material analysis principles.
- Researched and prototyped new compliant mechanisms, finishes, and manufacturing techniques to improve reliability and aesthetics.
- Used GD&T fundamentals to create detailed engineering drawings and tolerance analyses for production use.

**Lead Mechanical Engineer, Portland State Aerospace Society** February 2023 – March 2025

- Directed mechanical design for a \$200k open-source satellite communications station (UniCLOGS), collaborating with multidisciplinary teams.
- Modeled structural components and performed CFD-based wind-load simulations to validate city permitting calculations.
- Trained new colleagues in CAD best practices, documentation, and design reviews to ensure repeatable, manufacturable designs.

**CAD Drafting Technician, PSU Center for Life in Extreme Environments (CLEE)** April 2023 – October 2023

- Produced NASA-compliant CAD drawings for the ELVIS zero-gravity microscope mission to the International Space Station.

**Freelance Engineering, Kale Creative Works** December 2021 – Ongoing

- Provided nationwide CAD design, 3D printing, CNC programming, and prototyping services for individuals and small businesses.
- Managed full client lifecycle: concept development, design consultation, manufacturing coordination, and assembly support.

## Projects & Leadership

**Open-Source Plastic Scanner** October 2024 – March 2025

- Awarded \$1,000 PSU Cleantech Challenge grant to prototype a near-infrared spectroscopy system for plastic recycling and filament production.

**High School Makerspace Founder** May 2022 – Ongoing

- Established and led a community makerspace offering STEAM education and fabrication tools; annual exhibitor at the Portland Winter Light Festival.

**FIRST Robotics** September 2018 - February 2020

- Led the mechanical design of an omnidirectional drive robot and oversaw competition strategy.
- Returned as a volunteer judge in 2024 to supervise competitions and interview student teams.