

Caleb Young

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• **Portfolio:** https://cyoung604.github.io/cyoung_portfolio/

EDUCATION

Bachelor of Science, Mechanical Engineering (BSME)

Montana State University, Bozeman, MT

August 2022 - December 2026

3.22 GPA

Awards and Grants

Undergraduate Scholars Program Grant - Funded Experimental Fluids Research

Mark Cook Award for Undergraduate Research (2025-2026)

TECHNICAL SKILLS

Data Analysis: PIV testing, Fluid visualization(DaVis), MATLAB, LabVIEW

CAD and Prototyping: SOLIDWORKS, Fusion 360, 3D Printing(MakerBot Sketch)

Programming/Software: Python

Engineering/Hands-on: Construction tools, CNC Machining

PROFESSIONAL EXPERIENCE

Undergraduate Researcher - Experimental Fluids Lab, Montana State University - Bozeman, MT **June 2025 - May 2026**

- Executed 80 PIV test runs across 4 blade configurations (2 blade types × 2 angles), with 5 repeated trials at 4 positions per configuration, to evaluate hydrodynamic performance and flow structure.
- Performed motion analysis, blade calibration, and laser illumination alignment for submerged particle visualization using DaVis.
- Designed and 3D-printed modular test fixtures to support force measurements and sensor calibration, enabling repeatable alignment across multi-position test runs.
- Developed MATLAB analysis to post-process PIV velocity fields, including data import, filtering, numerical integration, and automated plotting to ensure consistent comparison across 80+ datasets.
- Presented monthly research updates and collaborated weekly with graduate researchers and faculty to refine test procedures, configuration spacing, and data-analysis methodology.

Ranch Hand - Wayne Ranch, Bozeman, MT

May 2024 - September 2024

- Supported framing and structural assembly operations, verifying dimensions and fit prior to installation to ensure build accuracy.
- Performed measurement and layout checks for roofing and framing components using tape measures and levels.

Landscape Construction Laborer - Greenhaven Construction, Ridgefield, WA

May 2023 - August 2023

- Assisted with landscape construction planning and site preparation.
- Utilized tools and machinery such as skid steers, mini excavators, and power hand tools.

Metal Grinder/Machinist - Samson Sports, Camas, WA

July 2021 - September 2021

- Supported Haas 5-axis CNC machining operations, assisting with setup, part handling, and post-machining finishing to specification.

Volunteer Work

Student Leader, Oaks International Campus Ministry

October 2023 - Present

- Organized and coordinated weekly studies; led group discussion and weekly presentations.
- Managed students with weekly meeting logistics.
- Developed leadership and public speaking skills with weekly group facilitation.

Work Crew, YoungLife

June 2022 - July 2022

- Developed teamworking skills while working in dining hall/kitchen operations at camp
- Assisted in managing food prep and shift scheduling