

JUSTIN WELLER

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EDUCATION

Oregon State University - 3.77/4.00 GPA - Honor roll

Bachelor of science (B.S.), Mechanical Engineering

Senior Undergraduate

September 2021 – Present

Corvallis, OR

EXPERIENCE

Reiter Engineering

Mechanical Engineering Intern

July 2024 – September 2024

Kirchanschöding, Bavaria Germany

- Designed suspension kinematics with NX Motion and Optimum K leading to Ideal motion ratios and damper movement.
- Developed front and rear suspension damper packages, defining space claims and demonstrating vehicle concepts.
- Packaged cooling systems components as well as portions of the air conditioning for easy assembly and maintenance
- Created integral structural components utilizing CFRP for enhanced performance and weight reduction.
- Developed multivariable solvers in Microsoft Excel for efficient suspension component design optimization.

Advanced Technology and Manufacturing Institute (ATAMI)

Research Assistant

Dec 2023 – July 2024

Corvallis, OR

- Refined a MATLAB machine learning model to better detect and rectify 3d printing defects in situ for DED and SLM printing of high entropy alloys.
- Developed a finely tuned impact system for measuring the resonant frequencies of SLM manufactured boring bars with internal mass damping decreasing run times by 230%.

LifePort

Mechanical Engineering Intern

June 2022 – August 2022

Woodland, WA

- Developed and refined 3D models and drafted revisions to meet company standards and adhere to ASME Y14.5-2009 industry guidelines.
- Proficient in end-to-end Modeling -> Assembly -> Drawing workflow, contributing to the successful execution of complex aerospace projects.

Oregon State University

Undergraduate Learning Assistant

April 2022 – June 2023

Corvallis, OR

- Lead CAD studio sections and graded a class of 80 students.
- Taught CAD studio course ensuring over 80 students can design parts utilizing professional CAD techniques and processes.
- Inspected student parts and assemblies for proper modeling techniques including fully defined sketches, proper use of global variables, and dimensional accuracy.

EXTRACURRICULARS

Global Formula Racing, Formula SAE Team

Vehicle Dynamics Lead

August 2024 – Present

Corvallis, OR

- Determination of 2026 vehicle parameter goals through collaboration with aerodynamics and chassis using NX motion in conjunction with a team-built MATLAB data analysis script.
- Developed a MATLAB script to perform chassis rigidity sensitivity analysis on the cars lateral load transfer distribution and roll rate.

Global Formula Racing, Formula SAE Team

Steering Lead

July 2023 – August 2024

Corvallis, OR

- Optimized the front suspension kinematics to eliminate a design failure from the previous year. This resulted in a reduction of steering torque while maintaining the desired camber gain through steering and vertical displacement.
- Designed and manufactured the steering system increasing driver comfort and feedback, decreasing system weight by 23%
- Conducted extensive testing and performance analysis of the steering system through MoTeC Data acquisition and Ansys FEA, ensuring reliability and safety under high-stress conditions.
- Collaborated with team members to integrate the steering system with other vehicle components, ensuring compatibility and overall performance enhancement.

TECHNICAL SKILLS

SolidWorks, Siemens NX, NX Motion, Autodesk Inventor, Fusion360, Onshape, RStudio, C++, Optimum G, Excel, MATLAB, Simulink, Simulation Tools, ANSYS, Altair, Attention to detail, Methodical, Formula Student, Vehicle Dynamics