RACE ROSS

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Mechanical Engineer

Mechanical engineer with hands-on experience in CAD, coding, prototyping, and volunteer engineering projects. Background includes working on various engineering projects, addressing customer needs while increasing accessibility and maintaining functionality. Experienced in creating functional prototypes, delivering technical documentation, and effectively communicating project details with customers and suppliers to ensure successful outcomes. Eager to expand skills under the guidance of experienced engineers.

SOFTWARE AND TECHNICAL PROFICIENCIES

Languages: MatLab/Octave, Python, G-code
CAD and FEA Software: Fusion 360, Solidworks, AutoCAD, Inventor
Data and Other Tools: Excel, GitHub, Visual Studio

PROFESSIONAL DEVELOPMENT

Fundamentals of Engineering (FE) Exam – Mechanical: Currently studying for the certification exam
Software and Other Training: Actively learning NX, CATIA, and ANSYS through self-study and online courses

PROFESSIONAL EXPERIENCE

Freelance for Timberline Automation and Control Co., Portland, OR **Spring 2025**
Mechanical Design Engineer

- Delivered mechanical design for an automated bottle return system under a tight development timeline
- Defined project requirements with the customer, including technical constraints and competitor analysis
- Created multiple CAD concepts in Fusion 360 to explore mechanical operation and review design directions
- Built and refined a working prototype to validate design decisions under real-world conditions
- Finalized system model in Autodesk Inventor, delivering complete engineering documentation and bill of materials
- Provided cost estimates for the production prototype as well as production volumes of 10 and 100 units

Freelance connected to Able Flight, Remote **Fall 2023 - Spring 2024**
Volunteer

- Designed and modeled hand-use-only flight controls using Fusion 360, specifically crafted for light aircraft to accommodate pilots lacking lower limb mobility
- Worked as part of a student engineering team to create a control system requiring minimal alteration to the aircraft structure and cockpit
- Developed the controls with minimal changes to the original flight control setup to facilitate obtaining a Supplemental Type Certificate from the FAA
- Communicated with both private pilots and the aircraft manufacturer to obtain necessary details and specifications concerning the aircraft

Right Footed Foundation, Tucson, AZ and Oshkosh, WI **Summer 2023**
Volunteer

- Assisted in the installation of a custom-designed automatic door opener system into a prototype aircraft for Jessica Cox's Impossible Airplane project
- Worked with my capstone team to ensure the capstone project functioned properly in the new prototype aircraft
- Presented the engineering aspects of the project to potential sponsors at the EAA AirVenture show, highlighting design challenges and its impact

Nordstrom Inc., Portland, OR **Fall 2018 - Summer 2023**
Logistics Team Lead

- Managed packaging and shipping of hazardous materials in compliance with company standards and current regulations, ensuring proper labeling and packing for carriers
- As team lead, scheduled and coordinated shipping carrier pick-ups and drop-offs, maintaining clear communication with team members, businesses, and customers
- Maintained tracking numbers, customer information, and carrier details in Excel, ensuring accountability and the accuracy of all shipping records

Form Forge, Oak Grove, OR **Summer 2018 - Fall 2018**
Internship

- Assisted with the maintenance and installation of mechanical systems, including a 5-axis robotic arm, at a large-scale 3D printing start up
- Contributed to the design of a machine that regulated the flow rate of plastic pellets, helping to ensure consistent and high-quality 3D prints
- Designed a tool holding platform for the tools used by the 5-axis robotic arm, improving efficiency and reducing the risk of accidents

EDUCATION

Bachelor of Science, Mechanical Engineering,
Oregon Institute of Technology, Graduated Winter 2024
Major GPA: 3.467

PROJECT EXPERIENCE

Capstone Project - RV-10 Aircraft Door Automation Redesign with Van's Aircraft Fall 2022 - Spring 2023

- Redesigned the RV-10 aircraft door for automated opening and closing, enhancing accessibility for pilots with physical disabilities
- Worked with Van's Aircraft and Jessica Cox to develop a solution that supports accessibility while ensuring secure door closure during flight
- Created a prototype that provided space and functionality to enable the expansion of safety features for the Impossible Airplane project
- Delivered a fully functional prototype, contributing to the development of Jessica Cox's accessible aircraft