

(307) 413 2616

MARY CLANCY

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Over five years refining and utilizing skills in the following:

Python

ROS2 | Java | Arduino | MATLAB | C#

Revit | Bluebeam REVU | CHVAC | HVAC Systems | MEP

LabView | MPLAB X IDE | Simulink | C | Embedded Programming | Mechatronics

SolidWorks Certified, CSWA 2021 | Model Based Systems Engineering (MSBE) | Confluence | Jira

Configuration and Data Management (CDM) | Kanban | DOORS | Cameo

Use, Storage, Maintenance of Hand Tools | Microsoft Office

Customer Optimization

HONORS, TRAINING, AND CONTINUING EDUCATION

B.S., M.S. Mechanical Engineering, Robotics, Controls, Data Science

May 2027

University of Utah

GPA: 3.8

- Minor: Computer Science
- Awards: Departmental Scholarship, 2023; Larry DeVries Endowed, 2023; Persephone Bakery Grant, 2022; Teton Pines Annual Student Scholarships, 2023; UROP stipend, 2023; Oblad Energy Endowed Scholarship, 2024; Hoeppner Endowed Scholarship
- Certifications: Machine Shop Basic (2023), Machine Shop Mill (2024), Machine Shop CNC (2024)

SPECIFIC RELATED ACCOMPLISHMENTS

Graduate Research Assistant – HGN Bionic Lab

Aug 2025 – May 2026

- Integrated inertial measurement units (IMUs) into our powered prosthetic ankle's sensor suite, implementing dead-reckoning position estimation and the VQF orientation algorithm to track limb pose in real time
- Interfaced the IMU with the existing microprocessor-based control system, enabling onboard pose data to inform control strategy decisions
- Developed control strategies for a powered prosthetic ankle to improve gait stability and user adaptability across walking conditions
- Integrated additional sensors into the existing prosthetic hardware infrastructure, expanding real-time data available to the control system
- Extended and refined existing biomechanical models to better characterize ankle dynamics during locomotion
- Implemented control and signal-processing changes at the microprocessor level, optimizing for low-latency embedded performance

Mechanical Engineering Intern, Colvin Engineering Associates, Salt Lake City, UT

May 2025 – Aug 2025

- Applied heat transfer principles to perform thermal load calculations using company-standard software for building HVAC systems
- Conducted psychrometric analysis to determine HVAC system component performance and space conditioning needs
- Designed air distribution systems, sized ductwork, located diffusers, and calculated pressure drops with considerations for comfort, sound, and vibration
- Designed heating and hydronic systems including piping layouts, terminal units, and water treatment components
- Assisted in the development of ventilation systems and ensured compliance with ASHRAE 62.1 for indoor air quality
- Created construction documents aligned with Energy Code and completed ComCheck documentation.
- Interpreted and coordinated structural and electrical drawings to ensure MEP system compatibility
- Estimated energy consumption of mechanical systems using spreadsheets and simplified methods
- Designed plumbing and natural gas systems, including routing, schematics, and connection detailing
- Ensured designs adhered to company standards and met regulatory compliance

Project Engineer, Northrop Grumman , Roy, UT

June 2024 – Aug. 2024

- Provided technical impact assessment, planning, and strategy for each change request (CR) in accordance with the Configuration and Data Management Plan (CMDM)

- Worked on allocation of system requirements to unit level, capability assessments, verification planning, and analysis planning and execution in a Model based Systems Engineering (MBSE) environment
- Planned and execute schedule for change package development and approval to meet mission needs, Project Dates, and Major Milestones / Key Events
- Experience with DOORS, Cameo, React, CPLM while translating those in detail design
- Collaborated across 3 Program Level Change Boards, 9 Engineering Review Boards (ERBs) to support CMDM execution
- Coordinated with Configuration Management organization to verify path forward for implementation.
- Coordinated, reviewed, and assessed CR impacts between Chief Engineers, Deputy Chief Engineers, IPTs, and Configuration Management Analysts to bring forth to board for implementation and execution
- Provided guidance and training to the Project Change Engineering (PCE) Team (5 Interns/New Hires)

U14 Alpine Ski Racing Coach/Dryland Training Coach, Rowland Hall St. Marks

Aug. 2021 – May 2023

- Developed workout and training sessions for middle school student-athletes weekly
- Built strong rapport with athletes, families, and coaches
- Earned certification to act on jury and board for competitions to act as a liaison for racing division championships

PHYSICAL DEMONSTRATION OF CONCEPTS

L3Harris Additive Manufacturing Depowderer – Team Lead

- Led a multidisciplinary engineering team through all phases of design, prototyping, testing, and final presentation
- Managed project scope, schedules, and team coordination to deliver a functional and validated solution
- Oversaw documentation, stakeholder communication, and final system integration

Legends of Zelda Mechatronics Robot

- Developed fully functioning autonomous robot fulfilling specified criteria and restrictions implementing range-finding sensors, line following sensors, color sensors, motor encoders, and optimized block placement strategy
- Lead a team of engineers through full design, manufacture, and assembly process
- Wrote and tested script for robot movement and functionality to increase accuracy by 65%

Avalanche Retrieval Robot - DARC Lab

- Formulated a research proposal and was selected from a competitive student pool for a robotics-focused project
- Developed a graduate level research paper in collaboration with members on the team to display location techniques for victims buried in an avalanche
- Developed a unique solution to locate buried avalanche victims utilizing transceiver devices on a ground robot through simulations and physical experiments
- Built an autonomous robot which successfully followed magnetic field lines to locate victim buried under the snow

Target Shooting Robot Competition

- Created an autonomous robot that positioned, calibrated, and projected 6 small objects in under 3 minutes
- Automated several sensors to navigate a horizontal track in Arduino C for improved accuracy and run-time
- Optimized robot design to navigate the course as fast as possible for a panel of judges and faculty

ADDITIONAL EXPERTISE

Chair and Committee Roles: University of Utah Nuclear Society.

Active Members: Young Engineers in ASHRAE (YEA), Society of Women Engineers (SWE), Society of Hispanic Professional Engineers (SHPE).