

Sam Westgard

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EXPERIENCE

Fillauer Motion Control

Research and Development Engineer

November 2024 – Present

Salt Lake City, UT

- Developed and tested a new hydraulic foot prosthesis, contributing to mechanical design, prototyping, and performance evaluation.
- Collaborated with internal engineering teams and external clinical partners to improve user experience, device reliability, and overall design.
- Supported in-clinic and take-home field trials, collecting user data and informing iterative design improvements.
- Presented engineering updates and design recommendations in weekly cross-functional and leadership meetings.
- Supported verification testing to ensure safety, durability, and regulatory compliance.

QXN LLC

Research and Development Engineer

October 2023 – November 2024

Salt Lake City, UT

- Led end-to-end development of innovative products, from concept to launch, ensuring alignment with market needs and profitability goals.
- Conducted design optimization experiments, analyzing performance metrics to drive product improvements.
- Sourced and managed manufacturing inventories to balance cost, quality, and timeliness, ensuring adherence to production schedules.

HGN Lab for Bionic Engineering

Graduate Research Assistant

May 2021 – June 2023

Salt Lake City, UT

- Developed a semi-active ankle prosthesis with an advanced control system using encoders and multiple sensors.
- Built closed-loop control systems using Simulink and LabVIEW.
- Optimized component design through kinematic simulations in MATLAB.
- Designed, machined, 3D printed, and surface-mount soldered components for robotic assistive devices, collaborating with cross-functional teams.

Ekso Bionics (ISO-13485)

R&D Co-op Engineer / Engineering Intern

Jan – Jul 2020, May – Aug 2019

Macedonia, OH

- Designed and tested various devices, including a cyclic loading machine, exoskeleton transmission tester, and an ankle-foot orthosis.
- Designed and tested biomechanical motion devices and test fixtures for robotic devices, streamlining the testing process.

EDUCATION

University of Utah

MS in Mechanical Engineering

Salt Lake City, UT

May 2021 – June 2023

Clarkson University

BS in Mechanical Engineering

Cumulative GPA: 3.93 / 4.0

Potsdam, NY

Sep 2016 – Dec 2020

PATENTS

- S. Westgard and W. Lee, "Air Circulation Fan and Lighting System" (Provisional)
- S. Westgard and R. Farris, "Biomechanical Motion Device for Human Gait Load Replication" (WO2022086498A1)
- L. Gabert, T. Lenzi, C. Buchanan, M. Tran, S. Westgard, "Semi-Active Ankle/Foot Prosthesis Powered by a Series-Elastic Actuator" (WO2023204982A2)

SKILLS

Technical Skills: Product Development, Electromechanical Systems, Robotics, Product Testing, CNC Machining, Regulatory Documentation, GD&T Drawings, Milling & Lathes

Software: SolidWorks, Mastercam, MATLAB, LabVIEW, Simulink