

Sean Thomas, Ph.D.

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EDUCATION

Sept. 2017 - Jan. 2022

PhD in Robotics, Control and Intelligent Systems

"Synthesis of Novel Integrated Actuators Powered by Shape Memory Alloys"

Prof. Yves Perriard, Integrated Actuators Laboratory

EPFL Switzerland

Sept. 2012 - Mar. 2017

Master and Bachelor of Science in Robotics and Autonomous Systems / Micro-Engineering - EPFL Switzerland

RESEARCH EXPERIENCE

Mar. 2025 - Present

Postdoctoral Scholar

Prof. Tyler Clites, University of California, Los Angeles (UCLA), USA

Implanted Orthopaedic Device for ACL Injury Prevention

Mar. 2024 - Mar. 2025

Postdoctoral Scholar

Prof. Xiaogang Hu, Penn State University, USA

Accessible Robotic Hand Orthosis for Stroke Rehabilitation

Mar. 2022 - Mar. 2025

Postdoctoral Scholar - Innovation Fellows Program

Prof. Jonas Rubenson, Penn State University, USA

Implantable Artificial Muscle for Gait Rehabilitation

Oct. 2016 - Mar. 2017

Masters Research Thesis

Prof. Etienne Burdet, Imperial College London, UK

Joint Impedance Measurement System for Patient-Specific Exoskeletons

Jul. 2016 - Oct. 2016

Research and Development Engineering Internship

Dr. Joachim v. Zitzewitz, Dr. Urs Keller, Onward Medical, Switzerland

Design and implementation of a Human Rehabilitation Robot

Jul. 2015 - Mar. 2016

Masters Research Assistant

Prof. Grégoire Courtine, EPFL, Switzerland

Sensor Design of Body Weight Support Robot for Rodent Rehabilitation

TEACHING EXPERIENCE

2018 - 2022

Undergraduate Teaching Assistant - Intro to Electrical Engineering

2018 - 2022

Undergraduate Teaching Assistant - Electromechanics Conversion

2018 - 2019

Graduate Teaching Assistant - Embedded Motor Control

2018 - 2022

Graduate Thesis Mentor - Robotics Masters Students

AWARDS AND HONOURS

Sept. 2024

Speaker at Action Club: Interactive Seminars in Motor Control & Coordination (Penn State University)

Jul. 2024

Selected as a Fellow in the 2024 Center for Medical Innovation Fellows Program (Penn State Huck Institute of Life Sciences)

Dec. 2023

Best Poster Award at 16th Annual Postdoctoral Research Symposium (Penn State University)

GRANT WRITING EXPERIENCE

Jan. 2018	Lead Grant Writer - Innosuisse - Swiss Innovation Agency (Awarded) Smart Grippers: Development of a Novel Type of Actuator based on Shape Memory Alloys (PI: Prof. Yves Perriard)
Jan. 2022	Grant Writer - Innosuisse - Swiss Innovation Agency (Awarded) Using Novel Technologies to Develop a Sensorless SMA actuator for Manufacturing (PI: Prof. Yves Perriard)
Aug. 2024	Principal Investigator - SNSF Postdoc.Mobility Fellowship (Submitted) Design and Evaluation of Assistive Robotics with Smart Materials and Neural-Machine Interfaces (Collaborators: Prof. Gregory Sawicki, Georgia Tech; Prof. Xiaogang Hu, Penn State)
Sept. 2024	Principal Investigator - American Heart Association Postdoctoral Fellowship (Submitted) Advancing Stroke Rehabilitation: A User-Centric Orthosis Using Shape Memory Alloys and Neural-Machine Interfaces (Collaborators: Prof. Xiaogang Hu, Penn State)

SKILLS

Python, C++, Objective C, Javascript, Java, HTML CSS, Matlab, 3D CAD, Altium PCB Designer, Finite Element Modelling, 3D Printing, Optimisation, LabView, Sensor Design, Analytical Modelling, Actuator Design, Latex

REFERENCES

Prof. Tyler Clites : clites@ucla.edu
Prof. Yves Perriard : yves.perriard@epfl.ch
Prof. Grégoire Courtine : gregoire.courtine@epfl.ch
Prof. Jonas Rubenson : jonas@psu.edu
Prof. Xiaogang hu : xxh120@psu.edu
Dr. Joachim v. Zitzewitz : joachim.vonzitzewitz@onwd.com