Ryan Slocum

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Education

ETH Zürich Sep 2024–Present
Master of Science ETH in Robotics, Systems and Controls *Zürich, Switzerland*

University of Colorado Boulder Aug 2020–May 2024
Bachelor of Science in Computer Science *Boulder, CO, USA*

- Graduated Summa Cum Laude with minor in Leadership Studies and certificate in Engineering Leadership
- Successfully defended thesis entitled *Direct Vision-Based SLAM for Environments with Onboard Illumination*

Relevant Coursework

ETH Zürich: Perception and Learning for Robotics, Machine Perception, Probabilistic Artificial Intelligence, Planning and Decision Making, Vision Algorithms for Mobile Robotics, Recursive Estimation, Computational Control
CU Boulder: Advanced Robotics, Machine Learning, Deep Learning and Neural Networks, Computer Vision

Experience

Software Engineer Intern May 2023 – Jul 2023
Outrider *Brighton, CO, USA*

- Led transition in firmware testing infrastructure from Robot Framework to Python
- Worked with Hardware-in-the-Loop tester to assess flaws in vehicle controller and monitor firmware

Robotics Intern May 2022 – Feb 2023
Company Six (Sphero spin-off) *Boulder, CO, USA*

- Managed development and user testing of CO6's consumer-facing iOS application as primary developer
- Contributed to C embedded software by developing and testing new robot behaviors
- Assisted in additional startup related tasks, including robot repair and wrangling, cloud back-end development, destructive mechanical testing, and recruiting

Software Engineer Intern May 2021 – Aug 2021
Accu-Precision *Littleton, CO, USA*

- Developed C# desktop applications to expedite manual entry process and save hours in inspection time each week
- Implemented post-processor safety measures in CNC lathes and mills to prevent costly machine crashes
- Improved operations efficiency through development of MySQL stored procedures aimed at tracking transparency

Research Assistant Feb 2022 – July 2022
University of Colorado *Boulder, CO, USA*

- Worked on NASA virtual reality project in a Bioastronautics lab to produce astronaut training simulation
- Developed player feedback menus in Unity and C# to collect player data
- Implemented server communication using MongoDB and Node.js for long-term data storage

Projects

Perception and Learning for Robotics Feb 2025 – Jun 2025

- Trained a deep learning model to predict Bird's Eye View representations of scenes around mobile robots from visual and LiDAR inputs.

CU Boulder Bachelors Thesis Aug 2023 – May 2024

- Title: *Direct Vision-Based SLAM for Environments with Onboard Illumination*
- Modified the *Direct Sparse Odometry* algorithm to include an onboard illumination model with the goal of enhancing visual robotic navigation in dark environments

Deep Learning Capstone Project Feb 2024 – May 2024

- Title: *Semantic Segmentation of Sugar Beet Fields with Pseudo-Attention Mechanisms*
- Competed in the *PhenoBench* Semantic Segmentation challenge by combining UNET-based CNNs with attention-based mechanisms