

Shosuke Miami

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EDUCATION

University of Washington - Seattle WA

Sep 2020 - Jun 2025

- B.S. in Mechanical Engineering, B.S. in Computer Science, B.A. in Mathematics (GPA: 3.99/4.00)
- Honors: Annual Dean's List, Phi Beta Kappa Academic Honor Society

SKILLS

- Hardware: Certified in SolidWorks (CSWA), Ansys, CNC Mill, Lathe, CAM, 3D Printing, PDM
- Software: Python, MATLAB, C/C++, Java, JavaScript, HTML/CSS, ROS, PyTorch, NumPy, Git

EXPERIENCE

Actuator Design Engineer - UW Formula Motorsports, Seattle WA

Mar 2023 - Present

- Designing and manufacturing the team's **first** autonomous steering actuation system (a brushless DC motor, planetary gearbox, and custom rack + pinion) that can deliver over **600 lb** of steering force.
- Analyzed steering potentiometer data and car kinematics, researched related work from **7** different teams, and examined **10+** design concepts to ensure optimal performance and unobtrusive integration.
- Machined parts on the 3-axis CNC Mill and Lathe with **100%** part acceptance and **0%** tool damage.

Robotics Researcher - Transformative Robotics Lab, Seattle WA

Oct 2023 - Present

- Co-developing a soft-body continuum catheter [surgical robot](#) for minimally invasive heart surgery.
- Designed and manufactured mathematically optimized compliant parts that improved our robot's maneuverability by **15 degrees**, reduced corkscrewing by **60%**, and increased extensibility by **10%**.
- Proposed a linearly driven design projected to eliminate **100%** of corkscrewing, improve controller reliability by **50%**, and reduce internal friction by **200%** over our current rotationally driven design.

Software Engineering Intern - Apple, San Diego CA

Jun 2023 - Sep 2023

- Built a GUI tool for generating [HTTP Live Streaming](#) playlists, reducing internal dev time by **200%**.
- Created a web service to inspect playlist errors improving internal/external dev time by another **50%**.

Robotics Researcher - WEIRD Lab, Seattle WA

Jan 2023 - Jun 2023

- Used generative models + imitation learning to improve a robot's success rate on new tasks by **40%**.
- Co-authored a [paper](#) that placed top **3%** and Best System Paper Finalist at the RSS 2023 conference.

Driverless Engineer - UW Formula Motorsports, Seattle WA

Jan 2023 - Mar 2023

- Led the development of planning/control algorithms including a custom pure-pursuit and PID controller [algorithm](#) that resulted in the team's **first-ever** successful autonomous lap completion.

Software Engineering Intern - Microsoft, Redmond WA

Jun 2022 - Sep 2022

- Developed a [Virtual Camera](#) that enables apps such as Teams and Zoom to access a larger selection of camera effects as well as a **20-70x** speed increase and **200 mW** power reduction in existing effects.

Computer Vision Researcher - Makeability Lab, Seattle WA

Sep 2021 - Jun 2022

- Co-authored a [paper](#) publishing the performance effects of filtered vs. unfiltered and single-city vs. cross-city training data and how our models can label new cities with a promising **80-90%** accuracy.

PROJECTS

Drawing Robot

Aug 2023 - Present

- Designing and manufacturing a four-bar linkage robotic arm that can draw any image of your choice.
- Uses a Raspberry Pi that runs custom edge-detection/segmenter algorithms and low-level controls.

DanceTime

May 2021 - Jul 2023

- Created a multiplayer [dance-based rhythm game](#) in C++ inspired by Just Dance and FaceTime.
- Built a custom **30 Hz** pose estimation library and an original regression-based scoring algorithm.

GeoKnowr

Nov 2022 - Dec 2022

- Used Google Street View API and PyTorch to develop the data collection, training, and evaluation pipeline for a lightweight [GeoGuessr AI](#) that can reliably guess within **2000 km** of the ground truth.