

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

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

EXPERIENCE

Suspension Engineer - UW Formula Motorsports, Seattle WA

Mar 2023 - Present

- Designing and manufacturing the team's **first** autonomous steering actuation system (a BLDC motor, planetary gearbox, clutch, ball screw, and actuator link) that can deliver over **670 lb** of steering force.
- Conducted data analysis and calculations 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

- Helping develop a soft-body continuum catheter [surgical robot](#) for minimally invasive heart surgery.
- Designing, prototyping, and validating geometric metamaterials, actuation mechanisms, and controls.

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 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.

AlphaFour

Jun 2022 - Jul 2023

- Developed an [AI](#) that learns how to play Connect 4 from **0%** to **90%** optimality via self-play deep reinforcement learning inspired by AlphaZero and can even generalize to other board games.

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.