

# 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, 3-D 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

- Leading the design, manufacturing, packaging, and testing of the autonomous driving mechanical systems including a custom gearbox to transmit torque from a stepper motor to the steering rack.
- Machined parts on the CNC Mill and Lathe with **100%** part acceptance and **0%** tool breakage.

### Robotics Researcher - UW WEIRD Lab, Seattle WA

Jan 2023 - Present

- Introduced generative models as an effective [data augmentation technique](#) for imitation learning, improving our depth camera + robotic arm's success rate on unseen manipulation tasks by **40%**.
- Co-authored a [paper](#) that placed top **3%** and Best System Paper Finalist at the RSS 2023 conference.

### Software Engineering Intern - Apple, San Diego CA

Jun 2023 - Present

- Building a tool to visualize [HTTP Live Streaming](#) validations improving development time by **30%**.
- Co-founded and pitched an Apple Pay feature that streamlines splitting bills with nearby contacts.

### Driverless Engineer - UW Formula Motorsports, Seattle WA

Jan 2023 - Mar 2023

- Led the development of control/planning algorithms including a custom pure-pursuit and PID controller [algorithm](#) that resulted in the team's **first-ever** successful autonomous lap completion.
- Used SolidWorks to design, analyze, prototype, and machine a mount for the steering stepper motor.

### 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.
- Designed a custom interpolation/blending algorithm and reduced its runtime from **80 ms** to **0.5 ms**.

### Computer Vision Researcher - UW Makeability Lab, Seattle WA

Sep 2021 - Jun 2022

- Co-founded an initiative to use [deep learning](#) for [automatic sidewalk accessibility evaluation](#).
- 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.

### 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.

### DanceTime

May 2021 - Jul 2023

- Created a multiplayer [dance/rhythm game](#) in C++ so you can dance off against your friends.
- Built a custom pose estimation library and an original regression-based numerical 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 **2,000 km** of the ground truth.