# Shosuke Kiami

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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**

- Leading the design and manufacturing of a driverless steering system (consisting of a stepper motor, custom planetary gearbox, and double-sided steering rack) with the goal of unobtrusive integration.
- 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**

- Built a GUI for generating HTTP Live Streaming playlists, reducing internal dev time by **200%**.
- Developed a tool to inspect playlist errors improving internal and external dev time by another **50%**.
- 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.

**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.