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, 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 a new data augmentation technique that leverages stable diffusion for imitation learning, improving our depth camera + robotic arm's success rate on unseen pick-place tasks by **49%**.
- 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**

- Leading 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 **Jun 2020 - Dec 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 classifiers can label new cities with a high **80-90%** accuracy.

PROJECTS

Drawing Robot **Jul 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 - Jun 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.