STEVEN OH

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EDUCATION

Waseda University Sep. 2022 – Sep. 2026 (expected)

- Bachelor of Engineering in Mechanical Engineering — GPA 3.95/4.00

PUBLICATIONS

[1] K. Yamane, C. C. Beltran-Hernandez, **S. Oh**, M. Hamaya, S. Sakaino. "Refinement of Accelerated Demonstrations via Incremental Iterative Reference Learning Control for Fast Contact-Rich Imitation Learning". *Under review at ICRA 2026.*

[2] **S. Oh***, T. Takahashi*, C. C. Beltran-Hernandez, Y. Kuroda, M. Hamaya. "CLAW: A Soft Wrist with Anisotropic and Selective Stiffness for Safe Robot Learning in Contact-rich Manipulation". *In submission to RAL.*

[3] **S. Oh***, Q. Cong*, W. Fan*, S. Luo, K. Althoefer, D. Zhang. "TacEva: A Performance Evaluation Framework for Vision-Based Tactile Sensors". *Under review at Advanced Intelligent Systems.*

[4] **S. Oh***, T. Inui*, M. Kuan*, J. Y. Lin . "MicCheck: Repurposing Off-the-Shelf Pin Microphones for Easy and Low-Cost Contact Sensing". *International Automatic Control Conference 2025, Oral.*

[5] **S. Oh***, T. Takahashi*, C. C. Beltran-Hernandez, Y. Kuroda, M. Hamaya. "Safe Robot Learning in Contact-Rich Manipulation via A Low-Cost Soft Gripper and Haptic Feedback Teleoperation". *CoRL Open Hardware Workshop, 2025.*

EXPERIENCE

OMRON SINIC X Corporation Oct. 2024 – Present

Robotics Research Intern with Dr. Masashi Hamaya

- **Imitation learning pipeline:** Developed data-collection and learning framework for contact-rich manipulation; designed bilateral teleoperation hardware and control system for position-controlled robot arm (patented).
- **Variable stiffness robot wrist:** Co-first-authored CLAW, a low-cost, variable stiffness robot wrist for contact-rich manipulation. Improves learning performance in peg-in-hole tasks, enhances teleoperation safety, and provides the ability to actively switch between three stiffness modes.

Sugano Lab, Waseda University Oct. 2024 – Present

Undergraduate Researcher with Prof. Shigeki Sugano

- **Hand–arm imitation learning:** Developed a hand–arm teleoperation system in ROS2 using a Manus glove and Allegro Hand, integrating the GELLO framework with GeoRT-based retargeting algorithms and ACT for policy learning.
- **Nail manipulation:** Collaborating with XELA Robotics to design a robotic fingernail with embedded magnetic tactile sensors and integrate it into a force-aware imitation learning framework.

Multi-Scale Embodied Intelligence Lab, Imperial College London Jul. 2024 – Sep. 2024

Visiting Student with Dr. Dandan Zhang

- **VBTS benchmarking:** Co-led TacEva, the first unified benchmarking framework for vision-based tactile sensors; validated the pipeline across four sensors through experimental setup, learning pipeline, and data analysis.

Tokyo Robotics Jul. 2023 – Jul. 2024

Software Engineering Intern

- **Motion planning:** Implemented inverse kinematics for a mobile manipulator in a MoveIt plugin and motion constraint database using MongoDB, both deployed in logistics robotics solutions at data centers and transport factories.
- **VLA finetuning:** Built data collection pipelines and performed VLA fine-tuning for bimanual pick-and-place tasks using Octo with AWS SageMaker and S3; work featured on the company's YouTube channel (video).

RIKEN CBS-TOYOTA Collaboration Center Jul. 2020 – Jun. 2022

Research Intern with Prof. Shingo Shimoda

- Developed a robotic pencil sketching system by processing internet images with vector-flow stroke generation; created control code for a robot hand using torque control and tactile feedback.

HONORS

1st Place, “Robot as an Unexpected Artist”, TEDx Speaker Competition	2025
Kawamori–Moto NEC Scholarship (Total of $10,000)	2023
Peace Bell University Entrance Scholarship (Total of $27,600)	2022
2nd Place, Purple Comet! Math Meet, Japan	2021
ETH Summer Fellowship Top 106 of 2000+ Applicant (Top 5 %)	2025

TECHNICAL SKILLS

Languages: English (Native), Mandarin (Native), Japanese (Business Fluent)
Robotics: UR5e, XArm, Piper, Allegro hand, Torobo Humanoid Robots
Tactile Sensors: GelSight, USkin, DIGIT, ViTacTip, MagicTac
Development: Python, ROS1/ROS2, Autodesk Fusion, PyTorch, ReactJS, LeRobot

TEACHING EXPERIMENCE

Introduction to Engineering, CAD and Robotics

Course Facilitator

- Developed course material for a 36-hour intensive class on engineering skills, CAD fundamentals, and robotics, covering topics such as finite element analysis, inverse kinematics, motion planning, and reinforcement learning; taught over 140 students in group-based sessions as of 2025.

Kuma Lab

Founder

- Founded a student-led community on robotics and AI; developed a full-stack community web platform from scratch using AWS, ReactJS, and MongoDB with Notion integration, featuring blog management, event creation, and role-based user privileges (link).
- Hosted workshops on “Introduction to Reinforcement Learning,” “Train Your Own GPT,” “Robotic Art,” and “Robot Learning”; organized live demos using LeRobot and designed algorithms for sketch generation with a 4-DoF Dobot robotic arm.

TEDx Waseda

Speaker

- Won top speaker among 15 contestants from Waseda University; invited to present at the official TEDx event and to be featured on the official TEDx YouTube channel.
- Delivered a 15-minute talk in front of 100+ audience on my experience merging robotics with art, accompanied by a live demonstration of a robot arm sketching artwork using custom vectorization algorithms.