Marika Nishi

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EDUCATION

University of Pennsylvania, Philadelphia, PA, United States
Master of Science in Engineering, Robotics | GPA: 3.90/4.0 *May 2026*

University of Tokyo, Faculty of Engineering, Bunkyo, Tokyo, Japan
Bachelor of Engineering, Mechanical Engineering | *GPA*: 3.64/4.0 *March 2022*

SKILLS & RELEVANT COURSEORK

Programming: ROS, ROS2, C++, Python, Pytorch, Matlab, Arduino IDE
Software: CAD (Autoware, SolidWorks), Simulator (CoppeliaSim, Simulink)
Sensor Usage: LiDAR, RGB camera, IMU, RTK-GPS, low-accuracy GPS
Other Technical Skills: Perception, Kalman Filter
Languages: English, Japanese

Relevant Coursework: Machine Perception (*Prof. Kostas*); Computer Vision (*Prof. Jianbo*); Machine Learning (*Asst. Prof. Jacob*); F1/10 Autonomous Racing Cars (*Asst. Prof. Rahul*); Automotive Engineering (*Prof. Shino*); Learning in Robotics (*Asst. Prof. Pratik*); Advanced Robotics (*Prof. Camillo, Dr. Jimmy*); Dynamics and Control (*Prof. Nakano, Prof. Yamasaki*)

RELEVANT EXPERIENCE

BOSCH | *Software Intern*, Tsuzuki, Kanagawa, Japan *August 2023 – September 2023*

- Designed and built app in Matlab to enhance autonomous driving by visualizing key information, such as routes and vehicle state; discovered bug in BOSCH's software by signal analysis; highlighted **coding** and **rapid development**
- Presented to approx. 100 employees, including managers, showcasing **public speaking** and **presentation** skills
- Communicated with international colleagues from 10 countries, demonstrating **cross-cultural teamwork**

DMG MORI | *Industrial Practices Intern, Additive Manufacturing R & D*, Iga, Mie, Japan *August 2021 – September 2021*

- Monitored and analyzed performance tests of additive manufacturing machines, leveraging **troubleshooting** skills
- Investigated additive manufacturing methods, e.g. 3D printing; proposed innovative solutions to technical challenges
- Translated and summarized English academic paper on additive manufacturing, effectively conveying key insights to the entire Additive Manufacturing Department, showcasing **analytical** and **communication** skills

PROJECTS

Research of Traffic Collision Prediction System | *C++, ROS, Extended Kalman Filter, Sensor Utilization* *April 2022 – March 2023*

- Designed and built collision prediction system among pedestrian, cyclist, and intelligent wheelchair
- Wrote C++ ROS codes that detected pedestrians and cyclists based on LiDAR data; demonstrated expertise in **robot perception** and **data-driven research implementation**
- Applied Extended Kalman Filter to estimate pedestrians and cyclists' positions; exhibited proficiency in **sensor fusion**
- Operated RTK-GPS, low-accuracy GPS, LiDAR, and IMU to collect and integrate data into system development; showcased **hands-on** expertise in **sensor calibration**, **data acquisition**, and **analysis**

Teleoperated Santa Robot| *Arduino IDE, Hardware Design, Soldering, Leadership* *October 2021 – January 2022*

- Led 4-person team to design and build teleoperated Santa robot to distribute presents to miniature houses; applied expertise in Arduino, soldering, data transmission, and hardware implementation; created presentation video to highlight final product; demonstrated **leadership**, **technical project management**, and **creativity** skills

Sushi-Making Robot |*CAD, Inventor, 3D Printer Operation, Robot Simulator, CoppeliaSim, Arduino IDE* *October 2021 – January 2022*

- Designed and built sushi-making robot with CAD, 3D printer, simulator and Arduino; won first place in 'Best Gripper', Best Master Design', and 'Smoothest Teleoperation'; highlighted **hardware and software integration** and **teamwork**