Yong-Sung Masuda

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Education

University of Hawaii at Manoa

M.S. Computer Science (2025)
B.S. Computer Science (2024)

- GPA: 3.95, Dean's List (6 semesters)
- Treasurer, UH Ballroom Dance Club (2022–Present)

Publications

Micromachines Journal, MDPI
Sep 2025
High-Throughput Evaluation of Mechanical Exfoliation Using Optical Classification of Two-Dimensional Materials

- Co-authored paper on GPU-accelerated software for classifying 2D materials from optical microscopy.
- Developed machine learning platform achieving 200× throughput improvement and 60× speed reduction.
- DOI: 10.3390/mi16101084

Electronics Journal, MDPI
Jan 2025
Accessible and Inexpensive Parameter Testing Platform for Adhesive Removal in Mechanical Exfoliation Procedures

- Co-authored paper detailing Arduino-powered testing equipment.
- Responsible for data validation, software integration, and technical drafting.
- DOI: 10.3390/electronics14030533

Experience

Computer Science Research Assistant (VNC Intern) — Naval Information Warfare Center
May 2024 – August 2025

- Developed experimental control software integrating Arduino, stepper motor drivers, and CLI for automated actuator positioning in mechanical exfoliation procedures.
- Developed GPU-accelerated unsupervised ML model for classifying 2D material structures from optical microscopy, processing thousands of images for experimental validation.
- Co-authored two peer-reviewed publications, contributing software development and technical figure generation.

Projects

Stereo Vision System for Autonomous Marine Navigation — Implementation & Comparative Analysis
M.S. Thesis Project

- Developed end-to-end stereo vision system integrating depth estimation and semantic segmentation for obstacle detection in autonomous marine navigation, deployed as containerized FastAPI service supporting ARM and x86 architectures.
- Implemented and compared two stereo depth estimation approaches (traditional OpenCV-based stereo matching and deep learning-based FoundationStereo) across 120 experimental conditions varying camera baselines, viewing angles, target distances, and checkerboard calibrations.

Mosquito Larvae Detection — YOLOv8 Object Detection
May 2023

- Developed a detection system using YOLOv8 and Python to identify larvae in lab imagery, aiding vector control research.
- Labeled datasets and tuned models via transfer learning, achieving F1 score of 0.94 with strong generalization on test data.

Technical Skills

Python, C, C++, C#, JavaScript, Java, SQL, Bash, React, MongoDB, Meteor, Git, GNU, Docker, Arduino, PyTorch, TensorFlow

Military Experience

Ground Radio Repair Technician — U.S. Marine Corps
Nov 2016 – Aug 2021

- Performed diagnostics and corrective maintenance on VHF/UHF/SATCOM radio systems supporting ground operations.
- Led a 5-8 person maintenance team, coordinating workflows and quality control to sustain tactical network capabilities.