MS or PhD Position in Ocean Instrumentation

Start Date: Fall 2026

Location: Department of Ocean Resources and Engineering, University of Hawai‘i at Mānoa

Compensation: Annual stipend plus tuition waiver pending project funding (TBD September 2025). Selected applicant will also be expected to apply for internal and external fellowships.

Project Overview: We are seeking a motivated MS or PhD student to join an interdisciplinary project focused on developing a compact **underwater video-audio array** for capturing synchronized optical and acoustic data from reef environments. The system will support the identification of species-specific fish vocalizations to build a curated sound catalogue for Hawaiian reef fishes. This project addresses the need for low-cost, scalable sensing hardware for coastal biodiversity monitoring.

The student will:

- Lead the development of an underwater video-audio array.
- Design a multi-channel audio analog-to-digital converter (ADC) board with a “HAT” (i.e., Hardware Attached on Top) footprint.
- Collaborate with an interdisciplinary team of engineers and computational scientists.
- Participate in bi-monthly public outreach at Hanauma Bay.
- Lead at least one peer-reviewed publication and present findings at national or international conferences.

Note, for this project, we will consider supporting a student through the graduate program based in the Department of Ocean Resources and Engineering.

The ideal candidate’s background will include:

- Bachelor’s degree in electrical engineering, mechanical engineering, ocean engineering, and/or related discipline
- Background in embedded hardware (e.g., Raspberry Pi and Arduino)
- Experience with printed circuit board (PCB) design
- Excellent coding skills in Python, C and/or Rust
- Excellent written and interpersonal communication skills
- Genuine interest in marine ecology/conservation/sustainability
- Interest in science communication or public outreach
- Nice to have: Experience with hydrophone arrays or underwater acoustics
- Nice to have: Experience working with optical imaging systems (i.e., cameras)
- Nice to have: Knowledge of digital signal processing, including detection and parameter estimation theory

To Apply: Please complete the interest form on the Marine Innovation Lab for Leading-edge Oceanography (MILLO) website: https://pagniello-lab.github.io/join-us.html by **September 1, 2025, at 5:00 PM HST.** Email inquiries will not be returned.