

Title: Enabling multi-modal mapping on Autonomous Surface Vehicles for Iceberg Sensing

Project description: Robotic Iceberg Sentinel (RISE) project is seeking an undergraduate student to work with the research team on integrating LIDAR systems on to an Autonomous Surface Vehicle (ASV) for iceberg mapping. The prospective student could choose to work on hardware or software based on the skills and interests. Field trials will be conducted in Narragansett Bay during this summer to demonstrate the LIDAR integration by mapping the foundation of the Newport Bridge.

This project must be done in-residence.

Preference/required skills:

Since the sensor integration needs multi-disciplinary skills, we have different skill requirements for the students selected in different tracks

- **Track-1:** hardware integration:
 - Experience in using CAD software, e.g., solid works and Fusion360, is required.
 - Have previously design mechanisms and mechanical parts.
 - Knows how to use basic machine shop tools, drills, mills, 3D printers and laser cutters.
 - Knowing electronics and have soldering experience will be a plus
- **Track-2:** Software integration:
 - Programming experience in C++ or Python. Experience in ROS will be a plus.
 - Have worked on single board computers, e.g., Raspberry PI computer, and familiar with Linux Operating system.

Mentors: Mingxi Zhou/Chris Roman

Prospective student is encouraged to contact me for more information regarding the project.