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Mechanical Engineering Seminar Series

Recent Advances in High Resolution Imaging and Mapping for Marine Robotics Applications

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Tuesday, November 16, 2021

Room 3150 DOW

4:00 p.m.

This seminar will also be streamed live at the following link

[ME Seminar Zoom link](#) (QR Code below)

Password 413824



Abstract

This talk highlights some ongoing work in high resolution imaging and mapping for marine and polar robotic applications. The overarching theme is that of considering the effects on SLAM frameworks of dynamic objects in visually degraded environments. Specifically we look at autonomy for autonomous surface vehicles (ASVs) following COLREGS, the role of light fields in robotic applications, and how one might measure melt rate on moving icebergs

over time. We highlight these efforts with data from field expeditions in the Greenland, the Arctic, and Antarctic. In addition, we examine the role of robotics for fisheries applications.

Bio:

Hanumant Singh is a Professor at Northeastern University. He received his Ph.D. from the MIT WHOI Joint Program in 1995 and then worked on the Staff at Woods Hole Oceanographic Institution until 2016 when he joined Northeastern. His research interests are in the area of field robotics with an emphasis on SLAM, imaging, and mapping, particularly in the marine, polar, and aerial domains.

His group has designed and built the Seabed AUV and the Jetyak Autonomous Surface Vehicle, dozens of which are in use for scientific and academic research across the globe. He also has strong interests in small Unmanned Aerial Systems (UAS). He has participated in 60 expeditions in all of the world's oceans in support of Marine Geology, Marine Biology, Deep Water Archaeology, Chemical Oceanography, Polar Studies, and Coral Reef Ecology.

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