

Post-doctoral research assistant position on high resolution 3D habitat mapping

The Opportunity

The Postdoctoral Research Assistant will join the 4D Oceans Research Lab in the School of Ocean Technology at the Fisheries and Marine Institute of Memorial University, St John's, Canada, and play a key role within the 'Benthic ecosystem mapping for sustainable ocean stewardship in a shifting ocean climate (BEcoME)' project. This role will focus on the development of classification approaches for ultra-high resolution 3D point clouds of complex underwater features and organisms (e.g. cold-water corals). New technologies such as structure-from-motion and color laser scanners have the potential to provide high resolution 3D representations of individual coral colonies whose growth could be monitored over time. Development of automated approaches for the classification of such data would expedite large surveys, and facilitating long-term monitoring. In addition, the Postdoctoral Research Assistant will have a unique opportunity to contribute to a planned Schmidt Ocean Institute expedition aimed at understanding the environmental drivers of vertical cliff ecosystems in the Galapagos. We are looking for applicants who have demonstrated experience and a good research track record in 3D point cloud processing, classification and interpretation for ecological purposes.

Responsibilities:

- Test new underwater remote sensing tools (e.g. structure from motion, RGB laser scanner) for species identification and survey of habitat quality
- Develop and apply 3D point cloud segmentation and classification approaches to produce robust 3D habitat maps of complex marine environments
- Participate in data collection operations
- Work collaboratively with researchers spanning a range of discipline to achieve a comprehensive understanding of the ecosystems studied
- Contribute to the development of graduate student thesis project in the field of seafloor and habitat mapping
- Contribute to the dissemination of project results (e.g., participation in scientific conferences, publication in peer-reviewed scientific journals, knowledge transfers with industry)

Your Application

To be successful in the role, your application will need to demonstrate;

- A PhD in seafloor mapping, remote sensing, geomatics, computer vision or which involved the significant use of 3D point clouds.
- A strong publication record in relevant fields, familiarity with ecological principles and/or the marine environment will be considered an asset.
- Experience with statistical approaches, machine learning techniques and programming languages
- A record of collaborative work on multi-disciplinary projects

Closing date: until fulfilled

Prospective start date: January 2022

Salary: 45,000 CAD

Duration: 2 years

To apply: Please send cover letter and CV to Dr Katleen Robert at Katleen.robert@mi.mun.ca