PROJECT DETAILS

Project Title:

Adaptive spatial machine learning approaches for robust marine ecosystem modelling in heterogeneous data-limited environments

Project Summary:

Marine ecosystems face severe threats especially from climate change, necessitating accurate modelling for effective conservation. However, marine research often encounters data limitations due to remote areas, high expedition costs, oceanic variability, and technological constraints. These factors create diverse, data scarce settings where traditional modelling methods often fail to yield useful insights. Adaptive spatial machine learning (ML) offers promising solutions to these challenges, capable of leveraging limited and diverse data to provide robust predictions. By adjusting to varying data availability, integrating diverse sources, and accounting for spatial-temporal dependencies, these approaches can enhance our understanding of marine ecosystems. Our work aims to develop novel spatial ML approaches for maximizing limited spatial data in marine ecosystem modelling and conservation.

Preferred Applicant Skillset:

The ideal candidate for this PhD project must possess a strong background in statistical data science, with expertise in developing spatial models. Proficiency in R and/or Python is essential. Demonstrate excellent organizational skills to manage complex datasets and research workflows. Strong problem-solving abilities are crucial for addressing the unique challenges of marine ecological modelling. A passion for marine conservation and an understanding of ecological principles would be highly advantageous.

Primary Contact:

Dr Ebenezer Afrifa-Yamoah

+618 6304 2133

e.afrifayamoah@ecu.edu.au