Augmenting Ocean Observing through Artificial Intelligence: Annotation, Data Standards, and Applications

Luke McEachron\textsuperscript{1}
David Kochan\textsuperscript{1}, Lauren Showalter\textsuperscript{2},
Steven Olthoff\textsuperscript{2}, Enrique Montes\textsuperscript{3}, Frank Muller-Karger\textsuperscript{4}, Dan Otis\textsuperscript{4}

\textsuperscript{1}Florida Fish and Wildlife Conservation Commission,
\textsuperscript{2}Axiom Data Science, \textsuperscript{3}University of Miami,
\textsuperscript{4}University of South Florida
Overview

- We use a lot of resources to quantify patterns from imagery, video, and acoustic data
- How do we build capacity and avoid duplication?

Goal: Build a SECOORA AI Gateway to help navigate the Marine AI Landscape

- Getting started
- Pathways to complementary resources
- Annotated data and labels
- Standards and metadata
- Worked case studies
Accomplishments

I. Is AI Right for My Project?
Navigate through the decision tree to identify the most suitable AI/ML approaches for your ocean science endeavors. Click on the nodes to expand more options.

II. Case Studies
- Coral Spawning
- Acoustic Classification
- Benthic Imagery

III. Community Resources
You can find additional AI resources in this directory continuously updated by the SECOORA community.
Looking Ahead

**Continued User Engagement**
- CVPR, Ocean Sciences, GEOBON, Imagery Workshop, Acoustics Workshops

**Beta Testing**
- Community access
- Behind the scenes links to AI repos (e.g., Fathomnet)

**Continued Use Case Development**
- Imagery (CoralNet), Video (In situ data buoy), and Passive acoustics
- Leveraged funding for anthropogenic noise AI model with NOAA IT incubator proposal