Capstone Project Post

What does the fish say - can ocean acoustic data help conserve and manage ocean resources?

Background & Qualifications:

We are a group of 4 people so far and are looking to expand the team for this Capstone Project! Our current experiences and expertise span across robotics and computer vision, carbon and biodiversity measuring & monitoring methodologies and environmental & social data.

Problem:

- Currently, ocean data is mostly accessible to a small, select scientific community
- The ocean data space is still in its infancy. There is a growing need to understand both the environmental conservation and economic opportunities that it can unlock
- Many stakeholders are seeking additional data sources to understand the impacts on biodiversity-rich areas. Methods of measuring and monitoring need to be explored

Solution:

This project will explore the opportunities of acoustic ocean data and ensure it fits within the fellowship time frame. This will include building out a model that could potentially be applicable to future use cases, e.g., informing fishing policies, help track endangered species, or monitor ecosystem health. Hence, the focus for the Capstone project will be:

“how can we apply AI/ML algorithms to classify and predict marine species to contribute to better marine resource management?”

There will be two main tasks at hand for this Capstone project:

1) Building an ML model to classify and predict marine species based on an acoustic dataset. We will be working with a dataset (that is already available to us) that includes data on three species.
2) Research on ocean acoustic applications: leading to presentation, report, website, TBD.

Needs:

We are looking for:

Data scientists, marine biologists, oceanographers or anyone with experience in ocean data collection, processing and analysis.

- Support in the analysis of the acoustic dataset and building model, particularly from those with experience in signal processing.
- Support in desktop research on ocean acoustic application.

Scope:

- Time dedication for the project is yet to be decided, looking for people with availability of around 4-5h per week.
- We will divide up groups to focus on the tasks, with the aim of having results from data analysis and a Minimum Viable Model in week 10-11 of the fellowship. Research to be ready for proofreading in week 10.
- Weekly meetings with whole group to present findings from data analysis / model development and research
- 1-3 meetings within task group or ad hoc to discuss more specific developments

Other:

- Feel free to reach out if interested, highlighting how you would like to contribute to the project. We will organize the first kick-off call in the week of 16th-20th of september.

Any feedback and questions are highly welcomed!