SPRINT 1
CAPSTONE

Presented by: Rodrigo Pelayo Ochoa

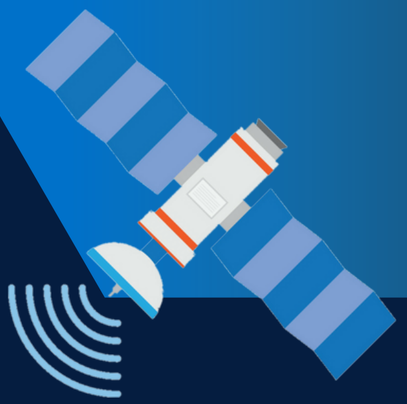
DETECTING ILLEGAL FISHING ACTIVITIES USING AIS DATA

The Problem area:

- Severe environmental impacts due to indiscriminate net fishing that catches all species.
  - Endangers ecosystems, economies, and species, and is linked to other illegal practices.
- Threatens the socioeconomic stability of many regions globally.
  - Particularly affects developing countries reliant on fishing for food
  - Estimated $34 billion annual economic loss globally due to IUU fishing.

THE SOLUTION

DATA SCIENCE

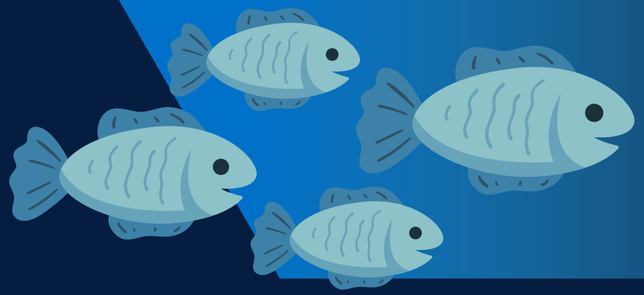


The approach:

- Develop a predictive model to identify illegal fishing activities.
- Utilize AIS (Automatic Identification System) data and related datasets.
- Focus on analyzing vessel behaviour to detect illegal activities.

Global Fishing Watch

THE IMPACT



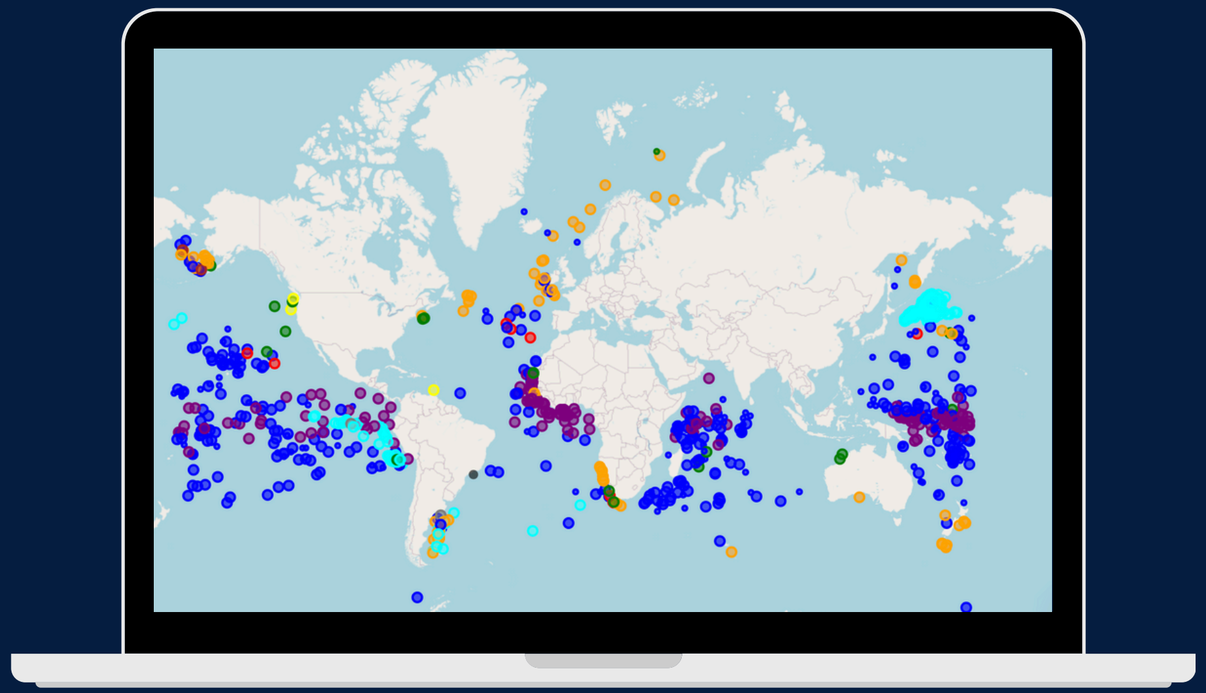
- **Protect and Conserve Marine Ecosystems:** Reduce **illegal fishing.**
- **Ensure Sustainable Fisheries:** Support the long-term sustainability of fish stocks by **reducing overfishing.**
- **Support Socioeconomic Stability:** Help communities dependent on fishing for their livelihoods by **ensuring legal and sustainable fishing practices.**
- **Global Cooperation:** **Foster international cooperation** in combating IUU fishing through shared data and insights.

THE DATA

Challenges:

- Creation of a Custom Data set
- Over 13 different Data Sets analyzed and 200 million Data points
- Main Source:

Global Fishing Watch



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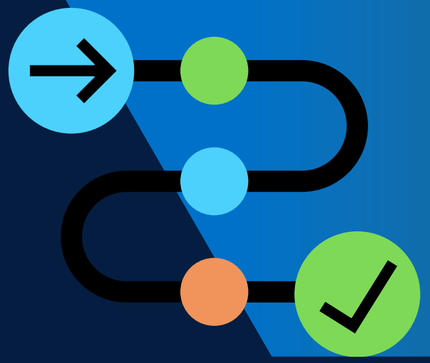
NEXT STEPS



- Implementation Steps
  - EDA and Data Preprocessing
  - Understand the data distributions and relationships.
  - Clean and preprocess the data.
  - Create new features to enhance model performance.
- Model Selection and Training
  - Split the data into training and test sets.
  - Train multiple models to compare performance.
- Model Evaluation
  - Evaluate models using metrics such as accuracy
  - Define hyperparameters to improve model performance.
- Reporting
  - Report and deploy the best-performing model for predictions.

THANK YOU

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