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Right Whale Recognition

Problem Statement

With fewer than 500 North Atlantic right whales remaining in the world's oceans, understanding the health and condition of each whale is crucial for researchers dedicated to safeguarding the species from extinction[1].
Presently, only a select few highly skilled researchers possess the ability to visually recognize individual whales while at sea[1]. However, for most researchers, identifying specific whales is a time-consuming process[1]. The existing identification method is excessively time-consuming and demands specialized training[1].

This Kaggle competition task challenges participants with automating the process of identifying right whales using a dataset comprising aerial photographs of individual whales[1]. Automating the identification of right whales would enable researchers to concentrate more effectively on their conservation endeavors[1].

To summarize, this is a computer vision classification problem that aims to correctly classify whale species i.e. creating a face detector for whales.

Rough workflow/plan structure

After performing the necessary preprocessing(image rotation/alignment, whale detection), I will train (most probably) a convolutional neural network to recognize the whale species.

Dataset

The dataset is taken from a kaggle competition – *"Right Whale Recognition - Identify endangered right whales in aerial photographs"*.

Measure/Evaluation

Since the evaluation for this competition was performed using multi-class logarithmic loss, I will follow the same.and it makes sense for this problem. (i.e. cross entropy to compare observed and actual predicted probabilities across different whale species)

Risk

Possible to run into computational limitations; will have to adapt model development strategy accordingly.

[1] Christin B. Khan, Shashank, Wendy Kan. (2015). Right Whale Recognition. Kaggle. https://kaggle.com/competitions/noaa-right-whale-recognition