Deep Neural Networks for Automated Detection of Marine Mammal Species

Tara Boroushaki

Ocean IoT class presentation
Why do we need to detect marine mammal species?

Helps us to manage human activities to preserve habitat quality

Collision with ships
Entanglement in fishing gears
Anxiety caused by Underwater noise
How can we passively detect marine mammal species?
How can we passively detect marine mammal species?
How can we passively detect marine mammal species?

Current classification methods have high false positives rate

The key idea of the paper is to use deep learning to get:
- High accuracy
- Low false positive rate
What is the input to the Deep Neural Network?

Spectrogram of the Whale call
Deep Network Architecture

Spectrogram of the Whale call

Convolutions

Max-pooling

Convolutions

Max-pooling

Full Connection

A whale

Not a whale
How does deep learning accuracy and false positive rate compare to the previous methods?