CLASSIFYING UNDERWATER PHOTOS WITH DEEP LEARNING

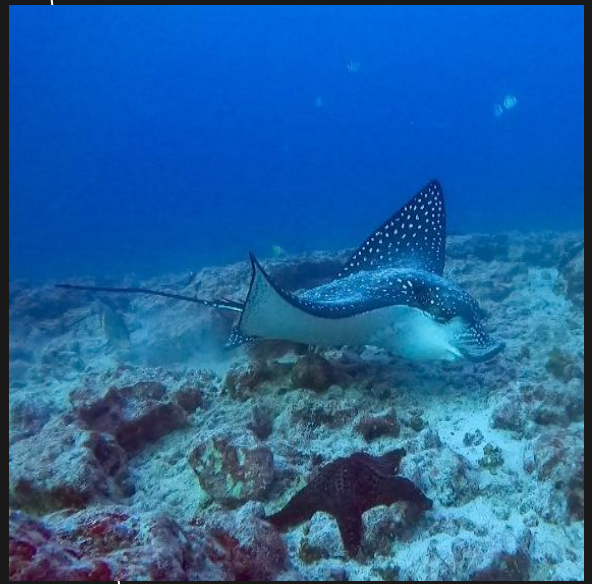
Kate Reiss

WHY CLASSIFY DIVE PHOTOS?

To filter low-quality or uninteresting photos from a dive session

INTERESTING PHOTOS

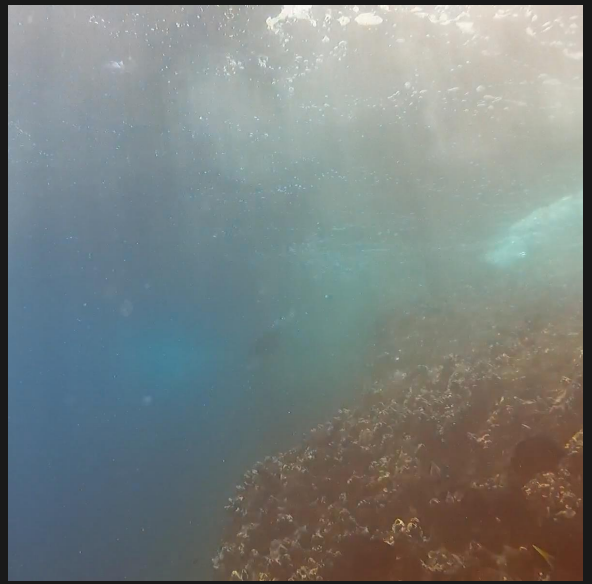
CLEAR IMAGES



RECOGNIZABLE SUBJECTS

LARGE MARINE LIFE

NOT INTERESTING PHOTOS



CAN WE TRAIN A MODEL TO CLASSIFY INTERESTING DIVE PHOTOS?

DATA

My own dive photos & videos

2,000

Balanced training set

200

Unique test set

MODEL

VGG16 Base

1 Dense Layer

1 Dropout (0.5)

Output: Sigmoid

RESULTS ON UNSEEN DIVES

100% Precision
78% Recall

FUTURE WORK

- Add more diverse data
  - Classify marine life

THANKS !

CRÉDITS: Ce modèle de présentation a été créé par **Slidesgo**, comprenant des icônes de **Flaticon**, des infographies et des images de **Freepik**

APPENDIX

```
Model: "sequential_4"
_________________________________________________________________
 Layer (type)                Output Shape              Param #
=================================================================
 vgg16 (Functional)          (None, 1000)              138357544

 flatten_4 (Flatten)         (None, 1000)              0

 dense_8 (Dense)             (None, 1024)              1025024

 dropout_4 (Dropout)         (None, 1024)              0

 dense_9 (Dense)             (None, 1)                 1025

=================================================================
Total params: 139,383,593
Trainable params: 5,123,049
Non-trainable params: 134,260,544
_________________________________________________________________
```

APPENDIX