Visual Re-identification of Wildlife using Mega Descriptor

Group n0 - 28
Group members -

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Datasets of Wild Animals

- Dataset from Research Papers: First, we will explain the newly composed dataset used to train the Mega Descriptor model. It includes the images and videos of various types of species.

- Test Dataset: Then, we have to choose a dataset from the Labeled Information Library of Alexandria - Biology and Conservation (LILA BC), which provides various wildlife datasets not covered in our first mentioned paper.

Problem Statements about Tracking of wild animals

The main goal is to accurately and efficiently recognize individual animals within one species based on their unique characteristics, e.g., markings, patterns, or other distinctive features.
Automatizing the identification and tracking of individual animals enables the collection of precise and extensive data on population dynamics, migration patterns, habitat, etc.

- *Issue:- First, we need to tell animals apart in the wild using their unique characteristics like spots or stripes.*

- *Importance:- It helps us to keep the track of the animal numbers which helps to find their specific position and protects them better.*

- *Challenge:- We have to find the best way to do without mixing up and taking don't take too much time.*

Approaches Investigated

- First Paper Model: Initially, we will explain the Mega Descriptor based on Swin Transformer architectures and its advantages in handling different scales and resolutions effectively.

- Second Paper Model: Then we will give some brief about the Swim Transformer's general approach as mentioned in the second paper. It focuses on its hierarchical feature maps and local self-attention mechanisms.

Evaluation metrics and hardware requirements

- In end, we have to find the performance of our model. Then, we have to use evaluation metrics used in the first paper such as accuracy, precision, recall, sensitivity, specificity, mae and mape for object detection tasks.

- We have to mention the inference time and the type of hardware requirements for processing and detection such as GPU specifications or cloud-based platforms.

- Then we have to compare the performance, hardware requirements and evaluation metrics of second paper w.r.t first paper.