Animals

CS5542 - Big Data Analytics and Apps

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Overview

For this project our team will be utilizing images of various animals with the purpose of identifying the animal or animals present in a given image and providing a caption to the context. That is, we will strive towards identifying whether or not a given animal is a threat, providing their consumption classification, the size, and whether they are legged or limbless.

Image Caption Approach

The caption that will be generated for a given image will provide general details of the animal or animals present, such as if the animal is a cat, dog, bird, fish, or bear. Additionally, it will convey the threat level of the animal or animals present, the size, and their limb count. An example of a caption for a bear cub in the forest may be as follows: **“A small, non-threatening, animal with four legs. Most likely a bear”.**

Existing Applications

A couple existing applications within this theme include iNaturalist, Seek, FlowerChecker and eBird.

iNaturalist

This application helps a user identify plants and animals. It relies on the use of ‘citizen scientists’ to produce images and recordings of the different organisms. When provided an image, the application has the ability to provide the species of the organism present in the image. If the application cannot determine the species of the organism, due to image quality, it will attempt to provide the genus or family that the organism belongs to.

Seek

Seek is an application also made by iNaturalist with the purpose of encouraging families to explore outdoors. The application focuses more on achievements and learning about the animals and plants as a family focus.

FlowerChecker

This application allows users to take pictures of unknown plants and experts at FlowerChecker will identify the plant for you. This application does not implement any machine learning and instead has the user wait for a response from an expert that identifies the plant.

eBird

This application relies on regional collaborators and verifies the data quality submitted by having regional experts review the data.

Project Features

The proposed project features include identifying whether or not the animal is a threat, providing the size of the animal, what kind of food it eats, and the number of limbs the animal has.