Info 7390 Project Report

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Wild Animal Recognition

For several years, animal detection in the wildlife has been an area of great interest among many fields. Animal detection and classification can help prevent animal-vehicle accidents, trace animal facility, prevent theft, and ensure the security of animals. Since there are many different animals, manually identifying them can be a daunting task. So, an algorithm that can classify animals based on their images can help people to monitor them more efficiently.

It is hard to classify animals based on wildlife images captured in a field since they appear with a different pose, cluttered background, different light and climate conditions, different viewpoints, and occlusions. Additionally, animals of different classes look similar. All these challenges necessitate an efficient algorithm for classification.

In our dataset, there are around 8,000 images of 5 different species of animals. These species are elephant, butterfly, cow, sheep, and squirrel. Our project has two main goals: (1) Automatically identify the category of wild animals based on the images given and adjust hyperparameters to improve the accuracy of identification. (2) Compare the performance of the Convolutional Neural Network (CNN) model and Multilayer Perceptron (MLP) model in classification so that we can know which one is more suitable to detect animal images.