Identifying bird species using the CUB-200-2011

Project Description:

we're setting out on a quest to teach computers how to recognize birds. We're using a dataset called CUB-200-2011, which is filled with thousands of bird pictures. Our Objective is to figure out the best way to train computers to tell one bird species from another using machine learning tricks.

Why it's a Good Idea?

By trying out different methods, we're searching for clues to solve it. And the objective is to classify birds accurately! it's super useful for scientists and bird lovers alike. The more we learn, the better we can protect our feathered friends and understand how machines see the world.

How We'll Do It?

We'll dive into the dataset, armed with traditional classifiers like SVM and k-NN, along with decision trees and deep learning models like CNNs. We'll train these models with the pictures of birds, and then test them to see which one does the best job at identifying different bird species. It's like a bird beauty pageant but for algorithms!

What Data do we use?

CUB-200-2011 dataset (https://www.kaggle.com/datasets/wenewone/cub2002011). It's packed with bird photos, each one labeled with the type of bird it shows. It's like having a bird encyclopedia.

How We'll Know If It Works?

If the computer can look at a bird picture and say, "Hey, that's a sparrow!" most of the time is the goal. But we're not just stopping there. We'll also pay attention to where the computer messes up, so we can teach it better. Each method we try brings us closer to making computers as bird-savvy as us. It's like teaching a friend about birds – the more they learn, the more they appreciate the beauty of our feathered friends!