Case Study Brief: Canine Classifier

Overview

In an era where artificial intelligence intersects with daily life more than ever, the capacity to utilize machine learning for understanding biological diversity stands as an opportunity for growth and innovation. Specifically, the ability to automatically and accurately recognize and differentiate between dog breeds has very important applications in areas ranging from pet care solutions to enhancing databases for veterinary purposes. With the advancement of machine learning, we now have the tools to make our own neural network for image classification reasons. Enhancing the accuracy and efficiency of such identifications can lead to better health care for pets, more personalized pet services, and enriched data for studies.

Objective

You are tasked with harnessing the power of machine learning to create a system capable of distinguishing between different dog breeds using visual data. This project involves utilizing the Stanford Dog Dataset, which contains thousands of images across numerous breeds. Your mission is to develop a Convolutional Neural Network that can accurately identify and classify dog breeds from images.Additionally, in order to compare your results you are also tasked to train the prebuilt neural network, EfficientNetV2B1. Comparing your model's performance with EfficientNet will help gauge the effectiveness of your CNN.