

Machine Learning Engineer Nanodegree

Capstone Proposal

Daisuke Ohba

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Proposal

Domain Background

Many owners will want to know the exact breed of their dog. Using machine learning, it is possible to identify the breed of your dog with a single photo of your dog.

This is the assignment that I chose for my Capstone project for "[Udacity Machine Learning Engineer Nanodegree](#)". ([CNN Project Dog Breed Classifier](#))

Problem Statement

Machine learning is used to identify dog breeds from images of dogs.

Datasets and Inputs

Datasets and Inputs are provided in the [Notebook](#) by Udacity.

Solution Statement

To solve the problem, we use a type of machine learning, the Convolutional Neural Network (CNN). This is useful for image recognition.

Benchmark Model

Pre-trained VGG-16 Model

Evaluation Metrics

The percentage of correct answers in the test data.

Project Design

The workflow is shown in the [Notebook](#) by Udacity.

- Step 0: Import Datasets
- Step 1: Detect Humans
- Step 2: Detect Dogs
- Step 3: Create a CNN to Classify Dog Breeds (from Scratch)
- Step 4: Create a CNN to Classify Dog Breeds (using Transfer Learning)
- Step 5: Write your Algorithm
- Step 6: Test Your Algorithm