



Pawpularity

Predicting the Cuteness of a Pet
using Computer Vision


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Project Overview:

“Cuteness Meter (Pawpularity)” - How Attractive Are the Photos?





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Homeless

21027

Happy

58341


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Tasty Meat-Free Meals






There are **10,312** homeless doggies here.
Let's find a home for them now!



Marley
Male, 1 Yr, Weimaraner Mix
Selangor, by **Marley6224**

Marley is a one year old Weimaraner bully, he is very cheerful, obedient and hyperactive dog. He is a good watch dog and very sensitive with the environment. We are looking for adopters with home that has lots of space to let the ..

There are **9,791** neglected kitties here.
Shall we give them a loving family?



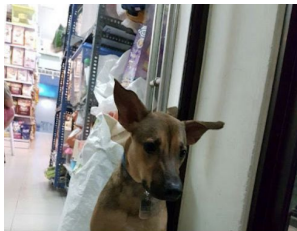
Boba
Female, 6 Yrs, Domestic Long Hair
Kuala Lumpur, by **Kittekat**

Boba was found in August last year during lockdown terrified and hungry hiding under cars from the other strays. We believe she was dumped as she was terrified of her surroundings but very docile when picked up. She had a bad up..

Pawpularity Training Data

Id Subject Focus Eyes Face Near Action Accessory Group Collage Human Occlusion Info Blur Pawpularity

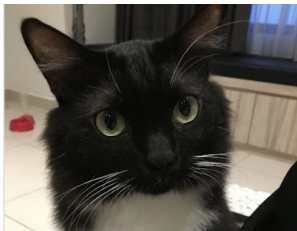
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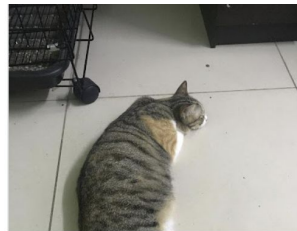
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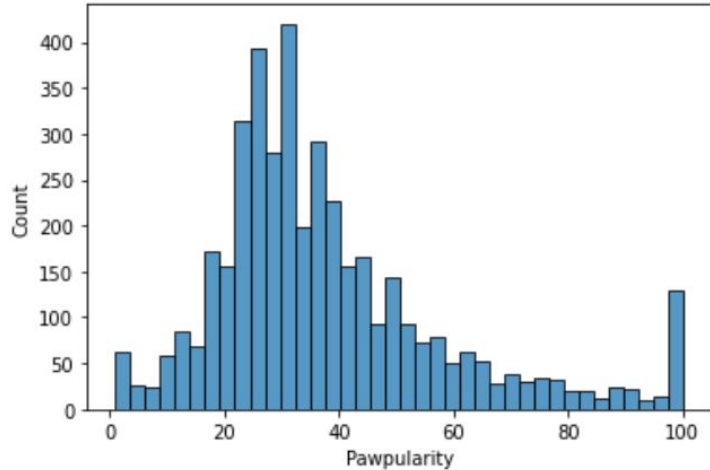


1abb3664a2c7bebd416ee1...



Data Analysis: Pawpularity Score Statistics

Pawpularity Score Summary



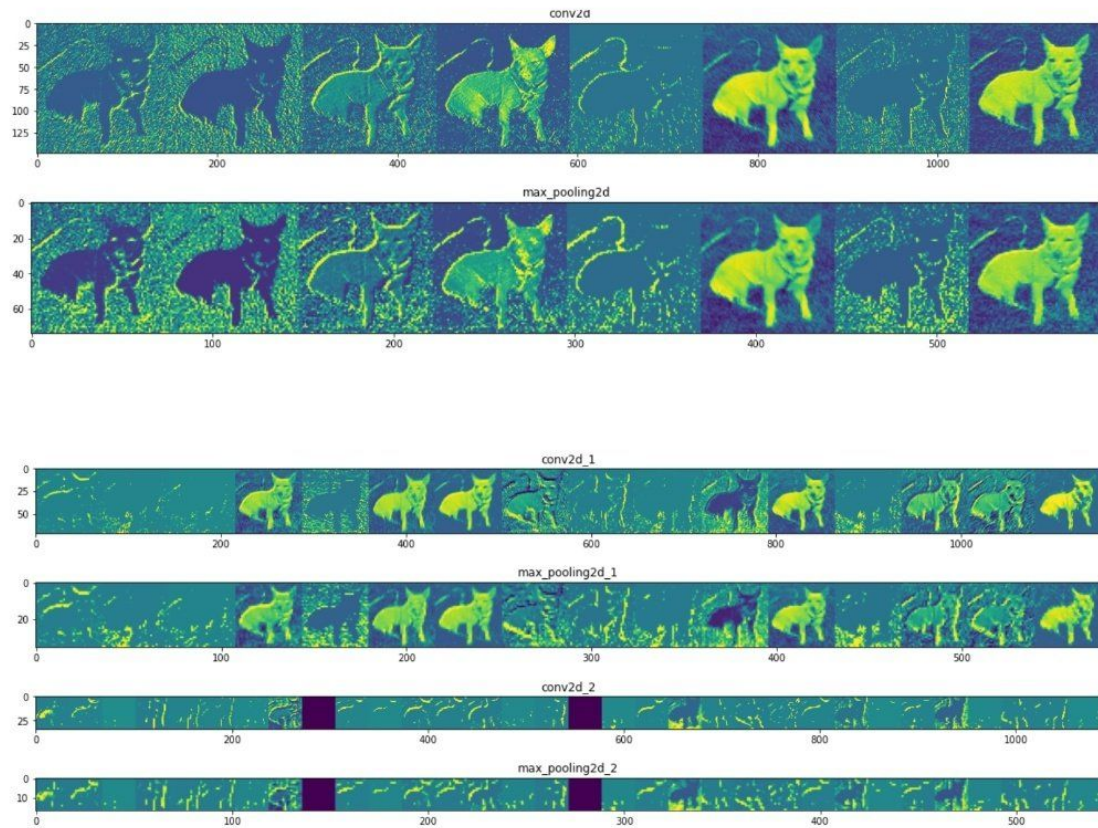
count	9912.000000
mean	38.039044
std	20.591990
min	1.000000
25%	25.000000
50%	33.000000
75%	46.000000
max	100.000000

Inference:

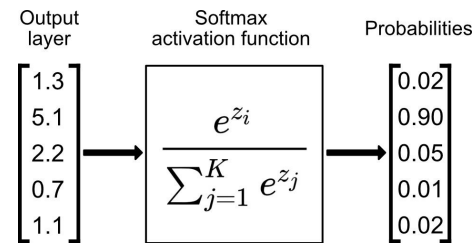
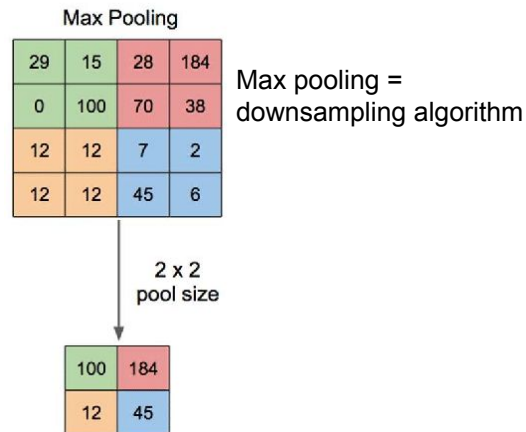
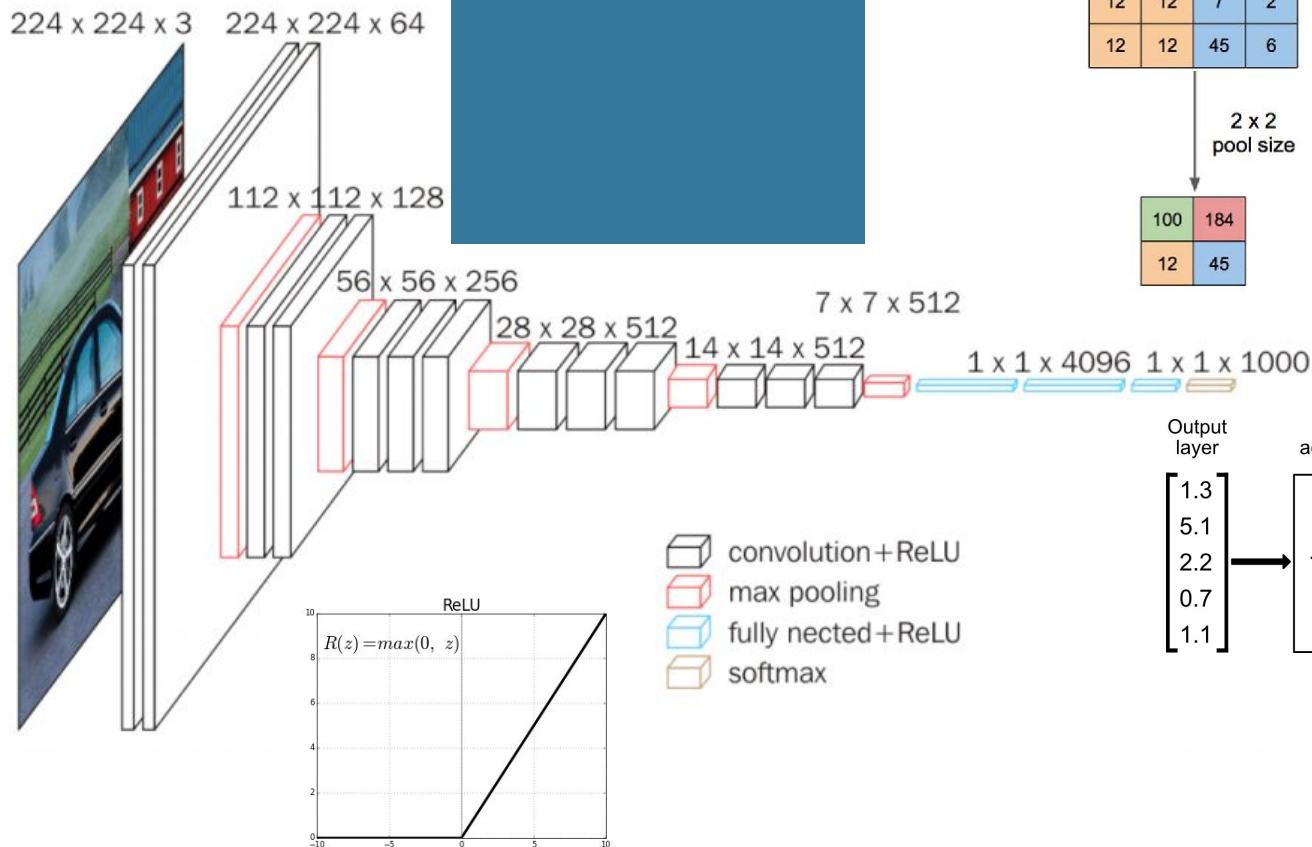
“Cute Photo” = Pawpularity Score ≥ 33

“Not Cute” = Pawpularity Score < 33

What is a Convolutional Neural Network (CNN)?

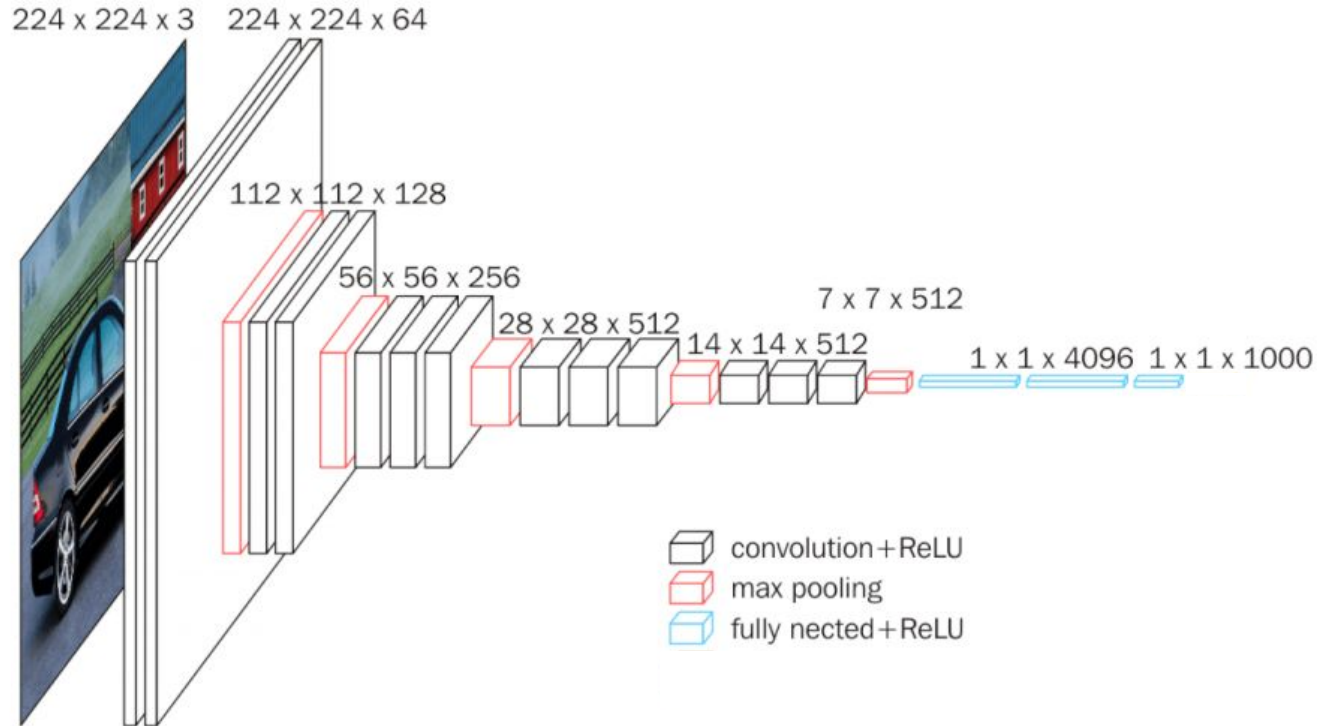


VGG-16 Architecture



VGG-16 Architecture

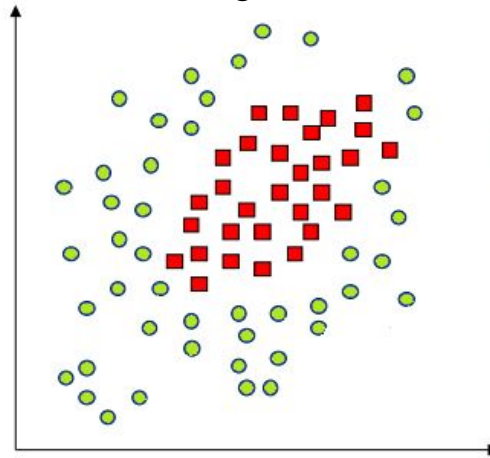
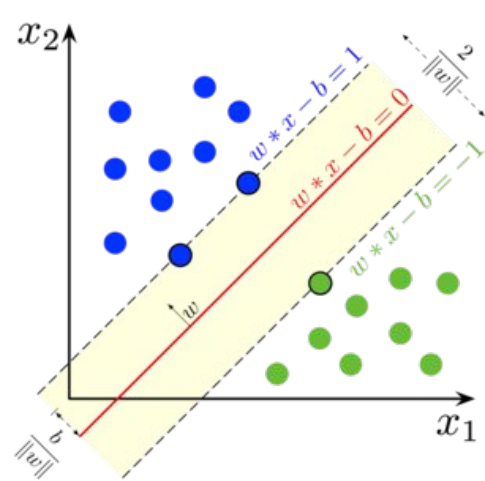
Changing the architecture to output 1000 features (numbers)



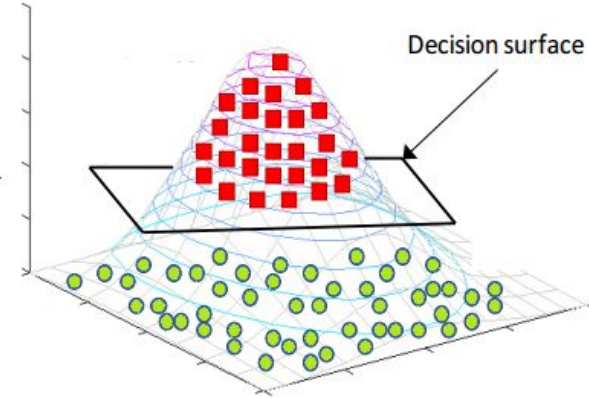
Support Vector Machine (SVM) Classifier

Simplified Process:

1. Plot each data points with the inputs/features
2. Find a hyperplane that best separates two different categories



kernel



Comparing Two Methods of Machine Learning

Manually Inputted Variables:

Using all 12 features given from the training data (Eyes, Blur, etc)

SVM Model

accuracy 0.5048

Using Neural Networks:

Neural Network creates 1000 features using only the images and “Pawpularity” variables from the training data.

SVM Model

accuracy 0.7031

Questions?