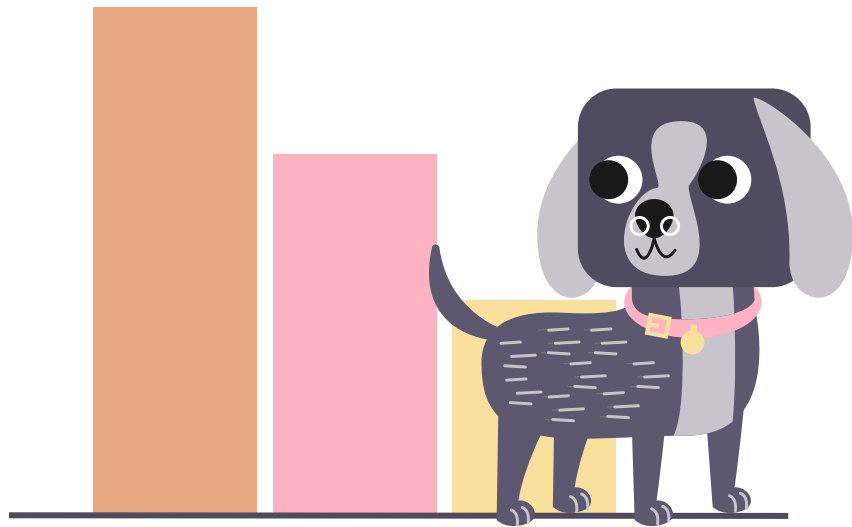# Dog Image Classification

Anhduy Nguyen

Team

Anhduy Nguyen

- Data Science Student
- B.S. Information Systems
- Former Database Administrator
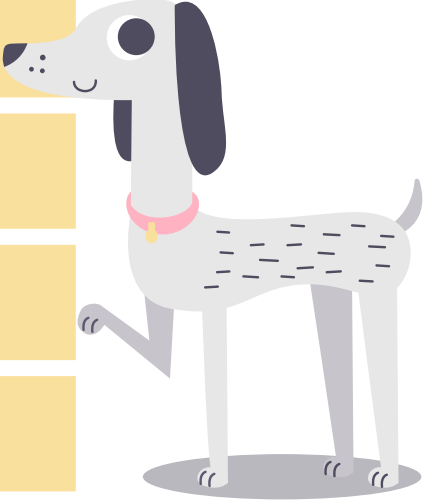
Stakeholder

American Society for the Prevention of Cruelty to Animals

Agenda

1	**Business Problem**
2	**Data/Limitations**
3	**Modeling**
4	**Results**

5	**Recommendations**
6	**Next Steps**

Business Problem

Business Understanding

The ASPCA's mission, as stated by founder Henry Bergh in 1866, is **"to provide effective means for the prevention of cruelty to animals throughout the United States."**

Every Year:

- 3.3 Million Dogs
- 50% are adopted
- 20-30% are Euthanized

https://pawsomeadvice.com/pets/stray-animal-statistics/

Business Problem

- No uniform way of classifying dog breeds
- Reduce work on volunteers
- Uniform Breed Labeling

Data/Limitations

Data

- Stanford Dog Data Set
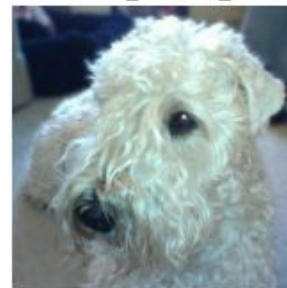- 20,580 images
- 120 Dog Breeds
- Data Augmentation

Data Augmentation

Limitations

Limited Dog Breeds

Older Data Set

No Puppies

Modeling

Modeling

Convolutional Neural Network

- Analyze Visual Imagery

Transfer Learning Layer

Network Layer
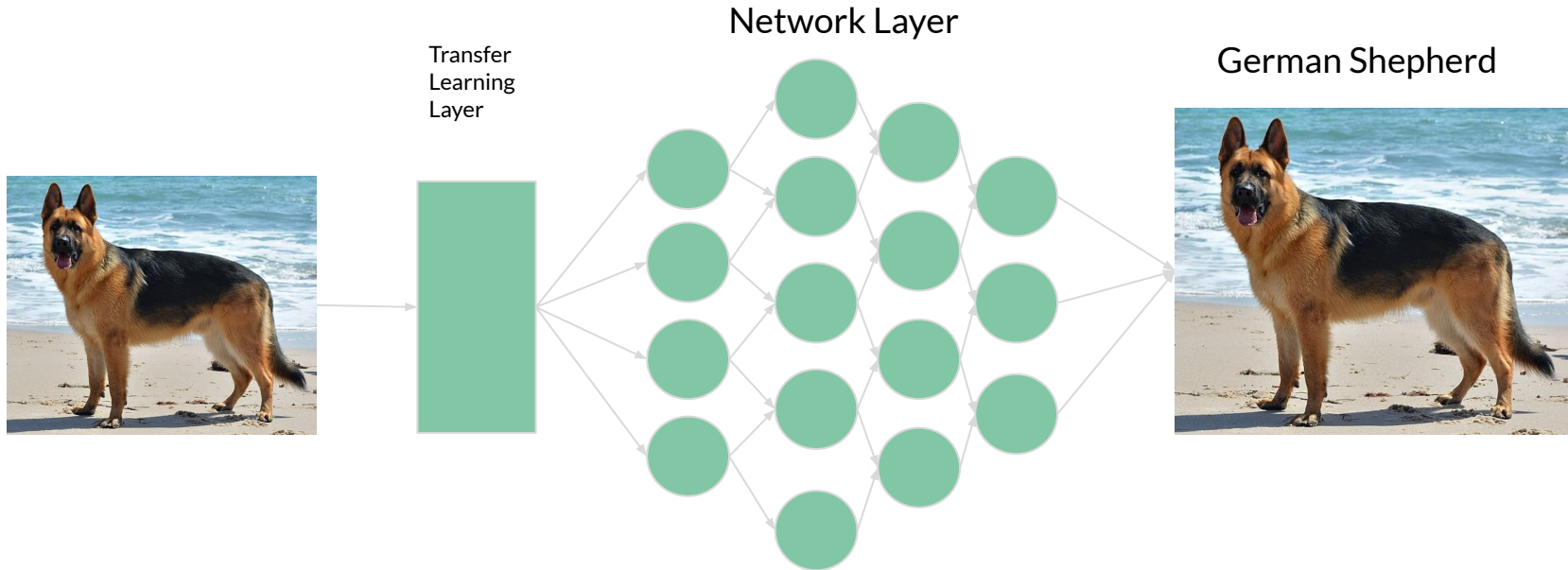
German Shepherd

Results

Results

81% - - - - - Training Accuracy Score

82% - - - - - Validation Accuracy Score
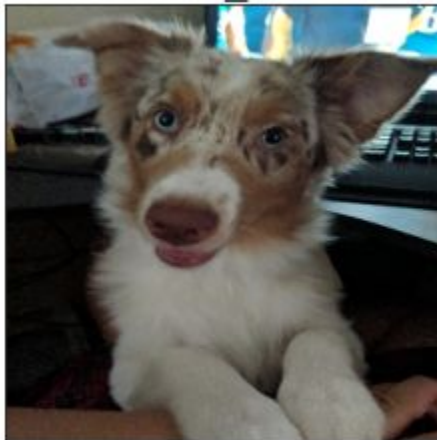
70% - - - - - Test Accuracy Score
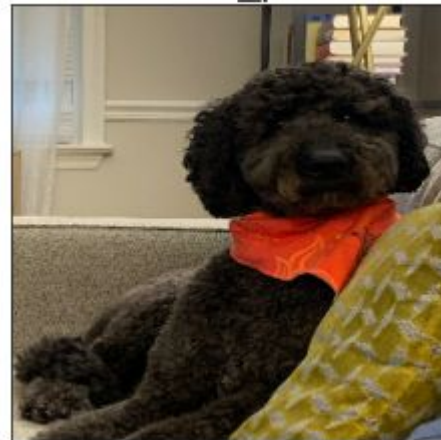
Examples

German_shepherd

Border_collie

miniature_poodle

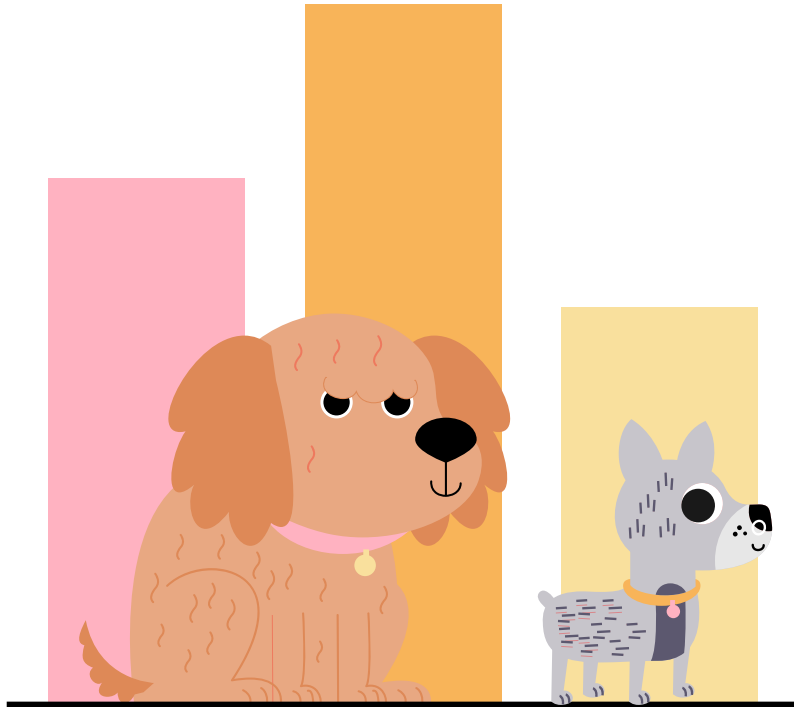Actual: German Shepherd   Australian Shepherd   Labradoodle

Recommendations

Recommendations

Reduce Volunteer/Worker workload

Uniform Classification System

Increase Searchability

Next Steps

Next Steps

01

Add Remaining Dog Breeds

02

Percentage Classification

03

Model with Cats and Birds

End

Contact Information

Thank you

Anhduy Nguyen

- anguyen61191@gmail.com
- https://www.linkedin.com/in/anhduy-nguyen-217402149/
- https://github.com/anguyen61191
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