

Dog Breed Identification

Using image classification models to identify dog breeds from pictures of man's best friend



Purpose

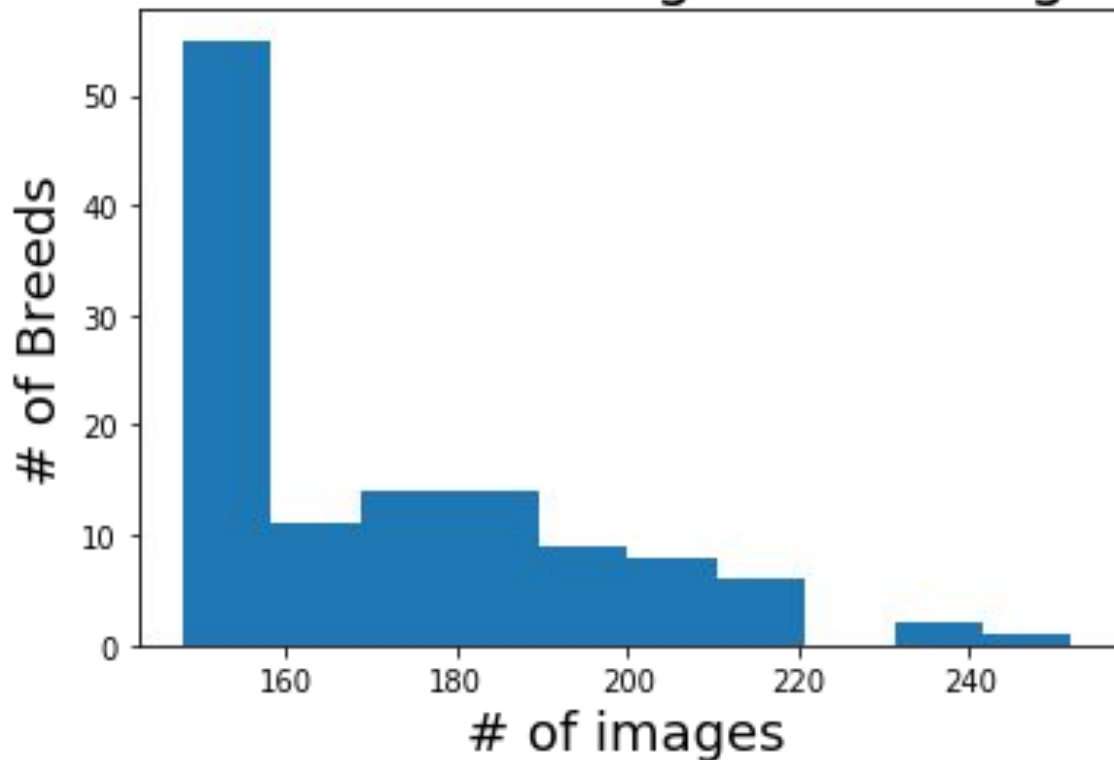
- For animal shelters/ pounds
- Humans aren't perfect



About the data

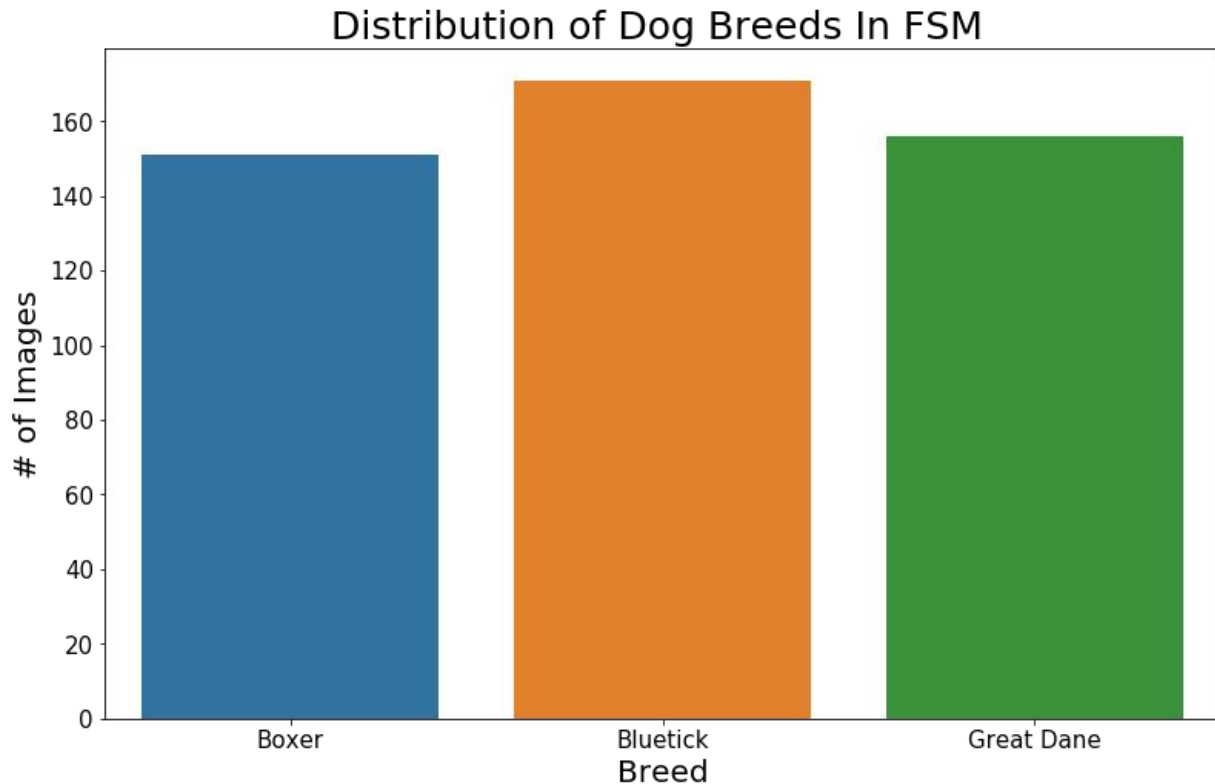
- From Stanford University
- 20,580 images of dogs
- 120 breeds
- At least 150 images per breed

Distribution of Dog Breed Images



First Simple model

- 3/120 Breeds
- From training data
- Accuracy Score: 0.359
- Slightly better than random guessing



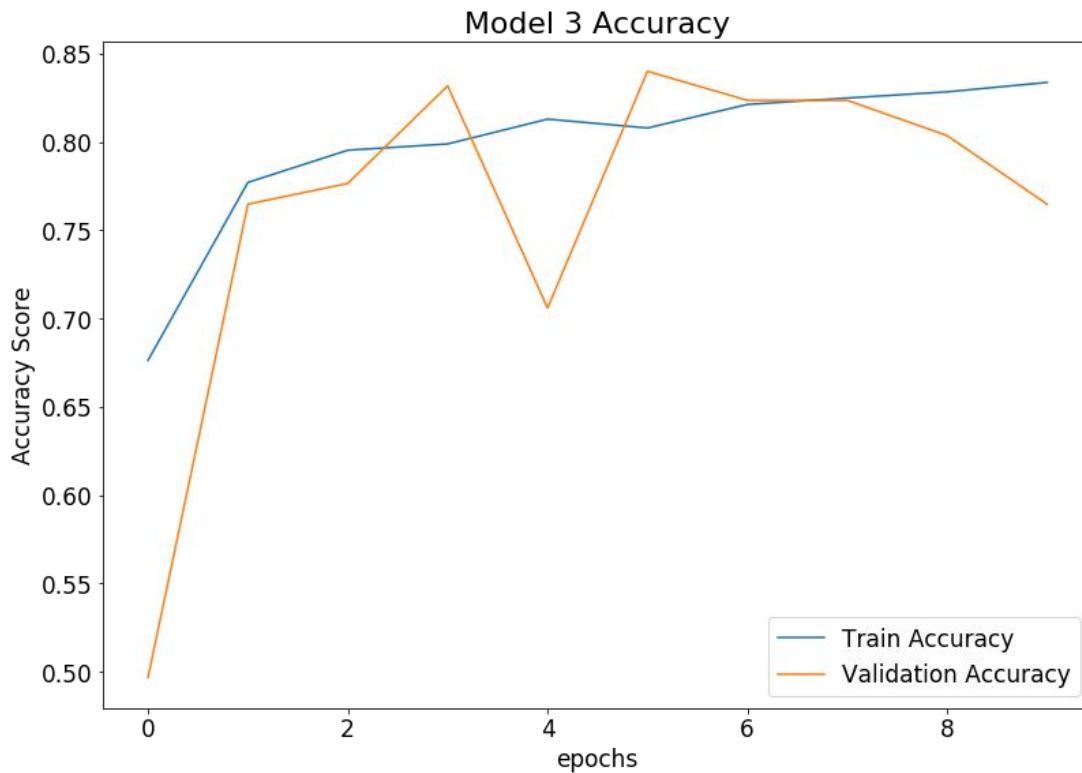
Model 2

- 5/120 breeds
- Accuracy: 0.383
- Val Accuracy: 0.374
- Better than before



Model 3

- 2/120 breeds
- Accuracy: 0.840
- Val Accuracy: 0.765
- Significant improvement



The next steps

- Keep refining CNN's
- Find average, max, and min image sizes
- Better processing
- Use more features
- Deploy a web app

Sources

1. Aditya Khosla, Nityananda Jayadevaprakash, Bangpeng Yao and Li Fei-Fei. Novel dataset for Fine-Grained Image Categorization. First Workshop on Fine-Grained Visual Categorization (FGVC), IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2011.
2. J. Deng, W. Dong, R. Socher, L.-J. Li, K. Li and L. Fei-Fei, ImageNet: A Large-Scale Hierarchical Image Database. IEEE Computer Vision and Pattern Recognition (CVPR), 2009.

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