**AI Final Project Deliverable 1**

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Data source: <https://www.kaggle.com/c/dogs-vs-cats/data>

Data characteristics: 25,000 training images and 12,500 testing images

**Objective**

The goal is to train a model that classifies images based on if it is a dog (1) or a cat (0). Image classification is an interesting and important tool that can be used in a plethora of contexts and creating a model that accurately classifies images based on the features of cats versus dogs is exciting for me. The dataset I am using is part of a competition on Kaggle, and the best model on the leaderboard is a model that predicts with 98% accuracy. I’m to try my best to train my model so it can produce accuracy margins as close as possible to the leading model on Kaggle.

**Characteristics and Justification**

My data consists of 25,000 training images: 12,500 cats and 12,500 dogs. There are also 12,500 testing images made up of cats and dogs that will be used test how well my model classifies these animals. I chose this data because it is very straightforward, clean, and provides an opportunity for me to get some hands-on experience building a classification convnet from scratch using real images.

**Type of Model**

I will be using Keras to build a convnet model that will classify 150x150-pixel images into two groups: dogs (1) and cats (0). The convnet will have either two or three convolution layers that use the relu activation function, as well as tuning parameters (dropout, pooling, etc.) to avoid overfitting and increase accuracy. To train my model and produce accuracy metrics in a timely manner, I’ll likely work with a small subset (~2-4,000 training images) of the data before introducing the full dataset to my model. I’ll be using the various resources we have been given in class as well as the second assignment file from assignment 3 to help guide me through my model-building process.