[ML' 22] Support Vector Machines Assignment

Solve the dog-cat classification problem from Kaggle

1. Download the train dataset from here: https://www.kaggle.com/c/dogs-vs-cats/data
2. Use 1000 cat images and 1000 dog images for training and 100 cat images and 100 dog images for testing
3. Extract the features of the training set using **HOG.**

```
resized_img = resize(img, (128,64))

fd, hog_image = hog(resized_img, orientations=9, pixels_per_cell=(8, 8),
                    cells_per_block=(2, 2), visualize=True, multichannel=True)
```

4. Use the extracted features (fd) to train **SVM** on the training dataset with an appropriate kernel function.
5. Test the trained model and calculate the accuracy the test dataset.