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Project Proposal

Our project is on image classification of cats. We will be feeding Supervised Machine Learning Algorithms images of cats, dogs, and pandas. Our models will then categorize test images based on whether they contain a cat or not. Our Project is a Binary Image Classification Machine Learning Project.

The dataset we have decided upon is:

Image Classification of CAT vs NOT A CAT (DOG/PANDA):
https://www.kaggle.com/datasets/ashishsaxena2209/animal-image-datasetdog- cat-and-panda

The Algorithms we will be using are:

- SVM Classifier (Isaiah)
- CNN (Joycelyn)

Preprocessing steps that will be performed to improve model performance:

- Resizing of images to be standard/uniform
- Data Cleaning – Removing of images
- Visualization of Images – As Images and Arrays

Possible Preprocessing steps we may implement for improved model performance:

- Gaussian blurring to highlight subject within the photo
- Converting image to grayscale

Our Evaluation Metrics are:

- Confusion Matrix
- Accuracy
- Sensitivity (Recall)
- Specificity
- F1-Score

Our Goal is to Classify the test images after a train/test split to determine if the image contains a cat or not. We hope that this project will improve our understanding of Machine Learning, as well as image classification techniques performed in industry.