

Project 3 Writeup

In the beginning...

My initial approach for the multiclass support vector machine was to attempt to hard code it. Having not read the instruction carefully, I ambitiously started at it. I soon found the linearSVM class. I then proceeded to convert all of the labels to numbers, emulating my P3 questions pseudo-code. I then discovered that it was not necessary, the SVM class can handle string labels.

Interesting Implementation Detail

Astonishingly, I discovered I could implement the whole SVM method with just 3 lines!

My code snippet highlights this interesting point.

```
svm = LinearSVC()
svm.fit(train_image_feats, train_labels)
return svm.predict(test_image_feats)
```

A Result

1. First implementing tiny_images and nearest_neighbor, I achieved an accuracy of 21.6
2. I then achieved a nice 40% with a bag of words model and still using nearest neighbors
3. Using both an SVM and nearest neighbor, with normalized histograms to account for different image sizes, I reached 65% accuracy