Face recognition on a small dataset

We compared four classifiers using the same encoded face representations and the same train/test split on a small, closed-set collection of film characters.

Classifier comparison

Classifier	Accuracy	Prediction time[1]
Logistic regression	0.97	0.4 ms
Support vector machine	0.97	1.2 ms
k-nearest neighbours	0.97	4.8 ms
Neural network	0.97	61.5 ms

[1] Times as logged for this run in figure 6 of the original report. The comparison uses the same project setup for all four models.

Sensitivity to the split

Across random image partitions, logistic-regression test accuracy ranged from 94% to 98%. Some splits with a higher test score also had a lower validation score. Our report identified the assignment of harder examples as a possible explanation.

The experiment measures discrimination among the characters already represented in this dataset. Different splits changed the estimate substantially, even with the same classifier.

Original result

```
Logistic Regression - Accuracy: 0.97, Prediction Time: 0.0004s
SVM - Accuracy: 0.97, Prediction Time: 0.0012s
kNN - Accuracy: 0.97, Prediction Time: 0.0048s
Neural Network - Accuracy: 0.97, Prediction Time: 0.0615s
```

Figure 6. Original run output, with timing in seconds.