PA196: Pattern Recognition
Exercises: Sept. 24, 2014

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1. Perceptron

1. simple implementation of perceptron with discussion
2. discussion on the `sklearn.linear_model.Perceptron`

To do:

- select one dataset (e.g. `iris`) and transform it to a binary problem
- check the help for the `Perceptron` class
- use `fit` method to build a model
- use the `predict` method to predict the labels of a data set
- shuffle (`numpy.shuffle()`) the data and repeat the training: is there any difference?
- randomly partition (have a look at `random.choice()`) partition your data into a *training set* and a *validation* set
- train a new model and test it on the validation set

2. Fisher Discriminant

- FDA is LDA for 2 classes
- check `sklearn.lda.LDA` class
- go through the code `http://scikit-learn.org/stable/_downloads/plot_lda_qda.py`
- repeat the training/testing steps from perceptron, with the FDA classifier