Summary/Review

Introduction to Neural Networks

Neural Networks and Deep Learning are behind most of the AI that shapes our everyday life. Think of how you interact everyday with these technologies just by using the greatest features in our phones (face-recognition, autocorrect, text-autocomplete, voicemail-to-text previews), finding what we need on the internet (predictive internet searches, content or product recommendations), or using self-driving cars. Also, some of the classification and regression problems you need to solve, are good candidates for Neural Networks and Deep Learning as well.

Some basic facts of Neural Networks:

- Use biology as inspiration for mathematical models
- Get signals from previous neurons
- Generate signals according to inputs
- Pass signals on to next neurons
- You can create a complex model by layering many neurons

The basic syntax of Multi-Layer Perceptrons in scikit learn is:

```
# Import Scikit-Learn model
from sklearn.neural_network import MLPClassifier
# Specify an activation function
mlp = MLPClassifier(hidden_layer_sizes=(5,2), activation= 'logistic')
# Fit and predict data (similar to approach for other sklearn models)
mlp.fit(X_train, y_train)
mlp.predict(X_test)
```

These are the main parts of MLP: