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Machine Learning - Week Plan 6

Topics : Scikit learn and Neural Networks, evaluating performance, general training considerations with Neural Networks.

Literature:

[Hands-On Machine Learning]
Chapter 3, p. 108 – 128 (Sections: Confusion Matrix, ROC curves - performance of our predictors)
Chapter 11, p. 357 (the beginning of the chapter) until p. 366 (problems with training using Neural Nets)

[* In the second edition oft he book this is:
Chapter 3, p. 90 – 100 (Sections: Confusion Matrix, ROC curves - performance of our predictors)
Chapter 11, p. 331 (the beginning of the chapter) until p. 336 (problems with training using Neural Nets *]

There is not so much theory this time to read (only the 16 pages above), it will be more learning the practical usage of scikit learn and neural networks. It is very important that you have a look at the material below for working with Pandas in python (the video is a good place to start, then you can look at the other Panda material from learnpython.org), since we will use the Pandas for manipulating our data:

Get started using Pandas:
https://youtu.be/XDAnFZqJDvI
A very good introductory video.

Panda basics, code examples:
https://www.learnpython.org/en/Pandas_Basics

Also have a look at the documentation for the Neural Network part of scikit learn:
http://scikit-learn.org/stable/modules/generated/sklearn.neural_network.MLPClassifier.html

There is also a small tutorial of the basics:
http://scikit-learn.org/stable/modules/neural_networks_supervised.html
An exercise today, full of small code snippets, will take you through all the steps in a full example.

Exercise.

Code: You will NOT get this code in full, but as small snippets as part of the slides and in the exercise.