Neural Networks - Lab01 - Introduction to Theano

September 14, 2016

1 Basic machine learning problems with Theano

1.1 Setup

To setup your enviroment, log into your student machine using your credentials, open Konsole and execute the following commands:

```
wget http://odkrywka.wmi.amu.edu.pl/static/data/mtm/mjdlab.tgz
tar -xzf mjdlab.tgz
source mjdlab/bin/activate
```

The prompt should change to something including "mjdlab", get me if it does not!
Next run jupyter

```
jupyter notebook
```

This will probably run Konqueror, copy the address, open Chrome or Chromium and pass the URL, Konqueror will not work properly.

1.2 Tasks

1. Work through the following steps of the tutorial on http://deeplearning.net/software/theano/tutorial/index.html :
    1. Baby steps - Algebra
    2. More examples
    3. Derivatives in Theano: Computing gradients
2. Logistic regression:
    1. Analyze the logistic regression code in http://deeplearning.net/software/theano/tutorial/examples.html#a-real-example-logistic-regression
    2. Modify the example code and apply it the Iris data set mapped to two classes (Iris setosa vs. not Iris Setosa)
    3. Calculate the accuracy
3. Linear regression:
    1. Look at the code from the lecture and display the population/profit graph
    2. Modify the logistic regression code so it can be used as a linear regression model.
    3. Plot the graph.

In [ ]: