Lab 5. Convolutional Neural Networks

This lab will explore using CNN’s to perform sentiment analysis for movie reviews.

For this lab, we will train a convolutional deep network model on movie review sentences from Rotten Tomatoes labeled with their sentiment. The result will be a model that can classify a sentence based on its sentiment (with 1 being a purely positive sentiment, 0 being a purely negative sentiment and 0.5 being neutral).

The positive and negative data is in the *data* subdirectory. There are two files

1. rt-polarity.pos for positive sentiment
2. rt-polarity.neg for negative sentiment

Create a CNN, using either the low level TensorFlow API, or the high level tf.estimator API to train and test your model. The data loading and preprocessing routines are in the file *lab5\_data.py.* Import this module into your program in order to access the functions defined in this file.

As our data set is fairly small, we will need to add a dropout layer to prevent overfitting of our data.

Classify the output using the softmax function which gives us a result between 0 (negative sentiment) and 1 (positive sentiment).

Save the model using the Saver object in Tensorflow and load it in a separate python module when testing the data.