Sentiment Analysis

A Crash Course on Deep Learning for Sentiment Analysis

## Theory

30 min - [Introduction to AI Sentiment Analysis](https://monkeylearn.com/sentiment-analysis/) (Skip the irrelevant parts)

**Sentiment analysis** is an area of **Natural Language Processing** used to understand the feeling/opinion of text. Common challenges include: tone detection, objectivity detection, sarcasm detection, context awareness, and determining the implications of comparisons. Common classification methods include: **Naïve Bayes, Regression, Support Vector Machines, and Deep Learning**. Additional resources linked at bottom.

A recent survey [[1](https://pdfs.semanticscholar.org/8892/24a64a5bc5f9e965f418a63b6768f7164993.pdf)], indicates that Deep Learning continues to be the superior method.

5 min – [Introduction to Neural Networks](https://victorzhou.com/blog/intro-to-neural-networks/) 45 min - [Time aware neural networks](http://colah.github.io/posts/2015-08-Understanding-LSTMs/)

The order or context of words in a sentence is important to understanding its meaning. **Recurrent neural networks** are needed to understand order/time and **LSTM** neural networks are needed to adjust the importance of words based on their context. The model could wildly misinterpret a sentence if it didn’t understand context.

[Deep Learning Glossary](http://www.wildml.com/deep-learning-glossary/)

## Practice

30 min - [Introduction to Pandas, Numpy, Notebooks, Tensorflow, Matplotlib, and Regression](https://developers.google.com/machine-learning/crash-course/first-steps-with-tensorflow/programming-exercises)

Shows how to use Python to work with data in the same way you’d use Excel.

30 min – [Tutorial on LSTM Neural Networks (Deep Learning) for Sentiment Analysis](https://www.kaggle.com/ngyptr/lstm-sentiment-analysis-keras)

30 min – Previous team’s work (Dell Brazil) [here](https://www.kaggle.com/hespozel/dell-hackaton)

## Competition

Judging Criteria [here](https://confluence.dell.com/display/AMA/Judging+Criteria) - Must create Wiki [here](https://confluence.dell.com/display/AMA/Round+Rock+AI+Hackathon+Wiki) - Bonus for using Brazil’s work [here](https://confluence.dell.com/display/AMA/Brazil+AI+Hackathon+Wiki) and [here](https://www.kaggle.com/hespozel/dell-hackaton)

Previous high score: 88% validation accuracy

[Cloudera Tools](http://cdsw.18.224.45.207.nip.io/login)

* Username: sign up with your competition email
* Password (most likely): Cloudera

[Hadoop Tools](http://cdsw.18.224.45.207.nip.io/login?next=%2Fsettings%2Fadmin%2Fhadoop-authentication)

* Username: Use assigned “super” address
  + 33 [nicholas\_gilpin@dell.com](mailto:nicholas_gilpin@dell.com) - [humantorch@HADOOPSECURITY.LOCAL](mailto:humantorch@HADOOPSECURITY.LOCAL)
  + 24 [joshua\_giles@dell.com](mailto:joshua_giles@dell.com) - [gambit@HADOOPSECURITY.LOCAL](mailto:gambit@HADOOPSECURITY.LOCAL)
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