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Final Project Proposal

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Use of Long Short-Term Memory Recurrent Neural Network for Movie Review Classification

I will use Python Library functions to further explore Neural Networks and Deep Learning Algorithms, in particular I will use the Keras Library to explore and implement a Long Short-Term Memory Recurrent Neural Network. This will give me the opportunity to both continue learning about Neural Networks as well as explore how to use the more advanced algorithms which can be implemented with Python's advanced Machine Learning libraries. The Keras Library has several built-in data sets to explore including the Large Movie Review Dataset, a popular data set originally compiled in 2011 by Stanford (http://ai.stanford.edu/~amaas/data/sentiment/). It contains 50,000 very polarized film reviews from IMDb with classification information about the sentiment of each review. For this effort I will use the copy of this data set included in Keras since it has already had some preprocessing completed meaning I can avoid issues with data cleaning and other work that is uninteresting and unimportant here. Since this data set is labeled with information about whether the review was positive or negative, I can use classification to train my algorithm. Using the Keras library and this data set I will be trying to develop a neural net, which, when given a sequence of words (a review) can predict the review sentiment as either positive or negative. Further since the training and test data has binary classification, I can calculate the accuracy of my results from test data on the trained network similarly to how we have for previous projects. Using this information, I can then adjust and improve how my Network is trained.