Machine Learning(CAP6610) Project – Neural Machine Translation Spring 2017

Checkpoint 6– Project Progress

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After doing extensive research on the topic and studying different neural networks like the convolution neutral network or the recurrent neural networks we decided to go ahead with the Recurrent neural network for the purpose of our project. The main idea behind using the recurrent neural network is that it takes the output from the first stage into the second stage like we have hidden layers in the convolutional neural network but the recurrent neural network also takes time into consideration.

To begin with, we developed a sample neural machine translation system using the pre built machine libraries just to get the essence of the components that will be used in architecture and also how they vary depending upon different input parameters that we had studied during our initial research for our topic.

We are done with the word embedding phase. That is we have developed our word to vector embedding architecture from scratch and won't be using any pre build architectures for our final submissions. From the past week we have started working on designing our neural network for the machine translation system. We are currently stuck on getting the gradient descent and implementing an appropriate loss function.

For the implementation we have been doing, we are following these resources :

- https://www.youtube.com/watch?v=vxibD6VaOfI : This is a video of Microsoft research team explaining there thinking behind the model they developed and also explaining the approach they used to get the model up and running.
- https://medium.com/@ageitgey/machine-learning-is-fun-part-5-language-translation-with-deep-learning-and-the-magic-of-sequences-2ace0acca0aa#.hbqm4owh7 : Following this nice and short article on understanding the word embedding portion for our project.