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

Checkpoint 2 – Project Progress and Project Proposal
02/13/2017

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The following resources on Wikipedia were referenced to help us understand the domain of Speech Recognition and Neural Networks:

- Feed Forward Neural Networks - https://en.wikipedia.org/wiki/Feedforward_neural_network
- Recurrent Neural Network - https://en.wikipedia.org/wiki/Recurrent_neural_network

The following videos on YouTube were viewed to better our understanding of this topic:

- Behind the Mic: The Science of Talking with Computers - https://www.youtube.com/watch?v=yxxRAHVtafI
- Machine Learning: Making Sense of a Messy World - https://www.youtube.com/watch?v=l95h4alXfAA
- Hidden Markov Models - https://www.youtube.com/watch?v=5araDjcBHMQ
- https://www.youtube.com/watch?v=-R9bJGNHltQ This talks about the deep neural networks and explains what they are.

The above videos explain how Speech Recognition was implemented and the improvements that have occurred in this domain. Hidden Markov Models and Recurring Neural Networks are the current implementations for Speech Recognition.

The following papers were referenced to further our knowledge on this topic:

- Neural Machine Translation By Jointly Learning To Align And Translate - https://arxiv.org/pdf/1409.0473.pdf: This paper talks about the how machine translation works and the idea behind it. It also talks about the neural network lying underneath the model and explains the working of the system.
- An Introduction to Hidden Markov Models – http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.957.202&rep=rep1&type=pdf This paper explains the Hidden Markov Models and explains there structure and how they are useful.
- http://www.nlpr.ia.ac.cn/cip/ZongPublications/2015/IEEE-Zhang-8-5.pdf: This Paper talks about the Artificial Neural networks and feed forward networks also explains the implementation of these networks and then explains the machine translation process using these networks.

Project Proposal:

After acquiring well rounded knowledge on both the project proposals, we have decided to build a neural machine translation system. We are still working to get a dataset for our project. There are a couple of datasets on Stanford University sites which we are considering. Apart from this we are also exploring other data sets which can be used. In the next couple of weeks we will be deciding the dataset and then decide to which language our translator will translate english sentences to.Most likely it will be from english to hindi.