

# A Neural Network Segmenter

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## 1 Introduction

In this project I will try to use a deep neural network approach for learning segmentation strategies for simultaneous speech translation. Deep neural networks (DNNs) have led to many advances in various components of natural language processors. They are commonly used for creating state of the art language models [1] and translators [2] in recent years. My works in this project will answer the question that how we can apply neural networks in order to achieve better results for segmenting sentences.

## 2 Detailed Description

Our method uses the outputs of an existing algorithm for finding segment boundaries in [3]. The unique features of their algorithm enables us to take advantage of optimizing both latency and translation quality when we are training our neural network. We provide our network one word at each time step and we expect it to calculate a probability of having a segmentation boundary after that word. We can then make use of these probabilities to find the best segmentation for that sentence. We will use word2vec module in order to obtain a vector representation for each word.

## 3 Implementation

I have already collected data for training neural network and I'm working on implementing a LSTM network, since it's one of the most powerful neural networks to keep track of long-term dependencies. After receiving first results from my implemented neural network, I will try different structures and algorithms in order to improve results.

## References

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- [4] Yusuke Oda, Graham Neubig, Sakriani Sakti, Tomoki Toda, and Satoshi Nakamura. Optimizing segmentation strategies for simultaneous speech translation.