

## **1. Introduction**

### **1.1 Background**

Nowadays, the artificial intelligence technology is developed so rapidly, one of its technology is Text Processing. Text processing is one of the artificial intelligence technologies in the Natural Language Processing section. One of the system that popularly developed on text processing is Text Summarization. However, text summarization still can be improved so that it can generate language that is truly natural.

With the presence of that problem, many experiments have been carried out by the experts to improve the results of the Text Summarization process. This topic is interesting to work on as TA, considering there are many ideas to build variation model in order to improve the score and accuracy model. Beside that, from the number of literature that has been encountered by author, there are some references about text summarization, sequence model architecture, attention mechanism that will be used by the author on creating this TA.

The model used is LSTM-based Abstractive Text Summarization by using the approach of the Attention Mechanism based on Neural Machine Translation which has recently been used to improve the quality of the Machine Translation system[1].

### **1.2 Topic and Restriction**

Abstractive Text Summarization is one of the solution to build a model that can summarize a text with the language is similar as written by human. That is because abstractive text summarization techniques tend to duplicate the 'paraphrasing' process rather than only summarizing. Text that summarized by this technique looks more like human writing and produce more concise summary than Extractive Summarization technique.

There are many ways to improve the quality and performance in building the model such as augmenting the data, use multi-document dataset, or improving the attention mechanism[2]. In this case, local attention is applied to building the Abstractive Text Summarization model, a dataset containing text and summary results of each text (Golden Summary) is needed. There are few things that have to be considered such as the division of data train, validation and testing, batch size and tuning the parameter for training.

There are limitations that applied in building the model. It aims to simplify the problem and speed up the processing time to make this project finish on time. Other than that, there are few process that has been simplified caused by limited knowledge of the author to understanding the material in generating the model which has already been done by the experts.

The dataset that used for create the model is English review text. The model itself is used initial training which means, it trained manually by the author. The input for training and testing a word that has been represented into vector sequence based on GloVe, the word embedding dataset. The output from the model that has been built is text file from the golden summary and summary that generated by model.

### **1.3 Purpose**

The purpose of writing this TA is to build a model for summarize a text or document abstractively and see the impact of the model using attentional mechanism which is one of the approach from the approach of Attentional Mechanism based on Neural Machine Translation[1].

### **1.4 Writing Organization**

This thesis is divided into five parts. Part 1 defining the background, problem, topic, restriction and purpose. Part 2 defining the reference and literature review that used by author. Part 3 defining the details of proposed model that used in experiment. Part 4 is the result and analysis of generated model. Part 5 is the conclusion based on the experiment