ABSTRACT

Narrated instruction videos is one type of learning video or tutorial video. This type of video contains visual representation that is generally exhibited by person dan textual representation in the form of subtitle. However, the amount of information delivered on the video will affect the length of the video. Machine learning technology can build an unsupervised learning system to summarize narrated video instructions to only a list of key steps. The system use Multiple Sequence Alignment (MSA) as text clustering method to align key steps. However, the existing system produces inconsistent performance in each video scenario even though it has the same number of Ground Truth.

Based on these problems, in this final project the author has analyzed the performance of unsupervised learning for narrated video instructions using text clustering based on parameters. Performance parameter is F1 Score that combines precision and recall. The system is run using statistical data processing software, while performance uses the Python programming language.

This research resulted average performance with F1 Score is 0,721. The score are obtained using parameter configuration which include maximum discovery steps (K=10), alignment cost configuration (Cs,Cd)=(-1,100), global template (L=120), and number of video data (N=30).

Keywords**:** *narrated instruction videos*, *unsupervised learning*, *multiple sequence alignment*, *text clustering*.