

Abstract

IYO (Intelligence Organizer) is an Android mobile application that can recognize user's speech command and search that information in the database. It works like directory call center service that can answer customer questions about directories automatically. The technology are Automatic Speech Recognition (ASR) to recognize speech and *alignment* to generate the *query*.

The method applied in ASR is Hidden Markov Model (HMM) using CMUSphinx tools. IYO uses the statistical trigram LM, which the advantages is users are not bound to the rules of grammar, so it seemed more natural. While the drawback is the high value of the *error*, but this can be overcome with the *alignment* process, in order to obtain the core purpose of the speech. The method of *alignment* is Longest Common Subsequence (LCS). LCS will seek maximum length of common subsequence between two *sequences*.

Testing conducted to compare the use of common statistical LM to LM *alignment*. The average Sentence *Error Rate* (SER) value of regular LM is about 21%, while the average *Query Error Rate* (QER) value of LM *alignment* is 8%. Based on these values, there is a decline in the value of *error* for generating queries by 13%.

Keywords: automatic speech recognition, language model, alignment, query.