Abstract

The development of science and technology have created something that facilitate human work. One is the recognition of human speech. With speech recognition, users can communicate with the system by voice. The system will convert voice signals into text. Text can be input or commands in an application. Problems still exist in speech recognition is speech recognition with different speaking speeds, speech recognition with different speakers and speech recognition in noisy environtment. It can improve the error rate.

This final project discusses how the different speaking speeds and the different speaker age affect accuracy. This final project will also discuss how noise affects the accuracy and how to handle that accuracy does not decrease using Wavelet Transform Discret. In noisy environments, before speech recognition, noise will be reduced so that the expected accuracy will increase. While speech recognition methods used are Mel-Frequency Cepstral Coefficients for feature extraction and Hidden Markov Models for classification. Voice recognition will be implemented on mobile devices based on Android.

The test results in noisy environments, after the noise is reduced, the resulting accuracy can be increased 12%. In environments with few noise, the resulting accuracy is also improved after the noise is reduced. Other testing, testing with speakers of different ages, the difference in accuracy is almost the same. This gives the conclusion, the data varied training can cover all of the human voice. Then test with different preparation sentences, grammar-based language models produce better accuracy than the probabilistic language models despite being added alignment.

Keywords : s*peech recognition, android, hidden markov model, noisy environtment*