ABSTRACT

Based speech recognition technology is growing rapidly and began to be applied in almost all areas. With the technology, the sound can be used as a tool to control a device remotely, replacing other means of remote control. It's including to operate households electronic devices.

In this thesis, Voice Command application designed to be implemented on the BeagleBoard for later use on control system of household electronic devices. Input of the device are in the form of voice commands which are then processed by the system using the Mel Frequency Cepstral Coefficient (MFCC) to extract the features of each command and the K-Nearest Neighbor method to classify the features. Then the device will respond and execute commands given appropriate command.

Testing of implementation into the BeagleBoard was using Simulink program from Matlab 2013b. The Simulink model system can represent every element that needed in the simulation program. On the other hand, the BeagleBoard couldn't support the amount of data that carried by the system in MFCC system. It resulted in the simulation couldn't be implemented into the BeagleBoard. So that the speech recognition to recognize the command failed to be implemented.

Keywords: Speech Recognition, BeagleBoard, home controllers, K-Nearest Neighbor