Abstract

Technology is something that is very beneficial for many people's lives for the moment. All aspects of life can take advantage of technology in accordance with the required fields, one of which is the control of the house. A house can be in automation just by sound alone. To make such a system is needed for a device that supports voice processing and control home devices.

In this thesis, the author has designed and implemented an automated lighting system uses voice-based microcontroller Arduino Uno. Broadly speaking, this system uses two methods, namely MFCCs as feature extraction and neural network Backpropagation as matching characteristics. Sound issued will enter through the Arduino Uno and will be extracted in accordance with the specifications that have been determined at the time of making the system MFCC program. The output of this system in the form of coefficients MFCCs are forwarded input to the process of matching the characteristics of neural network Backpropagation. At this process Arduino Uno will activate the relay to turn on or turn off the lights.

With this system, we can turn on and turn off the lights just by using voice only. The system generates 80.23% accuracy of the system stating that the system is quite feasible to become a light control system.

Keywords: *MFCC, Backpropagation, Arduino Uno, automatic lamp*