

ABSTRACT

Objective of this project is the **Implementation of Speech Recognition Algorithm for Stepper Motor Control Operations**. The project is to be designed to define four (4) words for stepper motor control such as '**start**', '**stop**', '**forward**', and '**reverse**'. Program is to be written for recognition of these words when utter by a user and run the motor as per the words uttered.

For speech recognition algorithm part, programming is written with the concept of speech recognition and programming parallel port using Visual Basic. User must speech the word properly by using the microphone, and then computer will detect or recognize the word and send the correct output through the parallel port to the microcontroller to control the operation of stepper motor. Microcontroller will check the input from the parallel port and turn on when it's a '**start**' condition or it will be turn off when its '**stop**' condition. For the '**forward**' condition, the stepper motor will rotate with the clockwise direction and for '**reverse**' condition; the stepper motor will rotate with the counterclockwise direction.

The project is to design and implement a microcontroller-based hardware to control the said operations with software. Software (programs) is developed to provide interface for speech circuit and stepper motor. Build the prototype model and test to meet the stated requirements. MicroBasic programming language is used to control the operations of PIC microcontroller and Visual Basic is used to program parallel port to send the signal to the microcontroller.

The project was successfully completed to meet the stated requirements.