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AI BASED ROBOT FOR EDUCATION INSTITUTION

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Abstract- *In this day and age the utilization of robot is continuing expanding. Robots can complete each work more viably and proficiently than a man can do. Thus one of such use of robot could be WELCOMING GUEST ROBOT. With the improvement of the economy and the necessity of the market, administration robots have gotten increasingly more consideration. This paper alludes to a useful and solid help robot framework for welcome visitors.following modules are used in this project- Arduino uno microcontroller, stepper motor, voice recognition module and robot dummy. The AI based robot will recognize the voice of guest and give response to guest. The robot can serve for historical centers, vacation spots, general stores, inns, etc because of its solid execution.*

Keywords- **Arduino Uno, Stepper motor, Voice recognition modules, Robot Dummy.**

I. INTRODUCTION

In the present era, the use of robots is increasing. Robots can perform all jobs more efficiently than humans. Robots are one of the most amazing invention of 21st century. As robots are the only invention that can be compared to the human body and mind. Robots can even challenge the human mind in the coming time. The efficiency of robot is much more than a human, as the human body has some limits but the robots don't have any limit.

The purpose of this project was to create a robotic dummy that would welcome the guest at restaurant, hotels, café, and educational institution. In our project, the microcontroller on the robot would be able to recognize the voice and give response to the guest. Also this welcoming robot would be able to do handshake with guest. This project uses the following modules from the Arduino uno microcontroller, stepper motor, voice recognition module, and robot dummy.

II. COMPONENT USED

A. ARDUINO MICROCONTROLLER UNO

Arduino is an open source prototype platform for electronics based on easy-to-use hardware and software.
Technically speaking, the Arduino is a microcontroller-based prototype board that can be used to develop digital devices that can read inputs such as finger buttons, touch screens, and sensor lights and place them like LED lights. Electric output, rotating motor, playing songs from speakers, etc. The purpose of Arduino is to introduce the world of electronics to those with little or no experience in the field of electronics (amateurs, designers, artists, etc.).

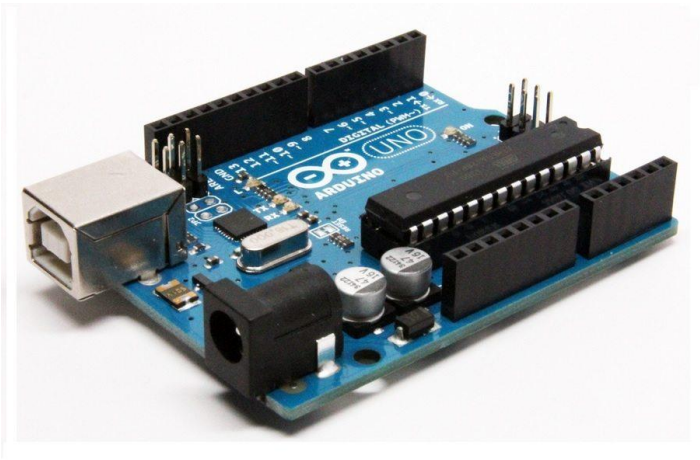

Fig. 1 – Arduino Uno

B. STEPPER MOTOR

DC motors that move in discrete steps are stepper motors. The multiple coil are organised in a group called "phase". The motor turns once by energizing the phases in sequence. Computer controlled stepping allows for very accurate positioning and speed control. Therefore, stepper motors are the perfect motor for many precision motion control applications.

There are size ,style and charateristics of steeper motor. This guide details what you need to know to pick the right motor for the job.

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Fig. 2 – Stepper Motor

C. VOICE RECOGNITION MODULE

The voice recognition module is a compact and easy to control voice recognition board. A speaker-related module in which support up to 80 voice command. You can train any sound as a command. The module must train before recognize voice command. Voice commands are stored in large groups, such as libraries. You can import any of the seven voice commands in the library into the recognition engine. This means that seven commands are valid at the same time.

The board has two control methods: a serial port (all functions) and a general-purpose input pin (some functions). The universal output pins on the board can generate various waveforms when recognizing the corresponding voice command.

Fig. 3- Voice recognition module

D. ROBOT DUMMY

A Dummy (also known as mannequins, in the form of dummy, lying person or dress) are articulated dolls commonly used by tracery, tailors, artists, dressmakers and many more, mainly for displaying or trying on clothing. You can also have life-sized dolls that simulate airways for teaching cardiopulmonary resuscitation, first aid and human models for computer simulation to simulate human behavior and advanced airway management skills (such as tracheal intubation).

Fig. 4- Dummy of Human

F. PROCESSING IDE

Processing is an open artificial language, an ide(integrated development environment) designed for the new media arts, electronic arts, and visual style communities that teaches the basics of programming in a highly visual environment and provides electronic inspiration.

G. ARDUINO IDE(integrated development environment)

The arduino IDE is a cross- platform application written in Java, from the IDE of process artificial language, and @wiring is here. The aim is to introduce unfamiliar package development programs to artists and exchange beginners.

III METHODOLOGY

It's a robot that recognizes the voice of the person as someone comes near it. The robot converts the physical voice signal to electrical signal and sends it to the microcontroller board. Microcontroller will process the received signal. According to the received signal dummy will perform handshaking and give response back to the person.

Stepper motor is fixed at elbow which is used to perform handshake move. And Voice recognition module is fixed at mouth of the robot which sense the person's voice and also used to response back to the person.

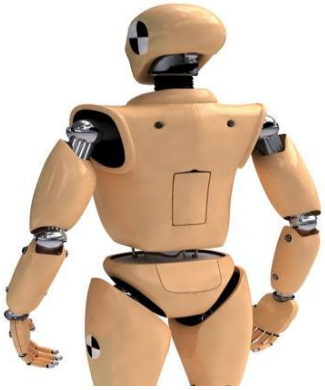

Fig. 5– Dummy Robot

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IV. APPLICATION

The various applications could be used as:

1. This could be employed in educational institutes for appraisal purpose.
2. This could be used to welcome a guest in a hotel.
3. This could be used in medical field to guide the patient to find the particular location.
4. This could also be used in defence system to recognize authorized voice.
5. It able to guide blind persons to reach a Destination with use of voice feature.

V. FUTURE SCOPE

Although every robots uses today have specific tasks to do, the goal is to make universal robots, robots flexible enough to perform tasks that human can do.

VI. CONCLUSION

In this project, a robot is controlled with the voice commands. Voice commands received by a microphone. The received command transform to the form in such a way thar robot can recognize it. The final trasformed commands is sent to the robot and the robot move appropriately. The voice interface configuration must be adjusted to the technological confines of the recognition engine. Otherwise, the difference between the tatic and the engine will make the technique inappropriate, even though it may be, by itself, adequate. The menu interface has consider to be an easy-to apply methodology, simple than using natural language processing method. The former has been preferred by the test operators, mainly of the restrictions of

