

**PES UNIVERSITY**

**(Established under Karnataka Act No. 16 of 2013)**

**100-ft Ring Road, Bengaluru – 560 085, Karnataka, India**

***Report on***

**‘VOICE CONTROLLED CAR USING ARDUINO’**

***Submitted by***

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**Aug - Dec 2019**

**under the guidance of**

**Dr. Anuradha M**

**Professor and Chairperson (UG & PG Studies)**

**Department of ECE**

**PES University**

**Bengaluru -560085**

**FACULTY OF ECE**

**DEPARTMENT OF ECE**

**PROGRAM B.TECH**



**CERTIFICATE**

*This is to certify that the Report entitled*

**‘VOICE CONTROLLED CAR USING ARDUINO’**

*is a bonafide work carried out by*

**ROHAN N KALPAVRUKSHA PES1201802830**

**ROSHAN N KALPAVRUKSHA PES1201802834**

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In partial fulfillment for the completion of 3rd semester mini project in the Program of Study of B.Tech in Electronics and Communication Engineering under rules and regulations of PES University, Bengaluru during the period Aug – Dec, 2019. It is certified that all corrections/suggestions indicated for internal assessment have been incorporated in the report. The report has been approved as it satisfies the 3rd semester academic requirements in respect of mini project work.

*Signature with date & Seal*

*Guide & Chairperson*

( Dr. Anuradha M)

*Name/s of the student/s*

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Name of the examiners:

1.

2.

3.

**DECLARATION**

We, **ROHAN N KALPAVRUKSHA**, **ROSHAN N KALPAVRUKSHA**, **MOHAMMED ASHIQ**  hereby declare that the report entitled, ‘**VOICE CONTROLLED CAR USING ARDUINO’*,*** is an original work carried out under the guidance of **Dr. Anuradha M**, Professor and Chairperson (UG & PG Studies), Department of ECE. This is being submitted in partial fulfillment of the requirements for completion of 3rd Semester 2 credit Course (Mini Project) in the Program of study of B.Tech in Electronics and Communication Engineering.

**PLACE:PES UNIVERSITY,RR CAMPUS**

**DATE:26-11-2019**

**NAME AND SIGNATURE OF THE CANDIDATE**

1.**ROHAN N KALPAVRUKSHA PES1201802830**

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**INTRODUCTION**

* This project is about voice controlled car .This project has several parts like Speech recognition ,speech to text ,wireless data transmission ,multiple motor controller .
* These commands are given to Bluetooth module and received via android application(BT voice control) .The integration of control unit with Bluetooth device is done to capture and read voice command via android application.
* The vehicle operates as per the command received with the help of Arduino(motors,wheel)
* Sensors are added to the model so that led is lit indicating the driver when there is an obstacle in front of the car.
* This car ensures easier and safe driving experience.

**LITERATURE SURVEY**

* When we say voice control, the first term that needs to be considered is Speech Recognition.
* Speech recognition circuit (SRC) is programmable.You can program and train the SRC to recognize the unique words you want to use.
* HC 05 BT Module –Bluetooth sensor-it has a range of <100m
* L298N Module-To control the speed and direction of DC Motors
* Arduino- Arduino is an open source platform used for building electronics projects.
* Arduino consists of
* *Physical programmable circuit board*
* *Software /IDE* –to write and upload code to physical board
* We can simply use a *usb cable* to load the code to the board
* It uses a simplified version of *c++*
* The *uno* is a popular board family

**METHODOLOGY/MODELLING**

* Voice Input
  1. Forward , Back
  2. Left ,Right
  3. Stop
  4. Dance-circular motion
* Arduino and motor drivers
  1. Program is coded and run on the laptop
  2. Code is dumped into it through usb cable
  3. Motor Driver-Control of direction and speed
  4. Motors behave accordingly
* Sensors
  1. With help of ultrasonic sensors-Can sense obstacle
  2. With a distance of sensing upto 10cm
  3. Led is lit indicating the driver about the obstacle in front of it.

**RESULTS AND DISCUSSION**

**VOICE COMMANDS and WHEELS ACTION**

**(L-LOW H-HIGH)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Commands** | **Front-left** | **Front-right** | **Back-Left** | **Back-Right** |
| **Forward** | H | H | H | H |
| **Back** | L | L | H | H |
| **Left** | LH | HH | LH | LH |
| **Right** | HH | LH | LH | LH |
| **Stop** | L | L | L | L |

**SENSORS**

**Obstacle** in front of the car or ultrasonic sensors(**<10cm**)-**Led is lit**

**CONCLUSION**

* This can be used in places where humans find it difficult to reach but voice can reach.Eg-small pipeline,fire situations,toxic areas.
* This car can reduce man effort in this busy traffic world and reduce accidents.
* This car can be used by limb disabled people.
* This can replace our fuel based cars

**FUTURE SCOPE**

* Work has been restricted to short range module ,use of long range modules can result in connectivity with the car for long distances.
* Camera can be installed to the mini car to capture images from man restricted areas.
* Automatic Targeting system can be implemented in the robot for tracking the target.

**REFERENCES**

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