FOOD SERVING ROBOT

Abstract:

The main problem that is faced by most food restaurants these days is the lack of a proper interface with the consumer and the management staff. This interface is what we call as the service offered by the staff towards its consumers. The problem is that there exist many loopholes in this kind of service. Either the waiter/steward forgets the order, or the people are uncomfortable or dissatisfied with such kind of service.

There are numerous examples that clearly prove that the waiter/steward system is an inefficient and also a tedious way to run any bar/cafeteria/diner etc. The human mind is such that it always tends to make some sort of errors in judgement of decision. People find it difficult to satisfy the customers’ needs as they are incapable to relate with them on a personal level.

First impressions are important. Poor customer service is often a deal breaker for people. Your food may be outstanding, your table setting exquisite and your ambience delightful, but if your customer service is bad, Customers will remember.

One way to end this is to introduce a system that can replace the friction in between the consumer and the staffs with the help of a predesigned/customizable semi autonomous robot. This kind of robot will put an end to all human efforts. We can have better logistics by means of this type of service and application.

# **Introduction**

Once a customer orders food at the counter, there is no more need to wait and walk all the way back to the counter to collect it. The food, which is readied in the kitchen, is placed on the robot. After a go-ahead, the robot begins its journey along from the kitchen to the tables. It is also equipped with sensors that gauge the distance between itself and passers-by. Using wheels for traction, it follows a path specified by the controller by means of a mobile app based platform of communication.

The objective is to develop a small scale robot, called the food Serving Robot, which can help in the progress in the field of the robotic assistance technologies. A robot that functions as an assistant should be able to help in different environments. It would be able to deliver messages or items, project video and pictures, move and navigate on its own etc. The basic objective of the Serving Robot is to serve the customer effectively. It takes their orders and takes care of transporting food/refreshment to them.

### **METHODOLOGY**

The prototype model of an robot will possibly use sensors, node MCU, L293D (Motor Driver) and 5kg Torque side shaft motors including a GSM module

**SOFTWARE DESCRIPTION**

**HARDWARE DESCRIPTION**

## **MICROCONTROLLERS**

NodeMCU: NodeMCU includes firmware which runs on the ESP8266 Wi-Fi [SoC](https://en.wikipedia.org/wiki/System_on_a_chip) from Espress if Systems, and hardware which is based on the ESP-12 module. The term "NodeMCU" by default refers to the firmware rather than the dev kits. The firmware uses the [Lua](https://en.wikipedia.org/wiki/Lua_(programming_language)) scripting language. It is based on the [eLua](http://www.eluaproject.net/) project, and built on the Espressif Non-OS SDK for ESP8266. It uses many open source projects,.

BENCHMARKING:

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| --- | --- | --- |
| MICRO CONTROLLER | USER INTERFACE | PRICE |
| Arduino+ESP8266 | Easy | 700/- |
| Node MCU | Easy | 350/- |
| Raspberry pie | Hard | 2999/- |
| Gsm module | Hard | 1000/- |

## B. **SERVO MOTOR**

## The servo motors are used for the movement of the line follower robot. Servo motor is a special type of motor which is automatically operated up to certain limit for a given command with help of error-sensing feedback to correct the performance. Working Servo motor works on the principle that-A servo motor is basically a DC motor (in some special cases it is AC motor) along with some other special purpose components that make a DC motor a servo. In a servo unit, a small DC motor, a potentiometer, gear arrangement and an intelligent circuitry is found. The intelligent circuitry along with the potentiometer makes the servo to rotate accordingly.

## C. **POWER SUPPLY**

## Two power supplies are used one ac supply for reception section and one battery supply for robot. The battery for the robot should be rechargeable.

## **The CAD design of outer skeleton**waiter v1

## IMPLEMENTATION

When the customer comes he will order the food through the voice control and that will be recognised by the gsm module. Then the GSM module sends the order to the arduino and the arduino helps to display the order on the LCD screen. As soon as it displays the order is placed on the bot and from then it is moved to the tables through an app.This App is a Wi-Fi based App and Wi-Fi module know as NodeMCU Esp28666 .

**Conclusion:**