



Advance Serving Robot for Restaurant

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Abstract:

In today's world of technology and scientific development the use of robot is going on increasing. Robots today are able to carry out every work more effectively and efficiently than a man can do; they are more precise as well as work effective. Hence one of such application of robot could be in restaurant as waiter. There are many areas of research that could be done for a serving robot. In this paper we have tried to demonstrate a prototype of Autonomous Serving Robot which will bring order and serve the food to the customer. The implementation is done with available resources to reduce the cost of project. In this paper we demonstrate the idea of automatic menu serving robot. We have made a robot which provides proper service to customer in restaurant. If a person wants to give an order, then he simply connect to a Bluetooth connection available which is assign by the restaurant, and the menu card will be displayed on their mobile screen. The whole system makes open use of Bluetooth as well as RF technology.

Keywords: RF module, LCD, Microcontroller, Bluetooth, Coordinates.

I. INTRODUCTION

Restaurant is a now days the most visited place by the people, where they sit and eat meals that are cooked and served by the chef and the waiters respectively. In traditional restaurant system orders are taken by a waiter and they bring the food when it is ready. After eating the food customers will pay the bill. This system relies on large numbers of manpower to handle customer reservation, inquiry about them, ordering food, placing order on table, reminding dishes of customer. Therefore, in order to improve the service quality for customers effectively by using advanced technologies has received much attention in recent years. Intelligent Restaurant is all about getting all of your different touch-points working together connected, sharing information, personalizing experiences and speeding processes. In today's restaurant Digital multi-touch menu cards and other forms of digital facility are replacing old fashioned services like waiters can take order from customer and serve them. Intelligent Robot system delivers almost infinite flexibility in promoting meal and snack options. Intelligent Robot system uses technologies innovatively in a modern restaurant such as LCD, RF module, database, Bluetooth connection & coordinate following Robot to enhance quality of services and to enrich customer's dining experience. A coordinate following robot is designed using sensor operated motors to keep track the coordinate path programmed in the micro controller. This replaces pen-paper which is used by waiter to take an order. It is requiring customer to order via there smart phones by connecting it to the Bluetooth network assign by the restaurant, when connected it will display a menu card on their device screen. Customers view the menu, price and make an order directly using their smart phone. Then, their order will be sent to the kitchen and displayed on the LCD at the kitchen.

II. LITERATURE SURVEY

[1] Sakari Pieska, Juhana Jauhiainen, Markus Liuska, Antti Auno has propose in a paper that the customer's application works on an Android tablet. This application is connected to the database and download real-time restaurant's menu. The customer can browse the menu and order it. Using the software, customer can call the waiter by pressing a button. The waiter comes to confirm the order and count the bill. This menu can be displayed in the kitchen's display. When this food items are ready then the kitchen staff can mark them as done. And this food items are visible in the cashier and also in waiter application so that they deliver them to the customer.

[2] Tan-Hsu Tan, Ching-Su Chang, and Yung-Fu Chen has proposed an intelligent e-restaurant for customer centric service. This system provides an online menu ordering and reservation-making process, and also personal menu recommendation service. With the help of RFID-based membership cards, waiters can immediately identify help of arduino. LEDs will be place on the path of robots customers according to their consumption records. The waiter uses a PDA to take orders from the customer and with the use of WLAN order is send to the kitchen. Then chefs prepare the menu and waiter can deliver it to customer. When the customer has finished the meal, the cashier uses RFID-based PDA to identify the membership ID to calculate the bill.

[3] Sun Guiling, SongQingqing has proposed selfservice ordering information system based on ZigBee wireless technology. This system uses FFD (Full Function Device) and RFD (Reduced Function Device). FFD is network coordinator that can communicate with other device; RFD is used in star topology network, which can communicate with the FFD.

[4] Rupali Sapli, Ketaki Zujarrao, Siddhi Patil, Ketan Deshmukh has proposed that the restaurant will be consisting of the black lines, LED and tables with switches. For interconnection the LEDs to glow and switches is done with the help of arduino. LEDs will be place on the path of robots. When the customer comes he will press the button to get refreshment. As the button will be pressed (switch is on), the LED at the starting point and the LED at the junction from where robot will move to serve towards the table will glow. As the LED at starting point will glow the robot will initiate its program to follow black line. The robot will start following black line, when it will get a white light in the way it will turn left or right accordingly, and serve the refreshment. After serving it will again follow the returning black line path and come to the starting position.

III. CONCLUSION

As we see the robots are increasingly becoming the part of everyday life; the use of Serving Robot can be extending to various functional purposes. This system allows customers to order food their own smart phones, which will wirelessly Send the order to the counter via Bluetooth module. A coordinate following robot is used to carry meal from counter to customer. We have tried to implement the robot waiter from the existing appliances which could be use by elderly people or disabled people for house service. Such types of robot system can work in different areas of human societies like hospitals, libraries and restaurants with small change in programming areas.

IV. REFERENCES

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