

Robotic Waiter for Restaurants

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ABSTRACT

In today's world, robot use is continuing to increase. The robotics technology is replacing man work at a rapid pace in the world. In a restaurants and hotels, the customers face a lot of problems due to congestion at peak hours, unavailability of waiters and due to manual order processing. Our Food Serving Robot should solve these limitations. It is used for food and beverage orders. On Robot, the LCD touch screen is put where we can order the food. The client places the order through an automated menu bar. Using the contact network this order is sent to the kitchen and reception. Afterwards the waiter robot moves food from the kitchen to the customer. Robots can do any job more efficiently and effectively than a man can do.

1. INTRODUCTION

Digital multi-touch menu cards and other sorts of digital facilities in today's restaurant are replacing old-fashioned services like waiters can take customer order and serve them. Intelligent restaurant program has virtually infinite versatility in supporting meal and snack choices. Intelligent restaurant system makes creative use of technology in an exceedingly modern restaurant like multi-touch LCD with Arduino super, RF module, Robot database & line to enhance service quality and enrich the dining experience of shoppers. A line following robot is intended to stay track of the road route predetermined for meal serving using sensor controlled motors. Digital payment is formed via PayPal. during this paper we demonstrate the concept of serving robot with automatic menu. we've created a robot during this paper that has proper service to restaurant customers. If an individual wants to place an order then the robot are often called by simply pressing a activate his table the whole system uses RF-technology. Robot checks the person's status automatically. It reaches the correct destination and folks pass their order to robot The robot sends the order to counter where a receiver is positioned through wireless technology (RF technology), this receiver receives the signal from the robot (through RF technology), and the person at the counter automatically checks the order, prepares it and places it on the robot and the robot again provides proper service to the respective person. The robot will get the order from several people by hitting their call tables nearby. The robot will serve a customer and at the same time accept an order from another customer.

2. SERVER ROBOTS IN NEPAL

Under the slogan "where food meets technology," a newly opened restaurant in Nepalese capital uses robots as waiters. The Naulo Restaurant ("naulo" means new in Nepal) operates with the help of 5 robots, three named Ginger and two named Ferry, designed and made by Paaila Technology, A company founded by six young engineers in Nepal; specializing in robotics and AI (AI) technology."Naulo is the first digitized robotic restaurant not only in Nepal but also in South Asia. We believe our robot is one in every of the world's most advanced service robots, user-friendly and really simple to figure," said Binay Raut, CEO of Paaila Technology and Naulo Restaurant, to Xinhua. The restaurant features a menu installed on tables in digital displays, from which orders is taken directly within the kitchen. The robots collect them from the kitchen counter after the dishes are set, and serve the purchasers. This can be the primary time a restaurant has used the "Made in Nepal" robots as servers within the Himalayan region.

3. WORKING MODEL

The arena will feature black lines, LEDs, and turn tables. LEDs should be mounted on the robots. When the client arrives he presses the button to get some refreshment on his seat. The LED at the point of departure and the LED at the junction from which the robot moves to the table will shine. The robot will activate its software to follow black line as the LED at the starting point glows. After black the robot will start having a white light in the way it stops and it will take the customer's order and give it to counter. After the food is cooked it will return to serve the meal. After serving it, the returning black line route will follow again and arrive in the starting position. The modal is composed of the following sections.

3.1 Line Follower

The complete route inside the restaurant is followed by a line follower robot. It has sensors in black line on it. Any time the robot starts it makes sense for black colour. The robot will step forward on that line if sensor detects black colour. Whenever the sensor value increases, it is time for the robot to make a decision to turn left or Right.

3.2 Obstacle Detector

An obstacle detector is a smart device that can automatically detect obstacles along its way. It is conceived using an IR sensor. The idea behind it is that there will be a change in the output of the sensor if an obstacle comes in front of the IR sensor and this change will be detected by microcontroller and then the obstacle is detected and the microcontroller sends a signal to the buzzer and the buzzer's beep indicates the presence of the obstacle in the route.

3.3 Wireless Technology

Wireless technology (RF Technology) is used to indicate the customer's presence as well as to indicate the order received in the counter area.

3.4 Position Detector

The LDR is used to classify the customer who wants to order the service to the correct location. When the customer pressed the switch on his table, an LED glows in front of his table, which the robot detects as it follows its route to his table. There is a counter receiving the order the robot has taken. Several tables can be arranged in circle. That is done to provide the robot with a simple course. Besides this, a circular pattern for the robot's movement is of black colour. As shown in the figure, we can arrange our restaurant; there may be some other arrangement. It is composed of counter, robot and tables arrangement.

4. ADVANTAGES

Function quickly and effectively when we use robots.

- i. Decrease Customer waiting time
- ii. Single time Investment into the program.
- iii. iii. Work can be quicker, and can reduce labor costs.
- IV. For customers making their own orders, the number of waiter staff can be reduced.
- V. Implementations are carried out precisely and with a high degree of repeatability.

5. CONCLUSION

As we see the robots are increasingly becoming the a part of everyday life; the utilization of Serving Robot is be various functional purposes. this technique allows customers to order food by LCD module surface which is programmed by embedded c, which is wirelessly connected to the counter via RF module. A robot line is employed for transporting meal from counter to customer. We've tried to include the robot waiter from this equipment that might be used for house service by elderly people or people with disabilities. These kinds of robot systems can operate in several areas of human society, like hospitals, libraries and restaurants, with minor programming changes.

6. REFERENCES

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