# Robotic Receptionist

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*Abstract- many scientists are researching about human- robot social interaction, which is one of the areas that remain relatively unexplored. The Robot receptionist ("robot receptionist") project which is a part of the Social Robots Project is researching how a social robot can remain compelling or interactive over a long period of time. Computers are becoming a indispensable part in today's world because most of us think that they are not friendly enough. Intelligent robots will fill this barrier of computers not being friendly. We can implement a robot in a company reception desk for computerized guidance. Sowe introduce a robot "ROBO-R" for the computerized reception desk. ROBO-R remains stationary inside a small booth near the main entrance. Once it gets the signal of visitor in the office, ROBO-R can interact with the visitors and welcome them. ROBO-Rasks the visitor there purpose of the visit and intimates the message to the concern person and wait for the response from the concern person.*

## I. INTRODUCTION

When the term robot is used many people picture it as a machine that imitates a human- like the androids in Star Wars, Terminator and Star Trek. However much of these robots which capture our imaginations still inhabit science fiction. In today's world we are surrounded by robots and as robots make our life easier it has become a inseparable part of our life so we have put forwarded an idea of a robotic receptionist which can fulfil the job of a receptionist in an office/company. We are introducing a robot which will be user friendly. With the growing technology and the vast use of artificial intelligence, the ROBO-R does all the work which a receptionist can do. Use of image processing, speech to speech converter, speech to text converter and natural language will develop a humanoid robot. IBM Watson is being used as a questioning answering computer system which is capable of answering questions asked by visitors. The receptionist will be installed with a Raspberry Pi and HD camera and we can program it as an artificial intelligence. ROBO-R can interact with visitor by asking the purpose of their visit or the person they want to meet in that company. Accordingly, the robotic receptionist sends a request to the concerned person and fix an appointment. The requested person asked by the visitor gets a notification which is send by the robot and according to the notification the requested person must instruct back to the robot whether he/she is free to meet the visitor. The robot can then guide the visitor (if the concerned person is free) to the concerned person to his/her cabin. The robotic receptionist captures an image of each and every visitor to keep a record of the visitors and to whom they wanted to meet.

## II. DESIGNING OF RECEPTIONIST ROBOT

The robot in all cases uses both speech and gesture in its answer to indicate the correct direction to the visitor. As a fresult from this paper we can take the concept of speech and gesture recognition which helps the visitor in finding their respective direction which has been indicated by the robot. Along with this how the robot is able to initiate a dialog and offer services by itself on detecting a human in its social interaction area.

In our system, the robot is able to interact with the visitors, it can initiate a dialog and offer services too. And if any visitors ask the robot any questions for which it can't find out the meaning immediately it sends the message to the admin. This paper describes a study on anthropomorphism of a receptionist robot made for people depending on the appearance and on the voice of the receptionist. The motivation for this research is to investigate how a receptionist robot should be designed to be employed.In this paper, the authors focus specifically on the effect of two different types of appearance (conversational agent or humanoid robot) and voice (human and robotic). In future, we can use this methodology in our proposed system for the improvement of our project.

## III. NEED FOR DEVELOPMENT

- Human receptionist are involved in every kind of jobs such as fixing appointments, guiding the visitors etc which becomes very hectic for them which may lead to confusion and the tasks may remain undone.
- Due to work pressure the receptionist may forget the important tasks that are to be done which may result in loss of customers.
- Need to maintain a record of every visitor who had visited the company.

## IV. BLOCK DIAGRAM WITH EXPLANATION
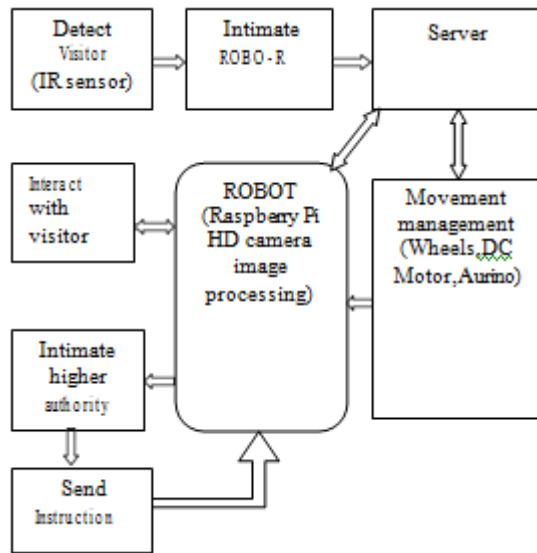


**Explanation:**

**1. Detect Visitor**

The Robot is placed in the reception. When any guest comes inside, the detector detects and send signal to the ROBOR. As soon as the ROBOR receives the signal, it moves towards the entrance and welcomes the guest.

**2. Interaction**

Once the visitor enters the office, ROBOR makes them sit and starts interacting with them. It takes the input from the guests and the speech of the guest is converted into text using google TTS and applies NLP. Based on guest's query ROBOR replies and intimate the concern person. Once the concern person gets the notification in his android app, he can send the instruction to ROBOR. All the conversations are stored in the server. Based on the instruction from the concerned person, it convey the message to the guest. ROBOR captures the image of all the guest with their details and then transmits to the server.

**3. Movement**

The department consists of few routes and each route contains several points. Based on the instruction, the ROBOR selects a particular route and moves in the route. It starts from the first point of the route and moves towards next point on the same route. It changes the direction from a point while moving towards the next point based on the predefined instruction.

**4. Second Visit**

As the ROBOR captures the face images of each guest along with their details in the server, this repeats when the guest visits the office again. In the server, the image is processed and apply the face recognition algorithm. If matches found, retrieve the previous visit information and based on that starts interaction.

## V. PLANNING ALGORITHM
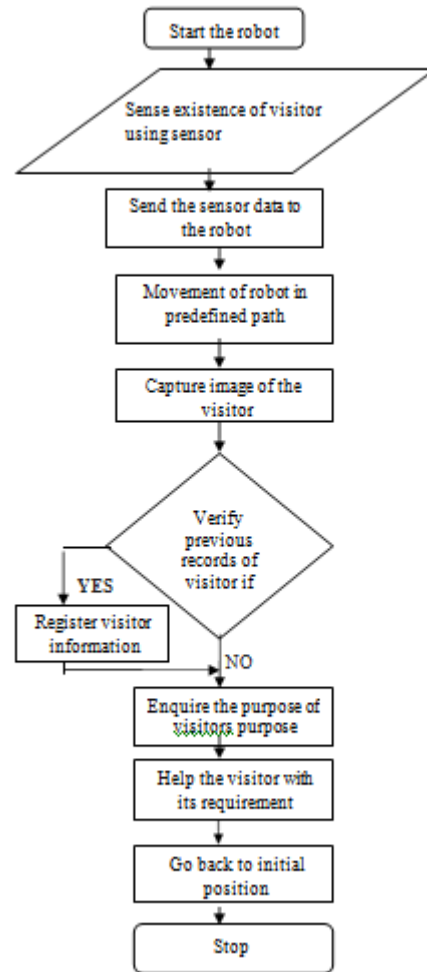


## VI. CONCLUSION

In this project we are presenting a robotic receptionist ROBO-R in an office. Working as part of a fully automated visitor management solution, ROBO-R will greet and support employees, visitors, with a range of front desk, guiding about the directions in office. ROBO-R can give the details of meetings to be conducted, with technology they can monitor how clients and visitors respond to robots. It will help us to continue to develop and improvise the client-employee relationship. Here we are assembling the robot with artificial intelligence. This includes different modules responsible for

detecting the presence of a human and obtaining information from its database. The processing time to obtain a speech-to-speech or speech-to-text transcript is at an acceptance level. The system of human identification and tracking of its presence are the basic foundation of the proposed system. With the emerging technology and automation robots can offer for the future workplace and they will need a strategy to integrate humans and robots.

## VII. ACKNOWLEDGEMENT

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