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MEDICAL ASSISTANCE ROBOT AGAINST COVID-19

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Abstract: The medical outbreak during COVID-19 has resulted in the manufacturing and service sectors being badly hit globally. Since there is very less chance to get safeguard from COVID-19 virus even after the vaccination or any proven treatment available, there is an urgent need to take necessary steps to prevent the spread of this virus. As the virus spreads with human-to-human interaction, lockdown has been declared in many countries, and the public is advised to observe social distancing strictly. Robots can undertake human-like activities and can be gainfully programmed to replace some of the human interactions. Through this paper, we identify and propose the introduction of robots to take up this challenge in the fight against the COVID-19 pandemic. We did a comprehensive review of the literature to identify robots' possible applications in the management of epidemics and pandemics of this nature.

Index Terms *- Arduioni, camera, health monitoring, IoT in Healthcare, contactless*

I. INTRODUCTION

Health assistance of COVID-19 affected patients with modern technology and low cost systems have become very Important in this pandemic times. In these times when there is a Need to monitor or give medical assistance to a large number of Patients there is a immediate need of medical system that is cost Effective and fast responding. Using our project it will help Doctors to manage patients by keeping himself/herself and other Medical staff at a safe distance from the patients. So it will Improve the quality of medical assistance of our country. Not Only COVID-19 but many other patients suffering from any Contagious disease can be treated using the same. Our system Will reduce the amount of doctors and other medical staff visits To the patients and thus reduce the risk of getting contracted to The disease. So our project will help to control the wide spread Of diseases like COVID-19.To overcome all the disadvantages Of currently existing automated medical systems we have Created a system that will continously monitor patients using

II. LITERATURE REVIEW

Raghavendra K K [1] (IOT based health monitoring systems Published in June2019): Raghavendra K K have proposed a Health monitoring system using IOT. It collects the status data Through the system which includes patient's temperature, body Movement, blood pressure, heart rate and ECG and sends Emergency alert to patients doctor. It uses the raw data from the Smart sensors and sends it to a cloud server where it can be Further analyzed. If these parameters go abnormal it will Automatically send an alert SMS to the doctor.

Shubham Banka [2] (Emergency Alert Section Published in Nov 2018): Shubham Banka proposed an automatic system to Monitor patient's health parameters such as body temperature,Heart rate, body movements, blood pressure and extended the System to predict,If the patient is suffering from some of the chronic disorder or Disease using the observed health parameters and symptoms Obtained by the system. The unprocessed data from various

IoT devices will be obtained and stored on the server, these Devices consists of temperature sensor, vibration sensor, BP Sensor and pulse sensor.

M. P. Nirmala, Rampriya Mahendran [3] (Wireless Health Monitoring System) Seniors have to make frequent visits to their Doctor to get. Their vital signs measured. The vital signs include Pulse rate, Blood pressure, Body temperature, ECG, etc.Though The patient is not in dangerous situation, the doctors would still Need confirmation on their health.to the patients by indicating it Through turning ON the LEDs.

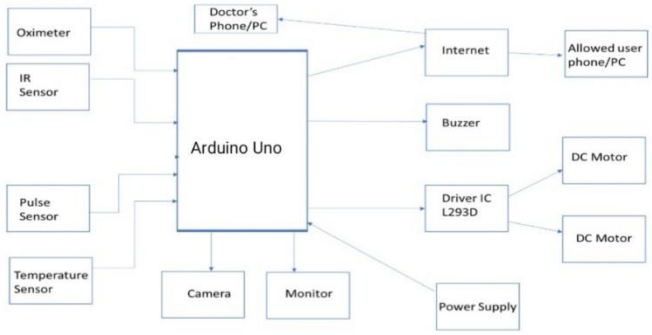
Niels F. Garmann-Johnsen [4] (Service Robotics in Healthcare)The term "service robot" implies that these robots Are able to perform tasks in an unconstrained, human centered Environment operates semi- or fully autonomously to perform Services robotic drawer reduce errors in dispensing.

Diksha Singh, Pooja Zaware, Dr. Anil Nandgaonkar [5] (surveillance robot Published in May 2021):System is based on Wi-Fi technology which is better than Bluetooth surveillance System and it is more efficient. System is used live audio and Video streaming. Stemming of video is good module Operates on Globally on large distance. As compared to other surveillance System based on Bluetooth technology, WIFI surveillance robot Is more efficient. The main objective is to provide low cost and More efficient surveillance system.

Nyamatulla M. Patel, [6] (Patient Healthcare Monitoring System Using Raspberry Pi) The system of IOT based patient Health monitoring system which includes a server connected Raspberry pi3 B+ board that uploads the data received by the Sensors. The GSM technology helps the server to update data on Website.

III. EASE OF USE

Patient health monitoring system consists Of biological sensors connected to Arduino Module. This sensor is capable to monitor the Patient's all body parameter reading and transmit To the cloud. Arduino can be used as a data Aggregator as well as processor. Patients And doctor's smartphone is used as a monitor System.



The Sensors system is use for getting the Information or reading about health from the patients body, and converted into signals. This Signal is provided for the processing to Arduino,which is a IoT Module. The pi module then Displays the information on monitor and also Stored the information on the cloud. This Information can be accessed by the doctor on his Mobile phone. In the emergency system will sent The alert notification to a doctor for medication.

The flow diagram of the system is shown

Below, data which taken by a sensors are Displayed on the monitor and store on cloud for Future use. If reading goes above threshold value, Then immediate alert notification will be sent to The doctor. First of all, all connected sensors will Measure the body health parameter continuously And store over web page, then system will Compare the data with Threshold Value If any Output of the sensors goes beyond the threshold Value, then immediate an alert notification will Transfer to the doctors and caretakers mobile Phone which is connected to the cloud. And if the Output of the sensors is behind to the its set value, Then that process will continue again

IV. FUTURE SCOPE:

According to the availability of the sensors In future more parameter can be sensed and Monitored which will improve the efficiency of The wireless monitoring system in biomedical Field. A graphical LCD can be used to display a Graph of rate of change of health parameters over Time. The whole health monitoring system can be Integrated into a small compact unit as small as a Cell phone or a wrist watch. This will help the Patients to easily carry this device with them Wherever they go. In addition, with medical Application we can use our system in industrial And agricultural application by using sensors like Humidity sensors, fertility check sensors, etc.

V. CONCLUSION:

The system which we prefer to develop is Not only help to monitoring the health of the Patient when he is in the bed but also when he is Out of bed. The main idea of the system is to sendThe information through the webpage to Continuous monitoring of the patient's body Health parameter over internet. Such a system Would continually detect the important body Parameters like body temperature, pulse and Would compare it against threshold range set and If these values cross the specific limit, it Immediately alerts the doctor and staff. In this System the data will collect with the help of Sensor and transmit to the cloud through the Wi-Fi module which provides information to doctor Or caretaker. The doctor can easily access the Patients' health anytime from anywhere. An LCD And buzzer is also connected to the Arduino for the patients to monitor their health statuscontinuously. In case of emergency it would automatically alert the doctor and relative of the patient. In such case the patient will get rapid medical help and also would save time and energy of the relatives, who cannot be near the patient all the time.

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