VIRTUAL DOCTOR ROBOT BASED ON ROS2

ROS 2 (Robot Operating System 2) is an open source software development kit for robotics applications. The purpose of ROS 2 is to offer a standard software platform to developers across industries that will carry them from research and prototyping through to deployment and production. ROS 2 builds on the success of ROS 1, which is used today in myriad obotics applications around the world. Can be programmed in Python or C++. We will use Linux ubuntu–20.04.5 as an OS.

- **Description of Project :**

Occasionally, doctors are required to work at every hospital and emergency room. However, it is not practical for every doctor to be accessible at all locations at all times. The drawback of video calling is that it requires using a PC or laptop at a desk to make a connection. This restricts the doctor's ability to freely travel among hospital rooms, see patients, or even be in the operating room as needed.

To assist in resolving this issue, we will create a virtual doctor robot that enables a doctor to virtually walk about and converse with individuals in faraway locations as needed. There are many benefits that this robot offers to doctors, including:

- Doctors ability to be at anyplace anytime
- Doctors can move around the patient with ease
- Doctors can see medical reports remotely via video calls
- Doctors can move around in other rooms.

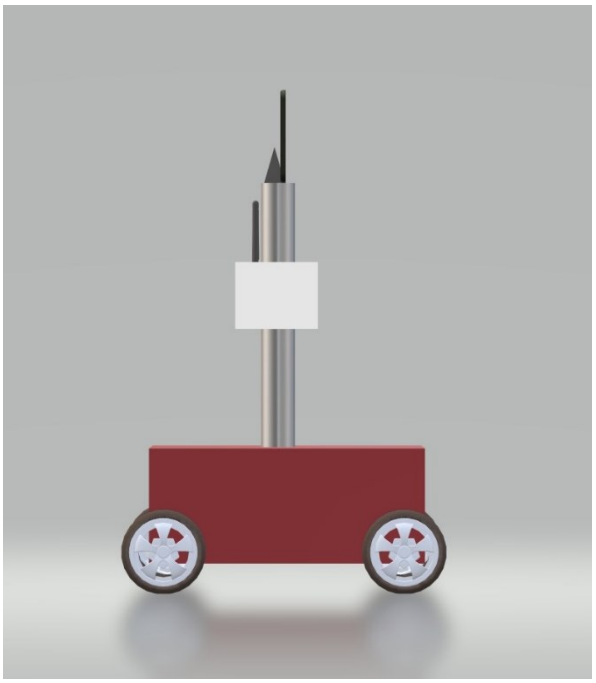
The doctor will use an IOT app to control the robot. The control commands sent online are received by the robot controller. The robot controller operates over wifi internet. The received commands are received in real time and the robot motors are operated to achieve the desired location.

- **Components :**

(RPLIDAR A1, Raspberry PI 4, Raspberry PI camera, IMU, ESP8266 WiFi Module, Motors & Encoder, Battery and BMS, Wheels – Shafts – Bearings).

- **Required Skills** :

(Git · Python/C++ · OOP · linear algebra · debug Python/c++ code · Linux · Bash Scribt · robot simulation"Gazebo" · ROS2 nodes, topics, services, parameters… · sensor fusion · SLAM · Navigation · Computer Vision)



Team Members :

1-Mohammed Saad Helmy "Leader".

2-Eslam Abd Elhalim Mohammed.

3-Omar Abd Elalim Ahmed.

4- Ali Mahmoud Khallaf.