Hazard Sensor Bot

The Hazard Sensor Bot was designed to be used in multiple different scenario that may leave civilians in any danger. The bot has many features to ensure there is no harm that can be done to any one within the searching area and the ability to prevent any harm from happening.

Features

- Heat sensor
- Geiger counter
- Light sensor
- IP camera
- WebSocket IO
- Controllable Zumo robot

To first run the program, you will need to upload the INO code to the MKR using a USB, to connect and receive data wirelessly, using Wi-Fi. Once the code is uploaded, connected the USB from your device to the power bank, inside the Lego build.

Then make sure that the Geiger counter is connected to the power banks as well using a USB.

The Zumo has the code already upload so just turn the Zumo and make sure that you have XBee connected to your device with an USB. Then start Python file to run the GUI and control the Zumo. Firstly, go into the terminal and change directory using the following command: pip install -r /path/to/requirements.txt. This will connect the GUI with the XBee.

Zumo Controls

- W – To go forward
- S – To go backward
- A – To turn towards the left
- D – To turn towards the right

Upon running the python file, you will be able to see the application with some informative components with the camera view. These values will be changing dynamically by receiving live data from all the sensors we have mounted on the breadboard. The system will also record the highest value it found and be able to view by the user.

The temperature will give back the result to the user of the rooms current temperature, and it is measured in Degree Celsius.

The Light sensor will give back to the user of the lights luminous level.

Lastly the Geiger counter will give back to the user the CPM, which is detecting any ionized radiation with the vicinity of the Geiger counter every 15 second.

If the system detects the counter values going too high, it will indicate the user by changing the colour of the display with its respective colours.