|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| |  | | --- | |  | |  | | HERE THE ROBOT PICTURE | |  | |
| Luci  Human seeker robot in hostile environments |
| PROJECT SPRINT #1. DATE: 14th April 2021  Martí Caixal i Joniquet Ricard Lopez Olivares Hernán Capilla Urbano Marc Garrofé Urrutia |

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Luci

Human seeker robot in hostile environments

# Project description

*This robot’s aim is to seek people whose situation is not favorable in hostile environments. It searchs, avoids obstacles, detects humans in environments where people can’t afford to get in (such as gas, smoke, or buildings on fire) and notifies the emergency units.*

*“Luci keeps you safe, from environments where you won’t be safe.”*

# Electronic components

This is the list of the used components:

* *Raspberry Pi 3 B+*
* *Gravity: Gas sensor*
* *Ultrasound HC-SR04 distance sensor*
* *Arduino UNO Rev.3*
* *Motor Kit: DAGU 140rpm*
* *9V battery cable*
* *MLX90640 Thermal Camera Breakout*
* *Webcam C160*
* *Temperature/Humidity sensor*
* *Power Bank 5000*
* *L93B Quad Push*

# Hardware Scheme

*HERE \_SCHEME\_PICTURE\_MADE\_OUT\_WITH\_FRITZING*

*HERE\_TEXT\_WITH\_THE\_ENUMERATION\_OF\_THE \_CONNECTIONS\_SHOWN\_IN\_THE\_SCHEME*

# Software Architecture

*HERE \_SCHEME\_WITH\_THE\_DIFFERENT\_INTERCONNECTED\_SOFTWARE\_MODULES*

*HERE\_THE\_DESCRIPTION\_OF\_EACH\_SOFTWARE\_MODULE*

# Amazing contributions

*Mixing Compting Vision + Robotics with the purpose of analyzing normal images and thermic images to get the results.*

*Adaptive robot to different environments such as gas, fire, smoke, etc.*

*Not only detects but notifies.*

*Not only notifies but it also indicates the path that has followed the robot plus the obstacles that have found on its way.*

*HERE\_CLEARLY\_JUSTIFY\_THE\_MARK\_THAT\_YOUR\_PROJECTE\_DESERVES\_IN\_CASE\_OF\_FULFILLING\_ALL\_THE\_OBJECTIVES*

# Extra components and 3D pieces

* *Design 2 pieces*

*HERE\_TEXT\_DESCRIBING\_THE\_USE\_FOR\_THE\_3D\_PIECES\_AND\_EXTRA\_COMPONENTS*

*HERE\_THE\_PICTURES\_OF\_ALL\_3D\_STRUCTURES\_AND\_EXTRA\_COMPONENTS*

# Simulation Strategy

*HERE\_TEXT\_DESCRIBING\_THE\_SIMULATION\_STRATEGY*

*SIMULATOR\_USED*

*MODULES\_TO\_BE\_SIMULATED*

# Foreseen risks and contingency plan

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Risk #** | **Description** | **Probability** (High/Medium/Low) | **Impact** (High/Medium/Low**)** | **Contingency plan** |
| 1 |  |  |  |  |
| ... |  |  |  |  |

References

This project has been inspired by the following Internet projects:

URL Link 1: <https://www.eltiempo.com/tecnosfera/novedades-tecnologia/firebot-el-robot-que-ayuda-a-prevenir-incendios-forestales-103122>

URL Link 2: <https://github.com/gritmind/image-processing-for-fire-detection>

URL Link 3: <https://makersportal.com/blog/2020/6/8/high-resolution-thermal-camera-with-raspberry-pi-and-mlx90640>