

MILESTONE 0: FOLLOW-ME ROBOT

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0.1 Introduction

Follower robots are devices that use sensors to detect and track a person or object. These robots can be programmed to move in a specific direction and maintain a certain distance from what they are following. Such robots are used in various applications, such as surveillance, logistics, inspection, and support for people with mobility impairments. Thanks to their ability to follow and interact with their users, follower robots are gaining popularity in many fields.

Creating a robot that follows a person and carries boxes can be an exciting and useful project. The robot should be designed with sensors and algorithms that allow it to detect and track the person in real-time, while also being able to carry heavy objects such as boxes. This may require the integration of motors and acceleration mechanisms so that the robot can move efficiently, as well as advanced software that can interpret sensor data to control the robot's movement. With proper planning and the right tools, creating a robot that follows a person and carries boxes could be a highly rewarding task with great potential for practical applications.

0.2 Main Objective

1. Create a follow-me robot in order to increasing efficiency and productivity.

0.3 Specific Objectives

This are the specific objectives of this project:

1. Design and build a robot that can follow a person autonomously.
2. Integrate sensors to allow the robot to detect and follow a person.
3. Develop a control system to allow the robot to follow a person smoothly and smoothly.
4. Add additional functionality to the robot, such as the ability to carry objects.
5. Wireless robot using a battery.

0.4 Team Organization

Regarding the organization and the separation of responsibilities of the group, the structure is as follows:

- Project manager: Jana Bover
- Mechanical leader: Eloi Garcia
- Electronics leader: Ferran Huéscar
- Software leader: Jordi Rovira

However, we will all get involved in all areas for a better rapport and understanding of the final result.

0.5 Tasks

On the other hand, after digressing and doing a little search on the internet we have initially decided on the following tasks:

1. Design: Outline the design of the robot, including its physical features, sensors, and software capabilities.
2. Functionality: Describe the robot's intended functionality, such as its ability to navigate the warehouse, identify and retrieve items, and transport goods to specified locations.
3. Implementation: Detail the steps necessary to build and deploy the robot, including any required hardware and software, as well as testing and validation procedures.
4. Potential benefits: Highlight the potential benefits of using the robot, such as reducing labor costs, improving accuracy, and increasing throughput.
5. Cost analysis: Estimate the cost of building and deploying the robot, as well as any ongoing maintenance and operational expenses.
6. Risks and challenges: Identify potential risks and challenges associated with the project, such as technical difficulties or regulatory compliance issues, and propose strategies for addressing them.
7. Future enhancements: Discuss possible future enhancements and developments for the robot, such as adding new capabilities or integrating with other systems.
8. Conclusion: Summarize the key points of the project and emphasize its potential impact on the warehouse operations

0.6 GitHub

In addition to the tasks proposed above, we will have to reflect and monitor the project with the GitHub tool. A platform for version control and collaboration on software projects. In this way, it will be important to transfer the day-to-day tasks, as well as the partial results of the project. In other words, we will be able to organize the work of all the members of the group, for better monitoring and progress of the project. On the other hand, it will also be easier to manage feedback from tutors.

0.7 Webpage address

Finally, once the project is finished, it will have to be captured on a web page called "instructables.com". This resource allows users to share and discover DIY projects (do it yourself). The platform hosts a wide variety of projects in categories like electronics, gardening, crafts, and more. Each project includes detailed step-by-step instructions, images, and materials needed to complete the project. Additionally, users can comment, ask, and share feedback on projects.

For our part, we are also going to include a promotional video of maximum two minutes. Our initial idea is to explain the general operation of the drone, show the final design, either through 3D renders or with the prototype already built, and film the drone's flight.

In short, this project is an exciting opportunity to learn and develop valuable skills. We are excited to work together on this project and see what results we get.