



## Cover page

Project title: Garbage Collector Robot

Academic Year: 2023/2024

Group Members: Baraa Soliman Sawafta

Department Name: Computer Engineering

Mahmoud Hamdallah Kazlak

Project Type          Software          or          Hardware          (Choose one)

Supervisor Name: Eng. Asmaa Afeefi

### Format:

- Single space, Times New Roman.
- 12 pt,
- Maximum 1 page.

### Abstract Body:

#### Items must be provided in the Abstract:

- Why do you think this project is important? Please explain the significance of this Project in brief.
- In your point of view what are the important aspects that should be covered in the project?
- Objective(s): In your view, please explain the main objectives of the project.
- Methodology: Give a brief outline of the application development process.
- Had this project been done before? Are there any similar applications available today?
- **Note:** Please deliver this abstract early to ensure that your Project has been approved by the department's projects committee. **Registration will not be done without this approval.**



## Project's Abstract:

This project is pivotal due to its potential to revolutionize waste management practices, addressing a critical issue faced by many communities. The importance of the project lies in its ability to save human resources, enhance efficiency, and contribute to cleaner and healthier spaces. TRASH BOT autonomous and manual modes offer adaptability to diverse settings, making it a versatile solution for different environments.

Crucial aspects that should be covered in the project include robust navigation algorithms, object detection mechanisms, user-friendly controls, real-time monitoring features, a liquid detection system, bin capacity notification and the segregation between the metallic and non metallic wastes. The integration of a liquid detection system adds another layer of functionality to TRASH BOT. If the robot detects a liquid on the floor, it promptly sends a notification to the user, alerting them to potential hazards and facilitating a more comprehensive approach to maintaining clean and safe spaces. Additionally, the incorporation of a bin capacity notification system ensures that when the bin collecting rubbish becomes full, the robot notifies the user, optimizing the waste collection process and preventing potential overflows.

The main objectives of the project revolve around reducing the dependence on manual labor for waste collection, promoting sustainable practices through efficient trash segregation, adapting to different environments, enhancing overall safety by detecting and notifying users about liquid spills, and optimizing waste collection by alerting users when the bin reaches full capacity. The methodology employed in the application development process encompasses a thorough design phase, testing procedures, and continuous refinement to ensure the robot's reliability and effectiveness in diverse real-world scenarios.

