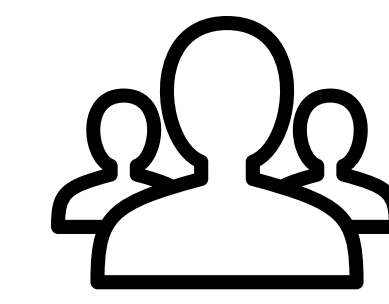
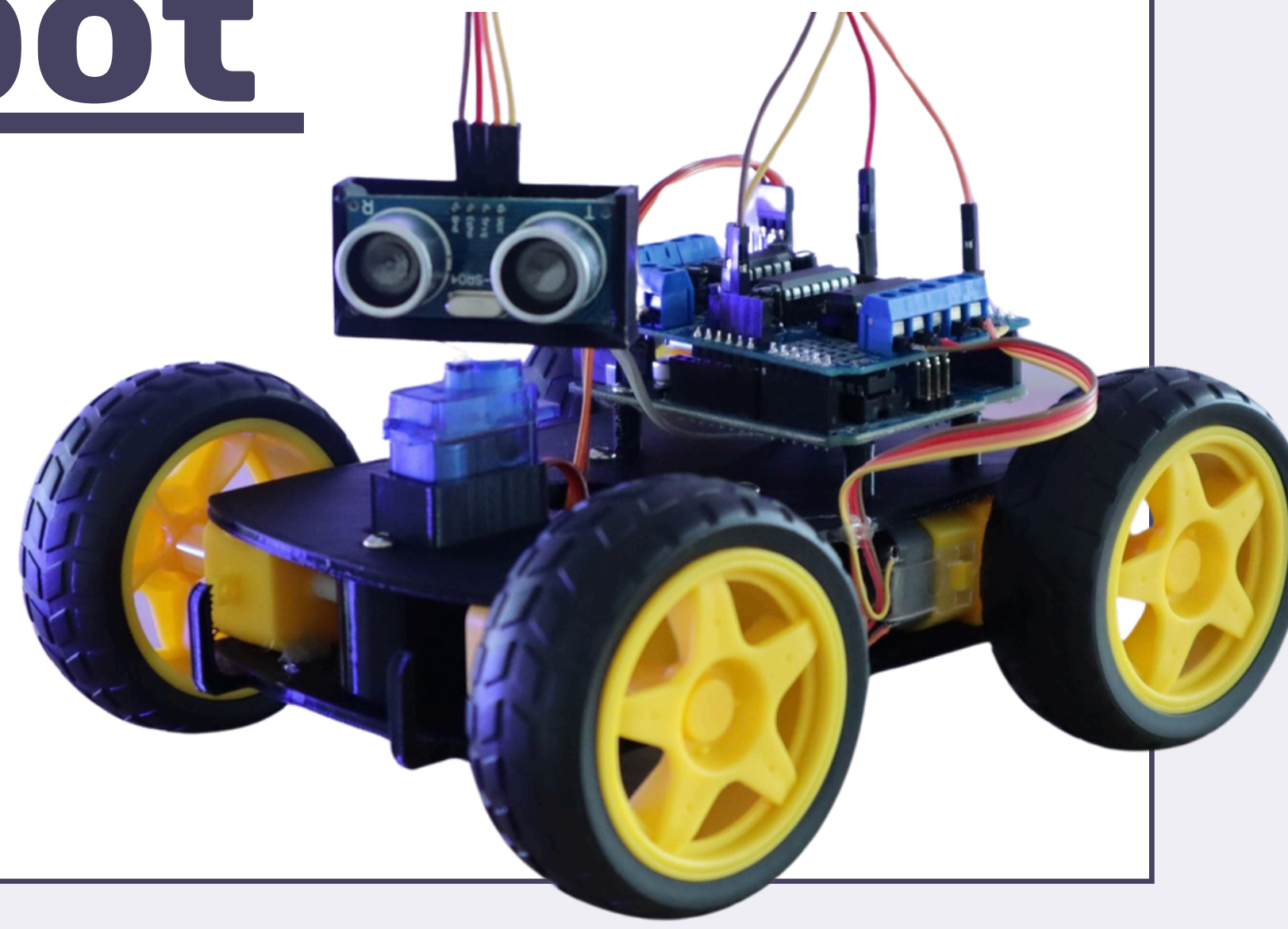


# Autonomous Robot for Obstacle Avoidance and Auto Parking



**Participants:**  
Andrew Botros  
Eriny Waguih  
Sandra Wassim  
Seveen Samir  
Marina George  
Carine Emad

## Introduction

This project aims to design and implement an autonomous robot capable of navigating its environment, avoiding obstacles, and autonomously parking itself. The robot will operate in two main modes: obstacle avoidance mode for navigating and avoiding obstacles, and auto parking mode for parking in open spaces.



## Objective

The main objective of this project is to create a robot that can autonomously navigate complex environments, detect obstacles, and park itself in open parking spaces without human intervention.

## Methodology

For obstacle detection, the robot will use ultrasonic sensors to measure distances to objects in its path. For parking space detection, a combination of ultrasonic sensors will be used. The algorithms for obstacle avoidance and auto parking will be based on the sensor readings to navigate and maneuver the robot.

## Results

The robot successfully demonstrated its ability to navigate through environments while avoiding obstacles. It also autonomously identified and parked in open parking spaces.

## Conclusion

**This project has successfully achieved its goal of creating an autonomous robot capable of navigating, avoiding obstacles, and parking itself. The robot's performance in both obstacle avoidance and auto parking modes showcases its effectiveness in real-world applications.**



## **Future Work:**

Future enhancements could include incorporating machine learning algorithms for more advanced obstacle detection and parking strategies, as well as integrating with smart city infrastructure for improved navigation and parking capabilities.

