



Abu Dhabi Polytechnic

Students' Graduation Project Abstract

Department:	EMET	Semester:	Spring-2022
Project Title:	Artificial Intelligence Robotic Vacuum		
Supervisor:	Dr. Fawwaz Alkhatib		

Abstract:

People started to be interested in automation of cleaning in 90s of 20th century. The first robot vacuum cleaner was made in 1990 and was called “iRobot”. This invention made other companies to think more about house robotics. Since that time, companies produced many types with different features and shapes.

This project is about a Robotic vacuum with AI, which will help detect a specific object. Students will apply python language to be able to program the robotic vacuum. This project has assumed an indoor environment, and the availability of microcontrollers and required sensors. In addition, the project has to be completed in a four-month period where the budget is around 2000 AED.

The main idea of this project is to design and develop a robot vacuum cleaner using Artificial Intelligence AI to help the people save their time and effort in cleaning.

The robotic vacuum moves over the floor, collecting dust and grime. Artificial Intelligence will be used to detect and identify objects as (money, toys..), which will enable the vacuum to differentiate between the objects while cleaning. This will prevent losing valuable items.

The innovative part of our project is using artificial intelligence (AI) by programming the vacuum to distinguish the valuable items between the scanned object, such as money, toys, liters... etc. Additionally, Also the shape of the vacuum will be designed in such a way to improve the performance of cleaning of the vacuum specially for the room corners since the circle shape cannot reach to the corners and clean them well.

The code will be written using Python, and the main components of the project that should be used will be:

- Microcontroller, Camera, Ultrasonic sensor, Wheels, Motors, Battery.