

## A STUDY OF ROBOTIC VACUUM CLEANER USING RASPBERRY PI

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### ABSTRACT

Humans are flattering more advanced day by day and the use of technology is creating our lives easier. By this consider, one of our daily mission is to keep our surroundings clean by usual way using a broomstick, as technology is growing day by day we came with manual vacuum cleaners. Manual vacuum cleaners are effective, but it still depend the presence of a human instructions. These challenges have led us to the idea of evolving a smart and advanced robotic vacuum cleaner that delivers cleanliness and sanitation without the need of any human intrusion to the system. In robotic vacuum cleaner there exist many dissimilar methods which are used to clean the home or inns. Robotic vacuum cleaner model, we consider the science of architecture and executed using python programming with Raspberry Pi 4. It was robotically scans area around and starts cleaning. In this proposed system, IOT sensors are used to read real-time data thus it gives procedural efficiency and economic efficiency.

**Keywords:** Robotics, Sensors, Raspberry Pi 4, Vacuum Cleaner.

### I. INTRODUCTION

In 21<sup>st</sup> century technologies are moving to the forward direction. In this busy schedule human does not have a time for housekeeping work. House cleaning is one of the biggest tasks. Dirtiness may occur, different types of disease. So we can't skip the cleaning work. Earlier days cleaning work is done by broomstick and latterly, humans are using vacuum cleaner. But all these methods are done by human support. We want to spend much time to do this type of systems. But, all are busy with their carriers, so we all are prefer the time consumer. Technology moves to the next step its calling Robotic vacuum cleaner. It's cleaning work done by automated. Also we can watch the each and every movements of cleaning process through camera. This system was implemented by Internet of Things (IOT) sensors. This system we can operate by using our smart phones by Wi-Fi connections why because, this system already embedded with Wi-Fi connections by done thus whole operations. Instructions are followed by Google assistant. Once the work has done alarm will be intimate. (Example: we will operate the system before we going office so that the device will easily clean the home by using this advantage)

### II. OBJECTIVES

- Developing Wi-Fi controlled mobile robot.
- To create a robot this carries out cleaning operation efficiently.
- Mopping and Sweeping operations are done by the same time.
- It can clean all types of floors like cement floors, highly polished wooden floors, marble floors and etc.,

### III. COMPONENTS REQUIRED

#### 1. Raspberry Pi 4

**1.1. Micro-USB Power Supply:** A 5V micro USB typically powers the Raspberry Pi. But how a lot current (in milliamps or amps) the Pi calls for to characteristic relies upon on our usage.

Usage relies upon on what you're doing with the Pi. Playing video and surfing the net attracts greater energy than idling & booting. It is likewise relies upon on what gadgets are related; a few keyboards and mice draw are greater energy than others.