

A project report on

ENHANCED AUTONOMOUS ROBOT WITH CENTRAL NAVIGATION SYSTEM

Submitted in the partial fulfillment of the requirements for the award of the degree of
BACHELOR OF TECHNOLOGY

IN
ELECTRICAL AND ELECTRONICS ENGINEERING
SUBMITTED BY

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2021-2022

CERTIFICATE

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

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This is to certify that the project report entitled “**ENHANCED
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With sincere regards

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DECLARATION

We hereby declare that this project titled **“ENHANCED AUTONOMOUS ROBOT WITH CENTRAL NAVIGATION SYSTEM”** has been undertaken and this work is submitted to **ADITYA COLLEGE OF ENGINEERING, Surampalem**, affiliated to **JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY, Kakinada** in the partial fulfillment of the Degree of Bachelor of Technology.

We further declare that this project work has not been submitted in full or part for the award of any other degree in this or any other Educational institutions.

With sincere regards

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ABSTRACT

Many tasks which are beyond human ability can be performed with the help of robotics. In this project, autonomous robots with a central navigation system are used to deliver packages from source to destination.

The navigation of tracking the robot using Arduino is used to deliver the objects from source to destination quickly within an effective manner with accuracy without using the sensors. The camera is continuously monitoring the robot and assigns the path based on the software instructions.

In this project, we have used a python script with an open cv to track the robot with color and used mathematics formulas to triangulate the color boxes on the robot to find the position and orientation of the robot. Thereafter we have used the python requests module to send the respective commands to navigate the robot from the pc. A single-camera has been used to track two robots. The pc will send the commands to Robot through wifi.

Autonomous robots can be used to improve the speed and accuracy of routine operations, particularly in warehousing and manufacturing spaces; work side-by-side with humans for added efficiency, and reduce the risk of employee injury in dangerous environments.

Robots are useful in many ways. For instance, it boosts the economy because businesses need to be efficient to keep up with the industry competition. Therefore, having robots helps business owners to be competitive, because robots can do jobs better and faster than humans can, e.g. robots can be built, and assemble a car.

Keywords : Arduino uno Wi-Fi rev 2, DC motors, webcam, Servo motor, Battery.

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