A PROJECT REPORT

ON

"REMOTE GRIP ROVER "

Is submitted to

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY, ANANTAPUR

In partial fulfilment of

the requirements for the award of the degree of

BACHELOR OF TECHNOLOGY

In

ELECTRONICS AND COMMUNICATION ENGINEERING

During the academic year 2023-2024

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CERTIFICATE

This is to certify that project work entitled "**REMOTE GRIP ROVER**" *is the bona fide work done by* **S. IRAM KISHWAR (209FIA0492), S. SHABAZ BANU (209F1A0496), M. PAVAN SAI (209F1A0478), K. MOUNESH (209F1A0472), K. VASUDHA (209F1A0475)**. *Under my supervision and guidance, in partial fulfilment of the requirements for the award of degree of* "**BACHELOR OF TECHONOLGY** *in* **ELECTRONICS AND COMMUNICATION ENGINEERING**" *from* **Jawaharlal Nehru Technological University, Anantapur, Anantapuramu,** *during the period of 2023-2024.*

PROJECT GUIDE

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ABSTRACT

A robot is usually an electro-mechanical machine that is guided by computer and electronic programming. Many robots have Been built for manufacturing purpose and can be found in factories around the world. Designing of the latest inverted ROBOT which can be controlling using an APP for android mobile. We are developing the remote buttons in the android app by which we can control. The robot motion with them. And in which we use Bluetooth communication to interface controller and android. Controller can be Interfaced to the Bluetooth module though UART protocol. According to commands received from android the robot motion can be controlled. The consistent output of a robotic system along with quality and repeatability are unmatched. Pick and Place robots can be Reprogrammable and tooling can be interchanged to provide for multiple applications.

Human-following robots have been researched and developed actively these decades due to its plentiful applications in daily life and manufacturing. A human-following robot requires several techniques such as human's target detection, robot control algorithm and obstacles avoidance. Various approaches of following robots have been proposed such as using ultrasonic sensors, voice recognition sensors, laser range sensors, charge-coupled device (CCD) camera and so on. These technologies detect the relative position between a mobile robot and a human. In this research, a robust vision-based target detection system that detects a custom-designed tricolored belt with short initialization time, and a computationally less complex Robot Control Architecture was proposed using Fuzzy logic and Subsumption architecture to achieve these goals. The robust performance of the proposed approach is illustrated by the experimental results on a real-world robot which maintains accuracy, hardware cost as well as simplicity of the system and ensures that the robot follows the target person stably, smoothly, and safely.

Keywords: IR sensors, DC geared motors, Arduino board, Robotic arm kit, battery, Android phone, motor drivers, Ultrasonic sensor.

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