

Mecanum Grounded Vehicle with Robotic Arm

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Abstract: Last few decades witnessed a rapid development in robotic technology different type of intelligent machines which facilitate various task in industries environment becoming popular this paper focus on design in a compactable auto guided mecanum vehicle robot with robotic arm kinematics and motion of robot designed by referring by to the omni wheel mechanism the frame design, mecanum wheel and the parts are designed by 3D print using PLA material. Mecanum wheel robot car are any other vehicle that has a mecanum wheels drivable in any direction known as omni directional drive. It has four mecanum wheels and four gear motor locomotion of the robot achieved using four motor. this robot has a 4 wheel drive which means you can control each wheel direction and RPM independently so you can move your vehicle in any direction without change of the its face. the mecanum wheel have numerous roller the attached 45 degree to the wheel this gives special features of 360 degree moving direction. In this blog we make a mecanum wheel robot car with node MCU and L298 motor drivers. The other part is a robotic arm for pick and place operations. the robotic arm is attached on the top of the body. the operation of the pick and place operation is controlled by android phone. the robot is automated using wi fi module, motor drivers, servo motors and other supporting circuits. the pick and place and motion of the robot is controlled by app in smart phone through wifi control we make specific app for this control process through this we can control this robot in all direction like forward, backward, sideways, diagonal without change the face of the robot so it can be very efficient in all fields this robot can be fully automatic and partially manually controlled. this paper taken into the account of the safety, reliability and the ease of use. A locomotion algorithm is developed to provide the robot with an autonomous capability for work.

Keywords: Mecanum

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