

5. Fabrication Of Real Time Advanced 5 In 1 Multipurpose Agricultural Vehicle.

Abstract—

Robotics in agriculture is not a new concept; in controlled environments (green houses), it has a history of over 20 years. Research has been performed to develop harvesters for cherry tomatoes, cucumbers, mushrooms, and other fruits. In horticulture, robots have been introduced to harvest citrus and apples. In this paper autonomous robot for agriculture (AgriBot) is a prototype and implemented for performing various agricultural activities like seeding, weeding, spraying of fertilizers, insecticides. AgriBot is controlled with a Arduino Mega board having At mega 2560 microcontroller. The powerful Raspberry Pi a mini computer is used to control and monitor the working of the robot. The Arduino Mega is mounted on a robot allowing for access to all of the pins for rapid prototyping. Its hexapod body can autonomously walk in any direction, avoiding objects with its ultrasonic proximity sensor. Its walking algorithms allow it to instantly change direction and walk in any new direction without turning its body. An underbody sensory array allows the robot to know if a seed has been planted in the area at the optimal spacing and depth. AgriBot can then dig a hole, plant a seed in the hole, cover the seed with soil, and apply any pre-emergence fertilizers and/or herbicides along with the marking agent. AgriBot can then signal to other robots in the immediate proximity that it needs help planting in that area or that this area has been planted and to move on by communicating through Wi-Fi.