



Solar Powered Autonomous Multipurpose Agriculture Robot

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Abstract: *Our project, the "Solar Powered Autonomous Multipurpose Agriculture Robot," represents a significant step forward in modern farming. We're using clean, renewable energy from solar panels to keep the robot running, reducing our reliance on traditional power sources and minimizing harm to the environment. To make the robot move precisely and efficiently, we're using high-performance DC motors. These motors allow it to navigate different types of terrain smoothly. For planting seeds accurately, we've incorporated servo motors. We're also using a dedicated DC motor pump for precise pesticide application to protect crops. And for cutting grass effectively, we rely on a high-torque GC motor, making the robot versatile in various agricultural tasks. All of these components are controlled by an Arduino microcontroller, which acts as the robot's central brain. It manages interactions between the different parts, ensuring that tasks are carried out in real-time. To make the robot user-friendly, we've developed an intuitive Android app. This app lets operators control and monitor the robot remotely. The connection between the app and the robot is established through Bluetooth, ensuring a reliable link between the mobile application and the agricultural machine. By combining clean energy, advanced motor technology, and a sophisticated microcontroller, our Solar Powered Autonomous Multipurpose Agriculture Robot is set to improve farming efficiency while minimizing harm to the environment. This abstract provides a glimpse of the critical components and functions we'll delve into in the following sections of our project report.*

Keywords: Solar-powered, Agriculture Robot, Advanced Motor Technology, Arduino

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