

Smart Agriculture Drone

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Abstract: *Agriculture is one of the most important sectors in India, but traditional farming methods require high labor, time, and cost. Manual spraying of pesticides and fertilizers is harmful to farmers' health and does not ensure uniform distribution. To overcome these problems, this project presents a Smart Agriculture Drone using a hexacopter frame integrated with IoT-based monitoring and spraying system.*

The drone is divided into two main parts: flight control system and smart monitoring system. The flight system ensures stable flying using KK2.1.5 flight controller and FlySky transmitter. The monitoring system uses ESP32, DHT11 sensor, soil moisture sensor, relay module, water pump, and ESP32 camera. The ESP32 creates a WiFi network and hosts a webpage where users can monitor environmental data and control the spraying pump wirelessly.

This system reduces manual effort, improves safety, and provides precision spraying for better crop productivity.

Keywords: Agriculture Drone, ESP32, Hexacopter, IoT, Smart Farming, Precision Spraying

