

The Design and Implementation of Quadcopter UAV with Image Capturing and Face Recognition

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Abstract: The design and implementation of quadcopter Unmanned Aerial Vehicle(UAV) with image capturing face recognition for search and other application. The aim of this project is to develop a real time quadcopter drone with image capture and face recognition. Phases of project. Basic components. Is an electronic device which is remote controlled based aircraft used to achieve vertical flight with stability using KK2.1.5 board. The aim of the project has been achieving, resulting in stable flight and capturing image.

Keywords: Frame, Board Transmitter, Frequency, Brushless DC Motors, Propellers, Electronic Speed Controller, LIPO, Battery, Camera.

1. Introduction

This project created a platform to learn about the unmanned aerial vehicles such as a Quadcopter. This expands the scope of the Electronics and Telecomm. Engineering Education to include the control and the understanding of the mechanical components.

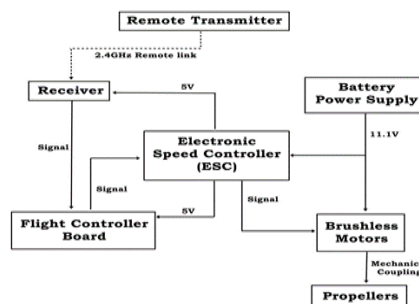
A. Objectives

The goal of our project is to design, implement, and test a stable flying. Quadcopter that can be used to collect the images and classify the image, the face recognition of the pattern from the image dataset. Our plan was to choose an existing Quadcopter kit and add the required components to give the Quadcopter the capabilities to gather and log data autonomously. If this goal is accomplished, our team would also like to design and implement. some autonomous commands that may help aid a user in collecting the data.

2. Working Principle

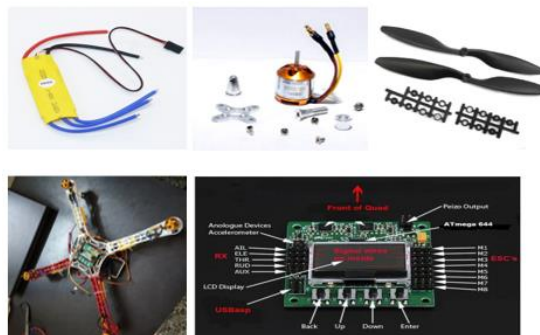
Quadcopter is a device with an intense mixture of electronics, mechanical and mainly on the principle of aviation. Speed of rotation and direction. The rotation of motor changes as per the transmitted signal send the form transmitter. The signal from microcontroller goes to ESC which in turn controllers the speed of motors the program for which is written in the ATMEGA 644PA chip.

3. Block diagram



4. Component used

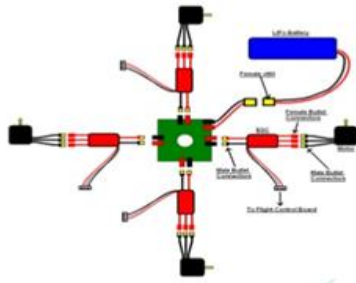
S. No.	Components
1	KK2.1.5 Board
2	BLDC Motor
3	LiPo Battery
4	Electronic Speed Control (ESC)
5	Frame
6	Tx & Rx
8	Propellers
9	Camera
10	Connecting Wires



5. Layout of quadcopter drone



LAYOUT OF QUADCOPTER



6. Result



Output of face is recognized



7. Application

- Pick and Place
- Student Monitoring
- Remote Surveillance
- Face Recognition
- Video Recording

8. Advantages

- Light Weight
- Easily Handle
- Used in dangerous environments
- Filming wildlife
- Battery Rechargeable

9. Future Work

- Emergency Services
- Delivery purpose
- Business Activity Monitoring
- Framing and Architecture
- Quantity Measurement

10. Conclusion

In this project design and simulated a real time aerial quadcopter for flight & image capturing. In this way we can generate the pattern and identify the image of human face and after that we can classify the complete set of the particular human from the large sets of data easily. During the classification we expect that the accuracy of the identification of human face is more than the available system. We can also do vertical stable flight with good stability using KK2.1.5 flight control board and capturing images using camera also face recognition by using python language.

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