

ITSP Project

Gesture Controlled QUADCOPTER

Team Name- M.A.G.N.E.T.O

Members:

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- 3 Shobhit Garg
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Idea:

The purpose of our project is to control a quadcopter using our hand gestures. The quadcopter will be controlled by particular movements of the hand, and these will be detected by an accelerometer and sent to the quadcopter using RF signals and the quadcopter will move accordingly.

Detailed Description:

There will be a glove worn on the hand containing components of accelerometer, microcontroller, and a wireless transmitter module. The accelerometer will detect the accelerations along its axes and this will be transmitted to the transmitter through a microcontroller. The other wireless module, on the quadcopter, that is, the transceiver will receive these signals and send it to the microcontroller, which will be coded to manoeuvre the quadcopter as desired.

Plan of Action:

- Week 1-2 :
 - 1 Research on accelerometers and gyroscope.
 - 2 Research on different RF modules
 - 3 Research on microcontrollers
 - 4 Buy all the major components require for the project.
 - 5 Also start learning arduino.
- Week 3 :
 - 1 Start making quadrotor frame and completing in the week itself.

- 2 Load the glove with accelerometer ,microcontroller ,RF trasmitter.
- 3 Complete learning Arduino coding.
 - Week 4-5:
- 1 Code the microcontroller chip on glove and map different hand gestures to the outputs to be produced by the quadcopter.
- 2 Callibrate the control board to process different gestures.
 - Last Week:
- 1 Check the operability of the quadcopter and fix whatever problems we may face(debugging).
- 2 Add some finishing touches i.e. in the coding or any other area where required.

Components:

- Aluminium,wood,ESCs ,golden connectors - 1700rs(approx.)
- brushless motors 1450kv x4 (jugaad ho gaya)
- Quadcopter Control Board- 2000rs
- Arduino microcontroller board for glove-1000rs
- A good quality accelerometer to be used in glove-690rs
- Set Propellers x2- 2000rs
- Hand Glove
- flex sensor- 1000rs(to control throttle) .
- RF module-2000rs
- Battery(most probably jugaad hi krenge)
- Wires and Other Stuff

Total-12000rs(approx.)