The Third Eye: Gesture Control Drone

Team Members: Jasraj Singh Kochhar, Aadit Panchal, Devin Patel, Nischay Negi, Andrew Huynh

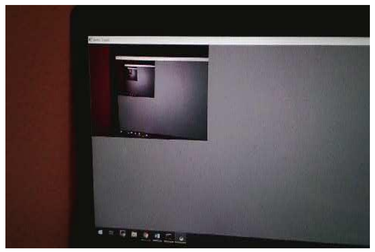
Mentor: Nader Bagherzadeh

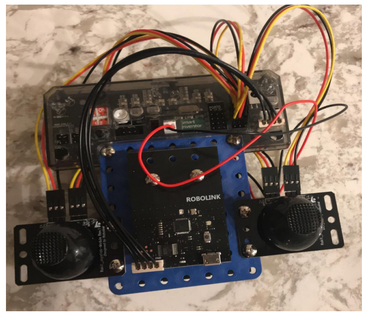
Department of Electrical Engineering and Computer Science

University of California, Irvine

Project Objective

The primary objective of the Third Eye is to improve the safety and functionality of a drone through the addition of face and eye detection control. We will be tracking the pilot's eyes and face through the webcam of a laptop, which will show the live feed from the drone. By doing this, we hope that our drone and its supplemental software has the potential to reduce drone related incidents, making it safer and a more enjoyable experience.



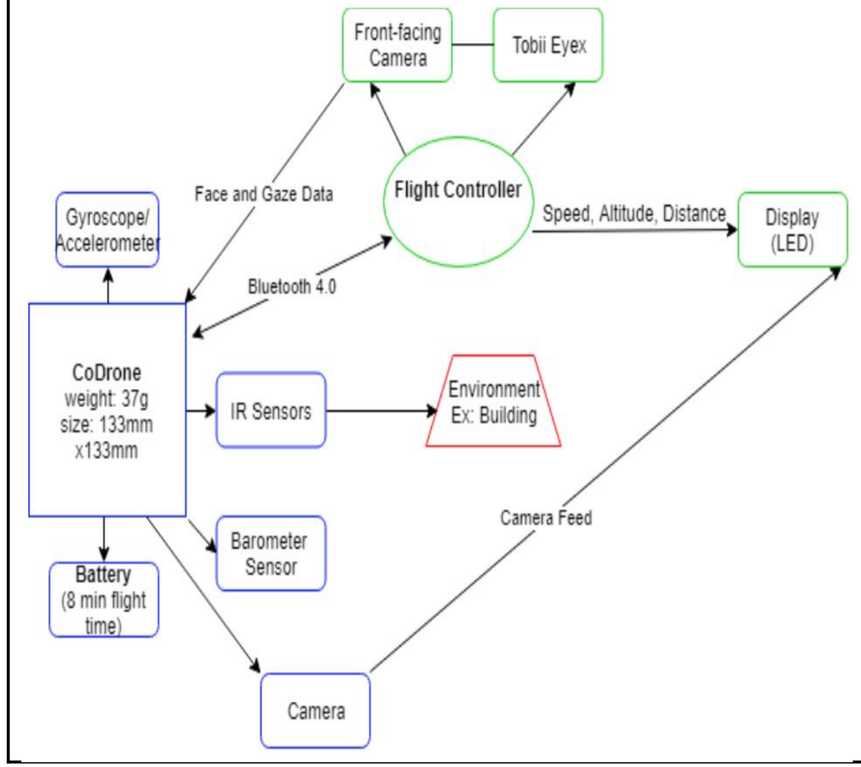


Picture Descriptions

In the top picture to the left, the drone is pointed to a laptop screen so the camera on the drone points to the feed, which show the endless feed loop.

In the bottom picture to the left, the remote for the drone is shown. It has a bluetooth module and arduino module built in so it can properly communicate with the drone.

Approach



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Fall Quarter Progress

- Remote Controller Assembled (With Bluetooth and Arduino Modules)
- 720p Camera Module Attached to Drone
- Learned How to program Takeoff, Land, Hover, and other control functions (Python)
- Established Access to Camera feed via a real time streaming protocol feed
- Started programming gesture and pupil recognition algorithm using openCV

Future Work

- Facial Gesture Recognition Testing
- Testing Flight Using Aid of Live Feed
- Further Flight Testing to Improve Drone Performance

Team Organization

Flight Control	Aadit Panchal (CSE) Jasraj Kochhar (CSE) Nischay Negi (CSE)
Live Feed and Computer Vision	Devin Patel (CSE) Andrew Huynh (CPE)