

UTK Tour Drone

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Friday, July 28th

SSR Team Meeting



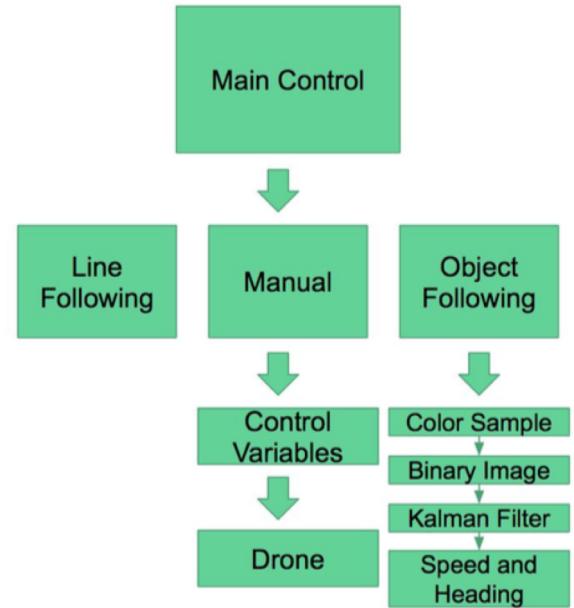
Materials

- Quadcopter
 - No GPS capability
 - Drone equipped with two cameras
 - Internal accelerometers and gyroscopes
 - Styrofoam safety bumper
 - Connects via Wi-Fi
- Raspberry Pi 3
 - Running Ubuntu
- Wii Remote



Navigation

- Manual
- Line following
- Object following



Generate a binary image to identify where the color sample is present in the environment.



Use predicted location to calculate the **Speed** & **Heading** of the drone.

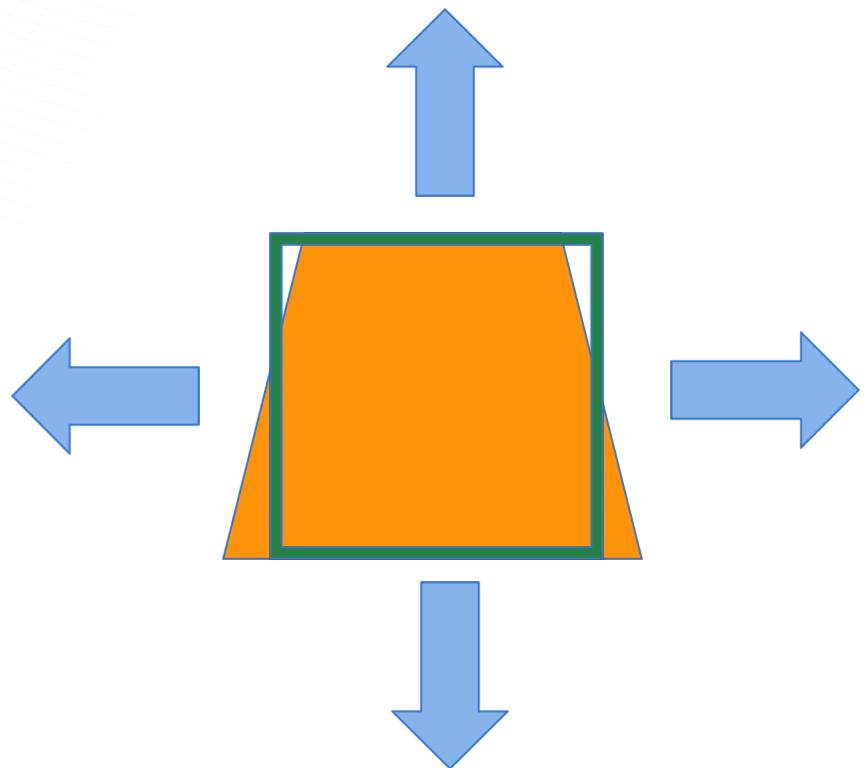
Use a Kalman Filter to predict the location of the object in the near future.

Take the largest contour to be the target object.

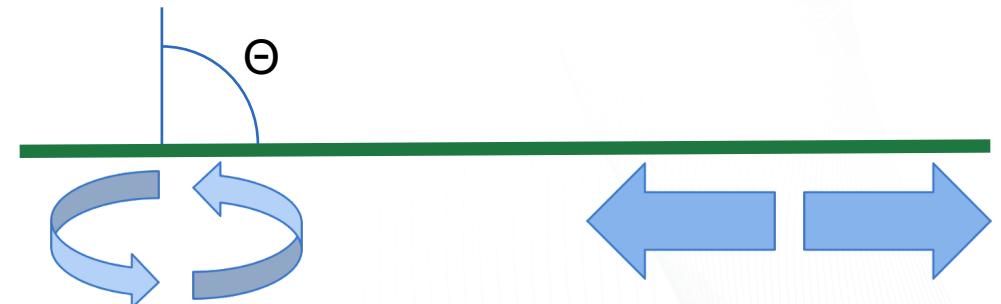


Autonomous Navigation

Object Following



Line Following



Results

- Following videos
- Undergraduate thesis
 - 13 countries
 - 48 downloads
- Project website, open source code, and YouTube channel
- Continued work on line following method in independent study