

Pattern recognition and drone controlling with OpenCV

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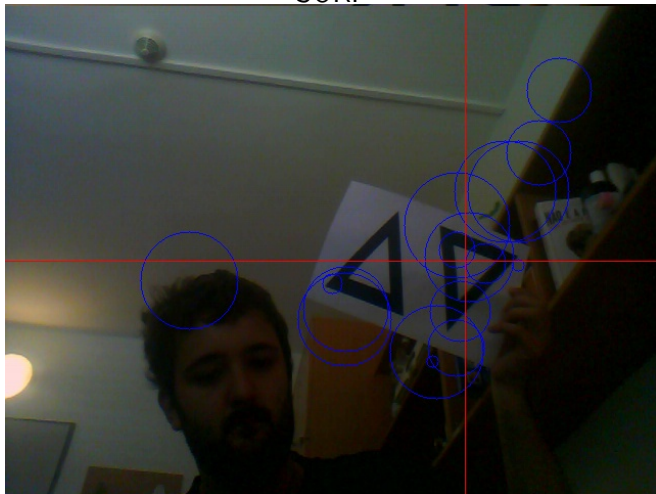
This project aims to produce a framework for controlling the drone from a computer and integrate it with a pattern recognition algorithm to follow the pattern in a room.

A Parrot AR Drone 2.0 was used in the project.



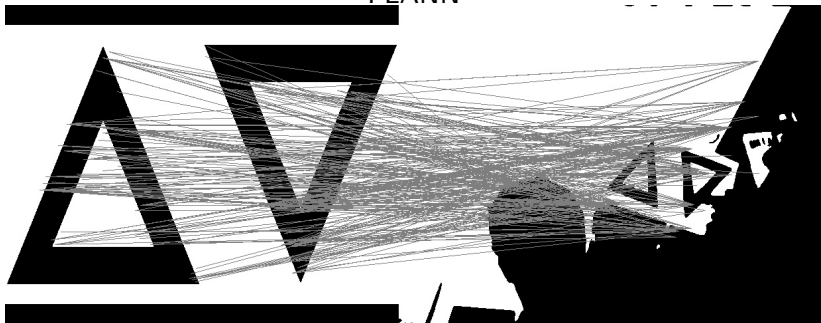
Pattern matching can be done using a combination of two popular algorithms, SURF for extracting robust features from an image, and FLANN for finding matches.

SURF



The size of the circle indicates the confidence in the match, this circles are already filtered.

FLANN



The lines demonstrate matches between points in the template and points in the detected image

Its possible to see in the previous image the majority of the points detected are trully part of the template, this is further filtered resulting in a good acuracy.

A decision algorithm was made to command the drone based on the position and size of the detected pattern.