

Ornithopter

***Aeromodelling
Club Experience***

[Link](#)

A flap winged aerial vehicle replica of an eagle.

- Made up of laser cut acrylic sheets
- Transverse mechanism for motion transfer
- Calibrated for max 6Hz flap rate
- Pitch and Yaw control only
- Carbon fibre rods for wing skeleton
- Completely designed by me

Red Barron - Acrobatics



Reaper - Stealth



Vertical take-off



Payload aircraft



Fixed winged projects

In Aeromodelling Club IIT Guwahati, I worked as a Project Manager to conduct and mentor various projects and Inter IIT competitions.

Multiple configurations tested with autonomous flight capabilities.

***Aeromodelling
Club Experience***

UGV - UAV Coordinated terrain traversing

[Link](#)



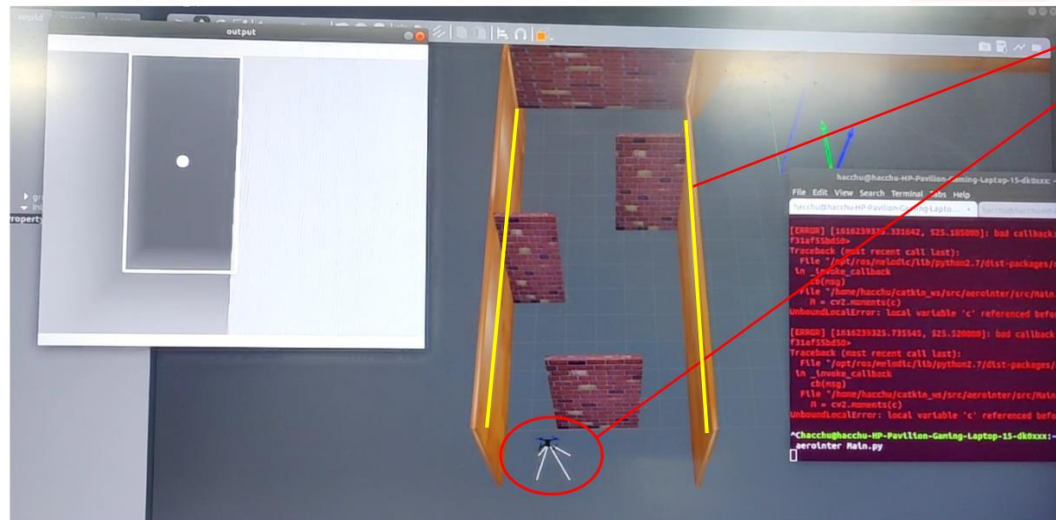
Road

Drone

Car

ROS based (UAV) Obstacle Avoidance Drone

[Link](#)



Wall

Drone

Aeromodelling Club Experience

- UAV segments the flat road from the slopy hill using the depth camera data.
- It detects the UGV position by Aruco marker and gives it commands to move in the desired direction.
- Both UAV and UGV collaborate with each other to traverse the terrain. (Keeping the UGV locked in the field of view of the UAV always)

- UAV with a forward-facing depth camera for detecting obstacles.
- Simple OpenCV contour detection and dynamic thresholding used to segment the obstacles from the free spaces.
- UAV has a bottom camera to detect Aruco markers and land safely after traversing the map.

Extracurricular Hobby designing work

Started an E – commerce store for Drone, RC planes, and RC car t-shirts. All designed by me, printed on-demand, and sold across India as well as abroad!

[Link](#)

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