THE HONG KONG UNIVERSITY OF SCIENCE AND TECHNOLOGY
DEPARTMENT OF ELECTRONIC & COMPUTER ENGINEERING

Introduction to Aerial Robotics
Project 3 Phase 3 (Lab 3.2)

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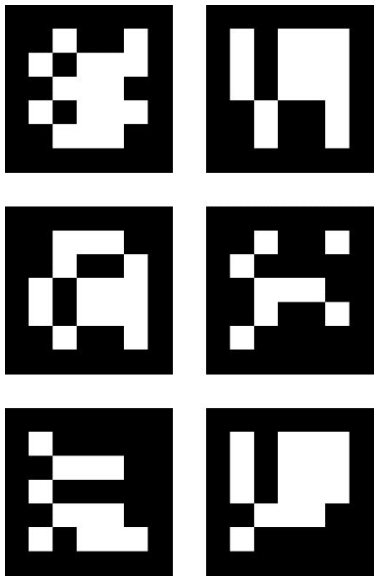
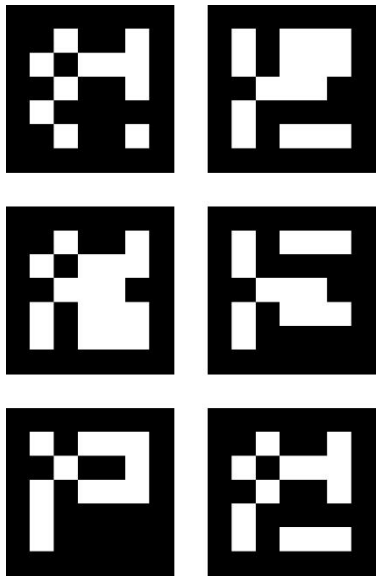
Tips for Lab3

1. Remove any rosbag-related commands from the launch files.
2. Update the “getPositionFromIndex” function in “tag_detector_node.cpp” to reference the map information. A new configuration file can be downloaded from Canvas.
3. Update the rotation matrix “ric” and translation vector “tic” in “tag_detector_node.cpp”.
4. Modify the command to start the roslaunch file in "hover.sh" such that it launches the necessary launch file for the EKF and sets the appropriate topic parameters.

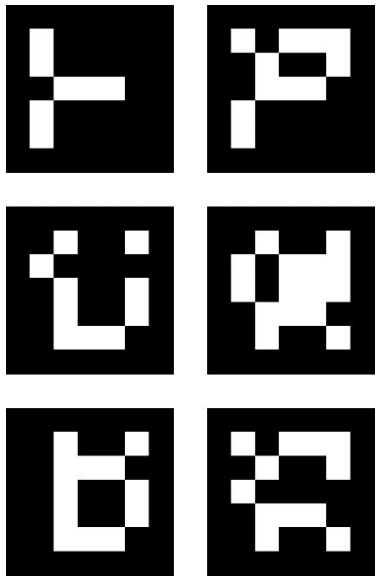
Tips for Lab3



Board 1

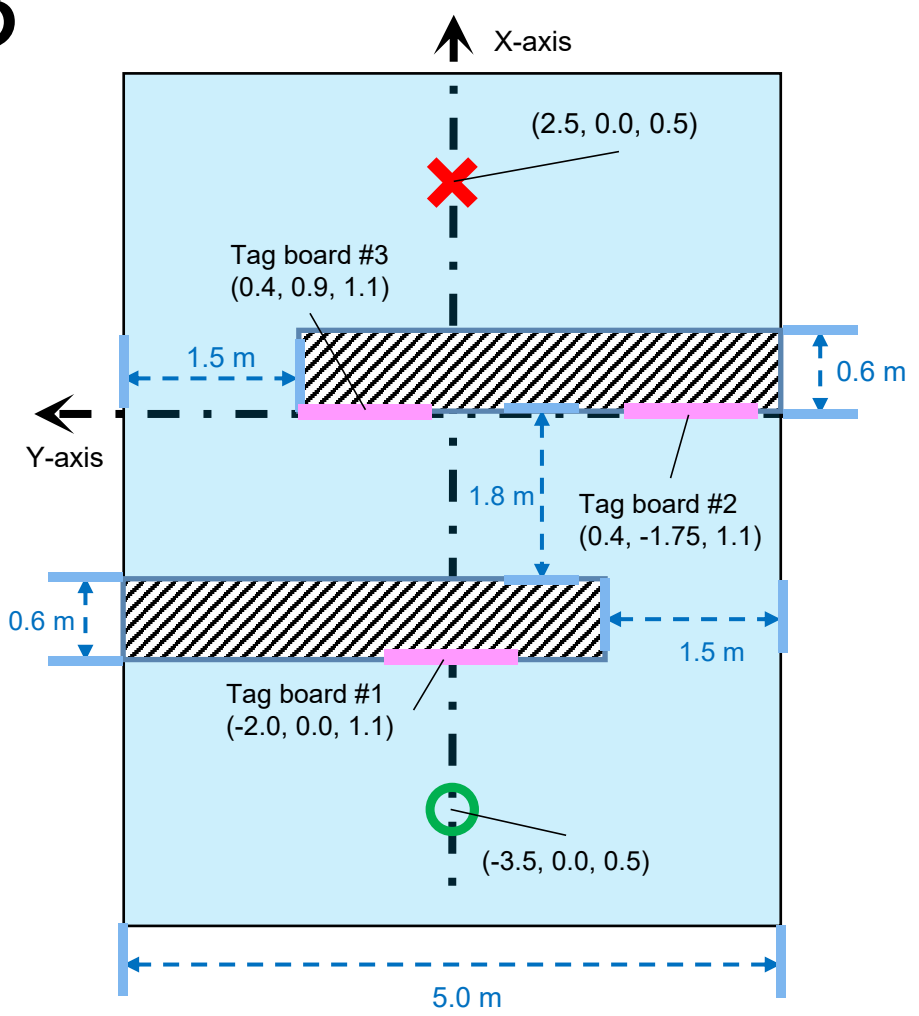


Board 2



Board 3

Index from 1 to 18



The return vector of “getPositionFromIndex” function is the position of the corresponding tag in the world frame.

Suggested Workflow for Project 3 Phase 3

- Test your VO with hand hold.
- Test your augmented EKF with hand hold
- Test & visualize your augmented EKF with manual flying
- Use your own augmented EKF for hovering
- Use your own augmented EKF for trajectory tracking
- !!! Anything abnormal during flight, switch back to manual control and land immediately
- !!! Clear the flying field if you are going to fly your drone

Enjoy Flight

- Note again: Be careful during your experiments because your robot cost more than HK$ 25,000 !!!