

Proposal: Target following for Robot Collaboration

Thesis outline

The goal of this thesis project is to enable a mobile Pioneer robot (slave robot) (Fig.1) to follow an a priori defined target. In the case of this application, the target object will be another (master robot) (Fig.2) Pioneer robot. A PTZ on-board camera will be used as sensory input for this work.

By implementing this robot following behavior, further robot collaboration tasks can be achieved.



Fig.1 : Pioneer 3AT



Fig.2: Pioneer 3DX

Student Tasks

The student will receive the following:

- Two Pioneer robot platforms (P3-AT and P3-DX).
- An example C++ program to control the robot from the Remote Control Platform
- All necessary documentation for the above

With this information, the student is required to output the following:

- A C++ program running on the Remote Control Platform which captures an image from the on-board camera, detect the predefined target (master robot) and directs the slave robot to go in the direction of the master robot.
- A thesis text (in English) describing the work done

Student Profile

- Good knowledge of C++
- Sound interest in robot control and computer vision

