

RoboCup Standard Platform League (NAO)

Technical Challenges Slides

The interface for the human operator:

The 2vs2RemoteControlRobot interface allows the operator to control the robot using its camera without looking at the field. Below is an image of the interface. The world state displays the position of the ball (orange circle) relative to the controlled robot. Obstacles on the field, such as opponents and teammates, are also shown in different colors.

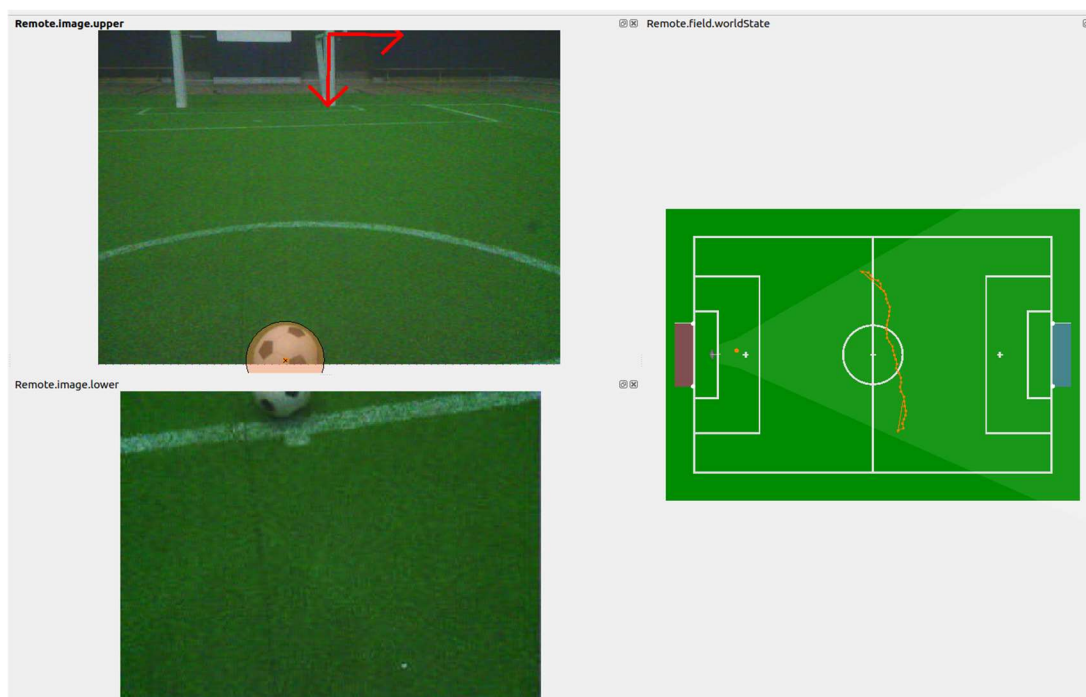


Figure 1: 2v2 remote control robot interface

The strategy for coordinating the human-operated and autonomous robot:

Attack Mode: The autonomous robot passes the ball to the controlled robot if it is closer to the ball compared to the controlled robot. If the ball is close to the controlled robot, the autonomous robot always moves closer to the ball while maintaining approximately 2 meters from it. If the ball is near the controlled robot, the operator should move the

controlled robot forward and pass the ball to the autonomous robot. Thus, the robot closest to the ball should make the pass.

If the autonomous robot is near the goal within about 2 meters, it shoots the ball towards the goal to score.

Defense Mode: The autonomous robot plays the role of the goalkeeper. The controlled robot must intercept the ball and pass it to the goalkeeper. If the ball is closer to the goalkeeper than the controlled robot, the autonomous robot will pass the ball to the controlled robot and then return to its role as the goalkeeper.

Starting position :

Attack Mode: The controlled robot will be close to the ball in the kick-off position, and the autonomous robot will be on his side.

Defense Mode: The autonomous robot is the goalkeeper. The controlled robot positions itself in front of the goalkeeper.

The type of command the operator provides to the robot:

The operator controls the robot using the analog commands and buttons on the controller. To activate the walking mode, the operator must press the Y button. The kick left, kick right, and stand-up engine are continuous modes.

Therefore, to deactivate these modes and reactivate the walking mode, the Y button must be pressed again. To activate the stand-up engine mode when the robot falls, the left joystick is pressed. The figure below shows the various commands.



Figure 2: Xbox Controller Button Mapping in Linux