RoboCup Challenge 2017

Abstract

In the following you will find a task description of the challenge for the end of the winter term 2017. Please refer to the Redmine and the Fibel for help and documentation. In this task the robot will have to show proficiency in a wide range of topics. The robot will take an order and execute the delivery. During this, the robot will be asked to perform aspects of navigation, object and person recognition, manipulation, and speech interaction.

Keywords:
#Recall #ichhabeleiderkeinfotofuerdich #NotMyAsta #BattleRoyal

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Task Description

Time limit for this task is 10 minutes. The robot starts in front of a closed door. After the robot asks to enter the door will be opened by a referee and the robot has to navigate to a designated starting position (Start). At this position the robot will encounter an operator. The robot has to ask for and will be given the name of the operator (out of the given name set). After that, the robot has to follow the operator to an ordering position (see chapter Following). This position can be anywhere inside the arena. If the robot is unable to follow the operator the robot can go to the designated back up ordering position (ordering(backup)). There, the robot has to take an order from the operator which will consist of one item (from the object set). The robot has to clearly state that it understood the given order correctly. Next the robot will have to move to the designated bar area where the robot will find two possible locations for the object (Table A and Table B). The robot has to find the object and state its location. The robot can either grasp the object or ask for the object to be handed over. The handover will be performed by the present referee. Then the robot has to return to the ordering position. The operator is either there or at the starting position. The robot has to show that it found the operator by stating the learned name. The task ends by handing over the object to the operator. Alternatively, if no object was grasped, the robot can report that the order could not be

completed. Additional points can be earned by recording data (see chapter Data Recording).

Score Sheet

Desription	Points
Meet Operator	
Enter the Arena	5
Navigate to Starting Position	5
Learn Operator's Name	10
Take Order	
Follow Operator to Ordering Position	15
Understand Order (1st Try)	10
Understand Order (2nd Try)	5
Get Object	
Navigate to Bar Area	5
Find Object's Location	20
Grasp Object	40
Handover Object	15
Delivery	
Navigate Back to Ordering Position	10
Points are only Awarded if Position was Reached by Following	
Find Operator	20
Handover Object	10
Give Report	5
Data Recording	max. 10
Total	150

Following

When the robot signals that it is ready to start following, the operator starts walking in a natural way. The robot needs to follow the operator until the operator asks the robot to stop doing so at the goal location. If the robot looses track of the operator the robot can ask the operator to step in front of the robot once. If the robot looses track twice the operator will continue walking to the goal position regardless.

Data Recording

The amount of points you can acquire for data recording depends on the percentage of points you gathered in the other tasks. If you got 50% of points overall you will be able to get 50% of the maximum points for data recording. Required for data recording are pictures of the objects at the bar and a log of the robots dialogue and the understood commands. The files have to be handed over ten minutes after task completion to one of the referees via flash drive.