

Robot's Intellect 2023

Candy – checkers picking

1. The task

Candy picking - autonomous robots are competing who can pick up the most candy in a limited time frame and bring it back to the starting position.

Checkers picking - the harder version of candy picking. Here robots have to pick up checkers which are scattered around the track and bring them back to the starting position. There are red and black checkers. If a robot brings back a black checker it gets one point but if it brings back a red one then it loses one point.

2. General rules

1. It is strictly forbidden for robots to injure any participants or viewers.
2. It is forbidden for robots to damage the course, obstacles or any other items of organizer's inventory, unless it is explicitly a part of competition.
3. Robots must be autonomous. During the match human input isn't allowed, unless it's specifically allowed by competition.
4. It is forbidden to intentionally cause any harm to other participants or robots.
5. Robots must be registered until organizer's specified date.
6. Robots must pass qualification before participation. Robots that are late for qualification must get competition coordinator's permission to pass qualification after official qualification time.
7. During qualification, each robot will be assigned a unique number, which must be put on the robot, in a clearly visible location.
8. Competition coordinator has final say on all questions and problems during the competition.
9. The organizers keep the right to alter/edit the rules, accordingly informing the participants about it.
10. Violation of the rules above will result in disqualification or criminal liability.

3. Requirements for robot

1. All of the computations must be done within the robot. Robot can only use external beacons if the beacons are placed by itself and within the course area.
2. Weight must not exceed 10 kg.
3. Maximum robot size: 0.5x0.5x0.5 m (length, width, height).
4. Cannot break, alter or in any other way damage objects inside the obstacle course.
5. It is preferred that the robot would be started and stopped using remote control.
6. If a robot does not meet these requirements during the inspection, the creator will be asked to modify their robot to meet those requirements. Priority will be given for those who haven't had inspection of their robots. Failing to meet the requirements until 30 minutes before competition starts, will result in disqualification from competition.

7. It is forbidden to use sticky means to pick up checkers or candy.

4. Team

1. Team can not contain more than 5 members.
2. The number of robots presented by a team is unlimited.

5. Competition field

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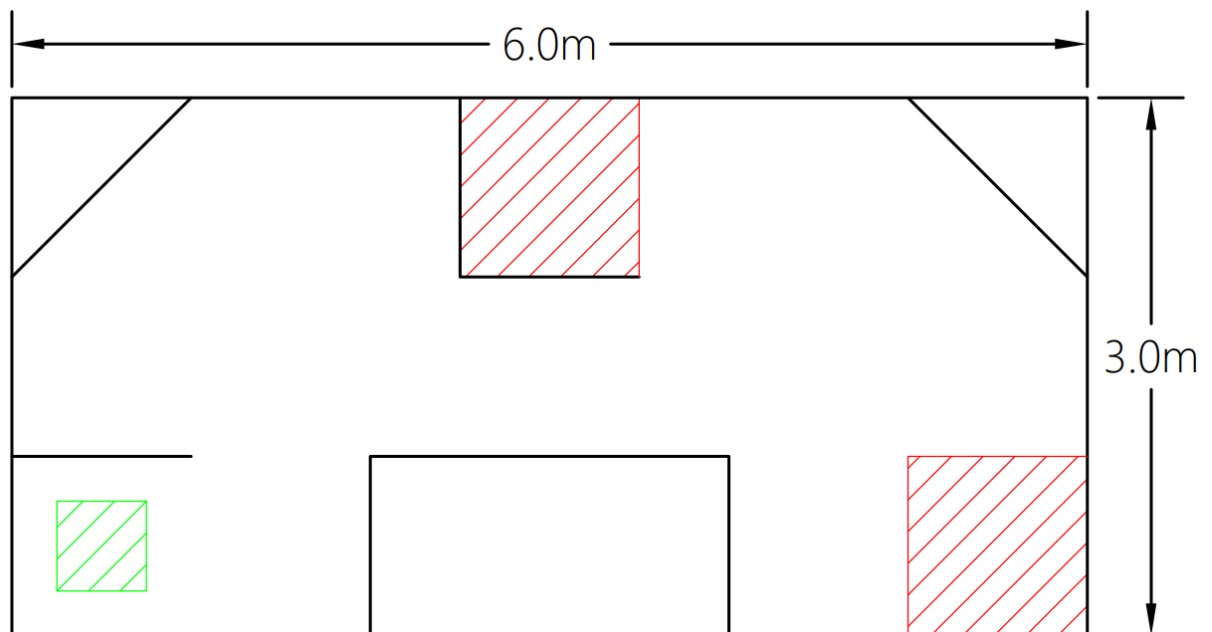


Figure 1 Track view from above

6. Competition progress

6.1. Competition progress

1. Before the competition, participants can test the track no more than 3 times.
2. During the competition participants will have 3 attempts.
3. Between attempts there will be up to a 5 minute break.
4. If the participant is late for more than 5 minutes, the attempt that was supposed to take place will be canceled.

5. When the robot moves out of the start area, no human intervention is possible, otherwise the candy is canceled.
6. If the robot does not move out of the start area, participants can make changes to the robot until the end of the attempt period.
7. During an attempt, it is allowed to start over from the starting point, but the collected candy will be taken back.

6.2. The start

1. The participant will be invited to the competition area.
2. Robot will be placed in the start area by the participant. The referee will inspect if the robot is placed correctly within the starting area.
3. The referee will ask if the participant is ready. And give a countdown from 3 to one to start the attempt by starting the robot either remotely (preferred) or manually.
4. Referee will start a 5 minute countdown timer using a computer program.

6.3. Points – checkers picking

1. 1 checker is awarded by 1 point.
2. One point is awarded for picking up black checker and one point is removed for picking up a red checker and bringing it to the starting position.
3. The checkers must be fully within the starting area. If the checker is put outside the starting zone, no points will be awarded.
4. The checkers inside the robot will be counted after the time limit, if the robot is fully within the starting area and fully stopped.

6.4. Points – candy picking

1. 1 candy is awarded by 1 point
2. The candy must be fully within the starting area. If the candy is put outside the starting zone, no points will be awarded.
3. The candy inside the robot will be counted after the time limit, if the robot is fully within the starting area and fully stopped.

7. Deciding the winner

1. After 5 minutes, the amount of candies/checkers that are in the starting zone will be counted.
2. The referee will ask to stop the robot. If the robot will not be safely removed from the track within 30 seconds, the attempt will be nullified.
3. The robot with the most points wins.
4. If all of the candies/checkers were collected and returned to the start area before the time limit, then that participant will be ranked by the time with other participants who managed to achieve this.