

Junior Category Tasks and Scoring (Draft)

Junior Category



<Background>

- In our ever-changing society where new technological tools are being introduced into daily life more rapidly than ever before, more and more innovative and creative people are needed to fulfill the work of advancing technology.
- By bringing robotics into students' lives, by 'making' with robotics activities accessible for all students, the students will be given opportunities to learn skills and knowledge needed for them to become successful citizens who can contribute to future technological advancement.

This category will develop youth human resource for the realization of a new world where robots and humans live and work together.

Challenges

School Robot Challenge

Programming the standard platform robot to complete tasks that might be useful in a school environment

Home Robot Challenge

Setting tasks equivalent to those in the service robotics category's partner robot challenge and making robots that complete such tasks

- **Objective :** To foster interests and understanding of the importance of robotics development among young citizens; and to prepare students to participate in Robotics and A.I. research and development in the future
- **Participants :** Teams of students aged 19 or younger

* With regards to competition details in 2020, stated details are all present assumptions and the final details will be confirmed by referring to the progress of technology and the results of pre-competition which will be held in 2018.

School Robot Challenge

Tasks

*Utilized Standard Robot Platform (Pepper)

1. Skill Challenge
2. Open Demonstration
3. Technical Interview

Task1 (Skills Challenge)

There will be 4 skill challenges:

- Hold a scripted conversation
 - Identify and greet a person
 - Instruct a human partner to touch one of sensors. Once the human partner successfully touch the sensor, the robot gives a feedback that indicate that the task was successfully completed. Repeat the task with eight different sensors randomly
 - Identify a number on a 30cmx30cm dice. The robot displays and call out the number to a human partner.
- ❖ Teams will have the opportunity to attempt each skills challenge 3 times. Each challenge will be awarded either a Pass or Fail grade.

Task2 (Open Demonstration)

The Open Demonstration is an opportunity to demonstrate the team's solution, and how the tasks are executed. Teams are encouraged to seek out both creative and innovative solutions as well as unexpected and challenging problems to be solved.

1. Teams are required to identify a problem/issues/situation from a school environment, that may benefit from the use of a Humanoid robot.
2. Teams are required to develop creative and innovative solutions to the problem they have identified, for their robot to accomplish at school.
3. The teams are required to execute the tasks during the Open Demonstration.
4. Solutions should be original and support learning and/or activities at school.
5. Solutions should enhance, not distract student learning and/or activities at school.
6. Solutions should aim to complement, not to replace the existing teachers' role in the school.

* The duration of the demonstration routine must no more than 10 minutes.

Task3 (Technical Interview)

A 15-minute face-to-face interview with a panel of judges in which robot performance, algorithms and programs are assessed against technical criteria. Creative and innovative ideas and use of technical aspects are rewarded with higher scores. Judges are interested in determining students' understanding of the robotic technologies and programming they have used as well as the processes they went through to arrive at their preferred solution. Teams are expected to use this opportunity to show authenticity and originality of their work. Each team members must be prepared to answer questions about the technical aspects of their involvement in the development of ideas and programming.

All teams will have a 15-minute technical interview judging during the competition.