RoboCupJunior 2022 OnStage

Technical Description Paper

Team Information

Team Name:
Country / Region:
Do you need a translator? If yes, in what language? :
☐ Yes or ☐ No. Language:
Has your team read the 2022 OnStage and RoboCupJunior rules and scoresheets?
☐ Yes or ☐ No. By selecting "Yes", you confirm that you have read the rules for competition, you understand them and agree to fully comply with them. These can be found at the official website (http://junior.robocup.org). If in doubt, please access the site and download the latest one.
The Participants Name and their Technical Role: What are the roles of each team member? Please indicate each team member's name and their role. We would like to know how you contributed to the project as a team member.
Member 1:
Member 2:
Member 3:
Member 4:
Member 5:

Photo of Stage Area and measurements (Virtual Competitors only):

Stage Width:
Stage Height:

Collaboration:

Please link any team websites or online depositories for open source learning and continuing development.
It is always important to share our expertise and learning. RoboCup is a great way to learn more, share your experience and aspire to new project goals. Learning opportunities are the ultimate goal of the RoboCup Community.

Technical Information <mark>[500 Words Per Paragraph]</mark>

Overview:

What is the theme of your project? If you made multiple robots, please describe them below (the number, kinds of robots, etc.).

Mechanical Design:

Detail all the ingenuity that the team has made to realize difficult movements of the robot, such as moving smoothly, keeping balance, grasping objects, and so on. Include photos of designs and models (CAD/CAM models etc.).

Sensors:

Which sensors are you using? For example: Touch, Light, Sound, Rotation, Shaft encoder, Compass, Proximity, Ultrasound, Color, Compass, etc.

Materials:

Detail any materials used in constructing robots, including the purpose of weight reduction, strength preservation, improvement of finish, etc.

Electrical/Electronic Design:

Have you developed your own electronics? For example, motor controllers, voltage regulators, amplification circuits, etc. Include photos of custom board designs (schematics, board layouts etc.).

Wireless Communication:

Are you using wireless communication(s)? If so, what type? No team is allowed to use Wi-Fi. Please refer to the Official RoboCupJunior OnStage 2022 Rules.

Power Management:

What kind of battery is built into/used in your robot? Please clarify the name and type of battery, together with current and voltage.(Teams should comply with Rule 1.4 in the Official RoboCupJunior OnStage 2022 Rules). What measures are you using to regulate your power supplies?

Programming Language:

What programming language(s) are you using? Are you using any libraries/datasets? You may wish to add a link to your GitHub repository.

Sources:

Please provide links to any manuals, documentation or open source repos used in the development of the project.

Performance Information <mark>[1000 Words Per Section]</mark>

Features:

An OnStage Performance must showcase the implementation and integration of robotic features in ways that visually enhance or add value and contribute to the theme or story being portrayed. Consequently, teams must present four of what they believe are their robotic features: for example system/sensor integration, electromechanical design, interaction or software solutions implemented on their robot(s). The aim should be to present the integration of the chosen features and how the features contribute to the progression of the performance.

Interaction:

Do you interact with the robot? (i.e. human to robot, robot to robot interaction) If so, how?

Integration:

How do you use your sensors, actuators and robot(s) to create a cohesive performance? Are you using multisensor systems? Do the robots rely on each other during the performance?

Challenges and Difficulties:

What challenges and difficulties has the team encountered? How did you overcome them? If you did not, what would you do if it happened again?

Appendix [Limit to 5 pages - excluding code]

Photos and Images of the robot(s):

If there is a design drawing of the robot, or if you have photos or notes of the development process, please provide them. Those will be useful to show and prove that the team's robots and designs are their own. If you are including photos or documents, please ensure that they fit within five sheets of A4 size paper.

Main code for robot(s):

Please attach the latest version of your code for each of the robot(s). The code is allowed to be modified after submission and will not be used during the judging process, only to inform the judges of the team's skill level and the programming language.