DEBI Robotics Challenge 2023

Rules and Guidelines

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Challenge Description

In continuation of the efforts of Digital Egypt Builders Initiative (DEBI), launched by the Egyptian Ministry of Communications and Information Technology, the DEBI's Robotics & IoT Track launches the annual DEBI Robotics Challenge. Inspired by the GdR TurtleBot Challenge 2018 (TU Darmstadt), DEBI Robotics Challenge is a physical competition to advance robotic software and autonomous capabilities.

Competition Overview

DEBI Robotics Challenge 2023 is a competition between robots in one-vs-one matches in a predefined playground. The playground is divided into two identical halves separated by a red line mounted on the ground. The main mission for each team is to reduce the number of balls in their area by moving these balls to the opponent's side. Robots must act autonomously during the match without any human intervention.

Robot Specifications

DEBI will provide each team with a TurtleBot robot equipped with a manipulator to use during the challenge. However, each team has the freedom to bring their own robots to compete with. In case any team decides to bring their own robot (or build it), they must obtain an approval from the competition committee on a case-by-case basis.

Rewards

The winning teams will receive a financial award, as follows:

- First place: 80,000 EGP

- Second place: 60,000 EGP

- Third place: 40,000 EGP

Important Dates & Competition Location

The competition will take place on May 13, 2023, on DEBI's campus at Gezira Youth Center at 12th El Gabalaya Street, Zamalek, Cairo (Location). The competition tentative timeline is as follows:

- Orientation Session: Saturday 1st of April 2023 (online)

- Registration Deadline: Sunday 2nd of April 2023, at 11:59 pm (online)

- TurtleBot Workshop: Monday 3rd of April 2023 (online at 2:00 PM)

- Competition Day: Saturday 13th of May 2023 (in-person at DEBI Campus)

Robotics Challenge Rules

1. All team members must be physically present on the competition day.

2. The competition is based on knockout matches till the final match.

3. The robot must be fully autonomous, and it cannot step onto or pass the red line or the playground walls.

4. If a robot crosses the boundaries of its side of the playground, the robot has to start over from the initial position.

5. The moved ball to the opponent's side will be counted only if the robot does not touch the red line.

Eligibility Criteria and Teams Formation

- All participants must hold the Egyptian nationality.

- All participants must be a registered undergraduate student at any of the Egyptian Universities (from a relevant background).

- Graduates from no more than 5 years are allowed to participate.

- Each team is expected to consist of 3-5 members.

- Teams with more than five members will not be allowed to participate in the competition.

Technical Specifications

- DEBI provides TurtleBot 3 Waffle Pi equipped with OpenMANIPULATOR-X 3 with installed configuration of Ubuntu 20.04 and ROS1 Noetic Ninjemys.

- Playground dimensions: 420 cm x 300 cm, walls height is 31 cm.

- Balls: diameter = 5.5 cm, Color = random.

Contacts

Please send your inquiries to robotics@debi.gov.eg

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