AUTOBOTS

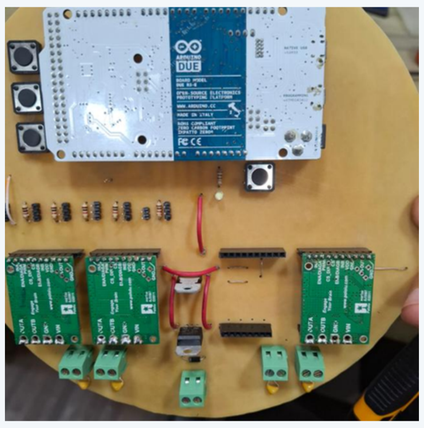
ROBOCUP JR. SOCCER LIGHTWEIGHT ROBOT

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PRESENTATION

- Robotics: research, discovery and construction of a machine as a result of knowledge acquisition.
- The team's first work with Arduino microcontroller
- Robot soccer as a robotics learning tool
- Creation, manufacture and programming of two autonomous robots.



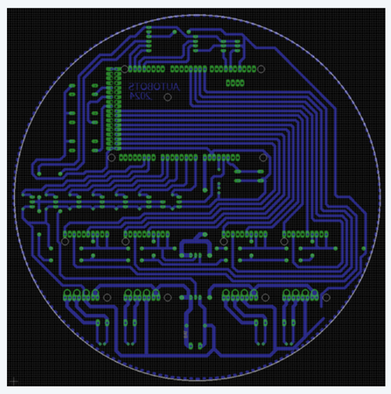


HARDWARE

- The robot is composed of 4 layers.
- 4 motors in vector arrangement. 12 possible movements.
- A light sensor identifies the white line. A compass and IRSeeker guide the robot's movement. Ultrasonic sensors prevent it from leaving.
- Arduino DUE as a microcontroller.

ELECTRONICS

- Circuit developed in EAGLE software.
- Development of libraries and components.
- Understanding of electronic principles, components and design.
- Home manufacturing, component welding.

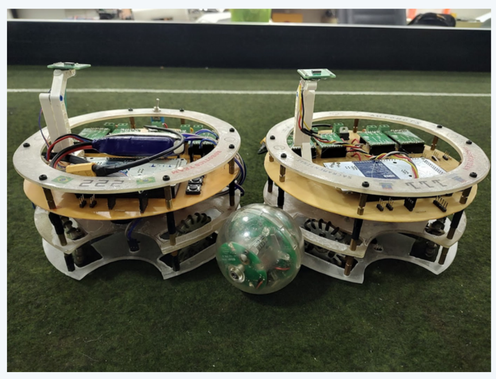


SOFTWARE

- C programming language, fully textual.
- Robot searches for the ball, except when it is crooked or seeing a line.
- Robot positions itself behind the ball and pushes it towards the opponent's goal.
- Use of decision structures, loops, variables and functions.

CONCLUSION

- Competitive environment encourages learning.
- Robot building challenges develop skills.
- The complexity of the project and the different tasks to be performed highlight the importance of collective work.



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