

Team: RoboteamE5vos

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Hi, we are the RoboTeamE5vos, we came from the Central European country, Hungary, the home of the famous footballer Ferenc Puskás and the computer scientist János Neumann. We came from the school Eötvös József secondary school, one of the most prestigious schools in Hungary. Our team had been to many competitions before. We have spent from 4 to 5 hours a day for a week to make our program as best as we can. This is our team and we are looking forward to competing during the event of the 2021 RoboCupJunior Soccer Championship!

We have participated in the RCJ Rescue Line in 2019, in AMTS (auto motor expo), and won First Hungarian RobotSim.

One of our biggest competitions was at Kecskemét city, held by Automation and Technology University, the theme was communication between robots. We used Lego EV3 robots to make this project and built the robot from the movie Wall-E which communicated with an

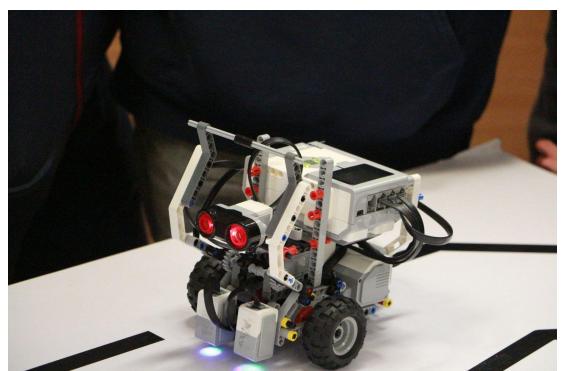
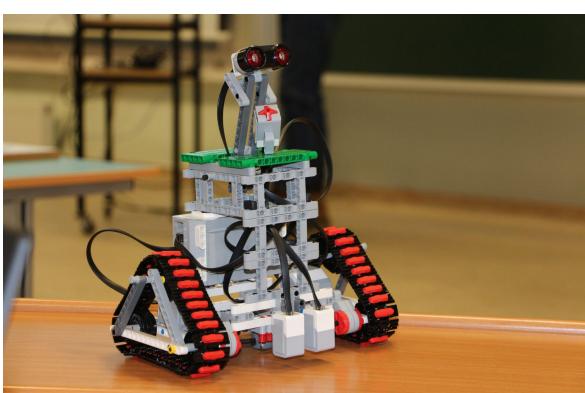
old-styled joystick and shared information with it to adjust the controls. We sent in what we made and they invited us to the real competition.

There, we solved tasks with the robot, but unfortunately, one computer crashed and we lost one of our program files, but the others worked,

and in the end, we achieved sixth place. Also, there was another teammate with us who helped with our work, but sadly he can't participate in this competition. We participated in Autosim, a self-driving auto challenge that was also held at Kecskemét.

The pictures are from the competition by Automation and Technology University.

The year's highlights were the First Hungarian Robot Simulation Competition, where we won the golden prize and preparing us for the RobocupJR SoccerSim competition was a lot of fun as well.



Since we participated in the SoccerSim competition, we had no hardware and did every software from scratch. Our tactic is simple: have two attackers and one defender. And also implemented that function for our robots to shoot the ball from the kick-off to the side of the goal, so it's more likely to score a go

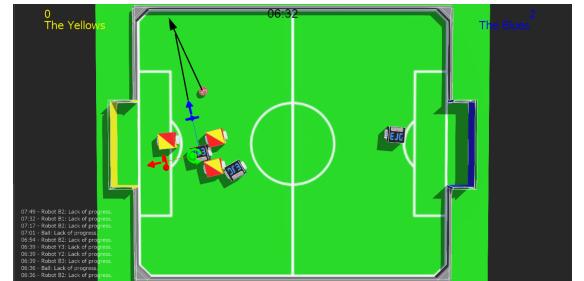
The goalkeeper has four stages. Firstly, if the ball is near the robot, and coming towards our goal, it is going to shoot it away. The second stage is, if it is not in front of our goal, it's going to go to y 0.5 or y -0.5 (depending on the team). The third stage is against our goalkeeper keeping the ball near our goal after it passed its line. Due to lack of time, in this case, the robot just simply avoids the ball (goes out of its way). Finally, if none of the already mentioned cases are happening, the robot is going to go to the x position of the ball (without changing its y position). All of the stages have a rank, the lower the number of

the stage is, the higher its rank is. The robot is going to choose the stage with the higher rank

Trying to shoot a goal from kick-off was pretty easy, it is just basically turning the robot with the right angle.

The attacker robots are calculating the

future position of the ball with trigonometry and targeting that point. This part of our code is the most complicated, and we spend lots of time working on it. We wanted to implement more strategy (like when the ball is in the corner of the opponent's team's goal, one of the attackers goes in front of the goal and waits for the ball), but every change in the code just broke it and we didn't have time to figure it out, why.



Thanks to this competition, we enhanced our knowledge about robot simulations and virtual platforms, and we extended our python programming skills. In the future, we are planning to learn and use new developing technologies, like camera recognition or learning Artificial Intelligence. This year we started to work with Arduino and Microbit (earlier we used Lego EV3), and we are looking forward to integrating them into our future projects. Next year we are hoping to participate in RobocupJR both in the Rescue and the Football categories.