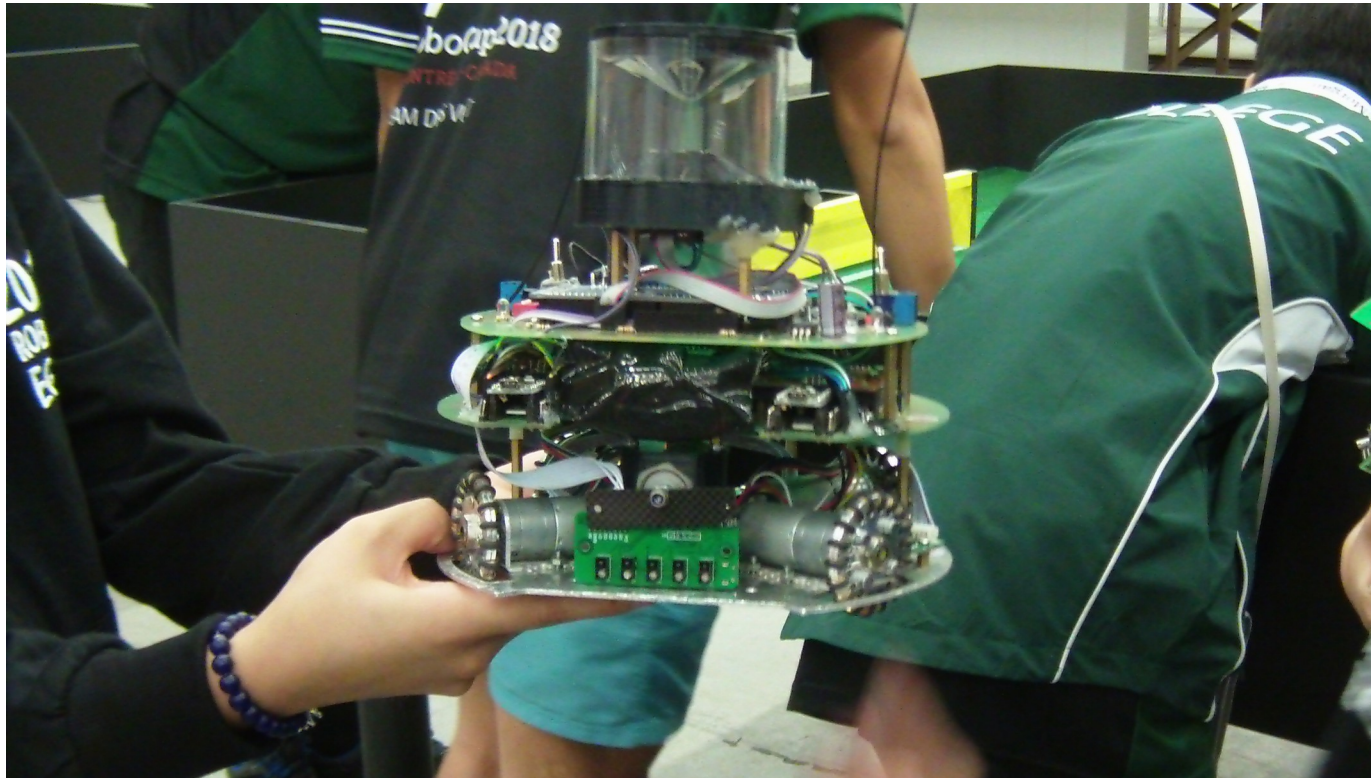


# RCJ2018 Montreál, tanulságok



# Robot foci



	Soccer Open	Soccer Lightweight
sub-league		
size / diameter	Ø 22.0 cm	Ø 22.0 cm
height	22.0 cm *	22.0 cm *
weight	2400 g **	1100 g **
ball-capturing zone	2.5 cm	3.0 cm
voltage	15.0 V***	12.0 V***

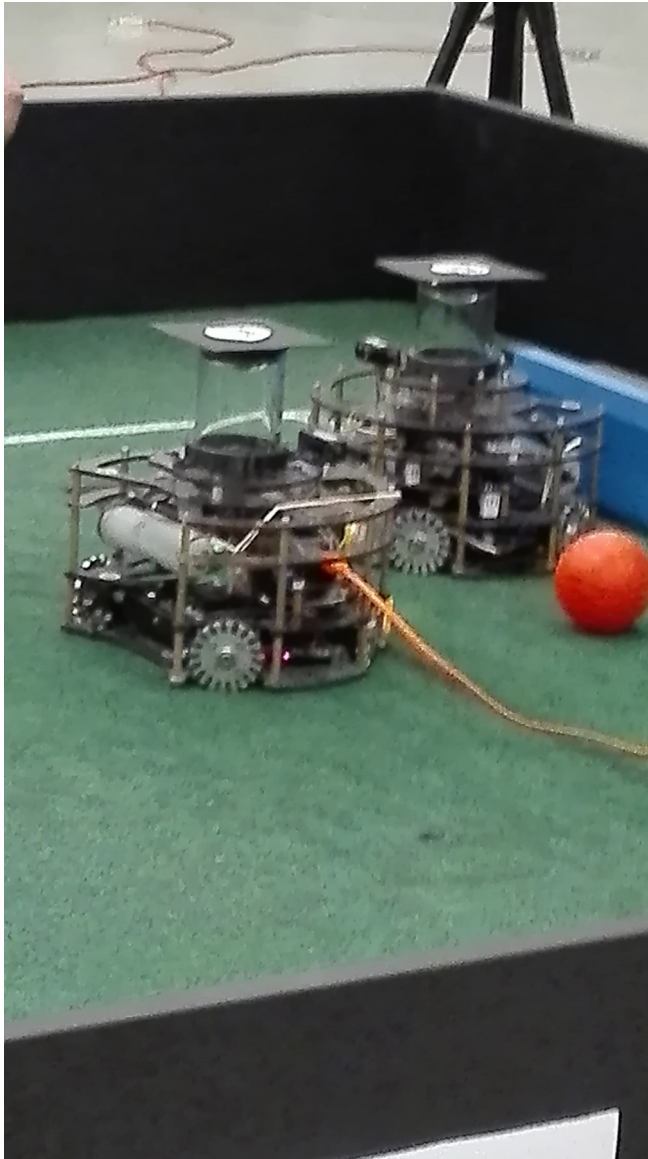
\*\* The weight of the robot includes that of the handle.

\*\*\* We encourage teams to include protection circuits for Lithium-based batteries

\*\*\* Voltage limits relate to the nominal values, deviations at the power pack due to the fact that charged will be tolerated.



# Kamerával a labdakeresés



Az Open all-ligában passzív labda kapura rúgása a cél.

Minden roboton kamera volt pl. Pixy,

és gömbtükrrel visszavert pályakép alapján követte a labdát.



# Poszterek

## TEAM Reset

Taipei, Taiwan

RoboCup MONTREAL SOCCER OPEN LE

Website: <https://rcjteamreset.blogspot.com>

### ABSTRACT

We have two members on our team, both of us study in Taipei Municipal Daan Vocational High School. This is the our team participating in RoboCup Junior international event. We use weekends and time after school to develop in our school lab, took us around 20 hours per week. Building the robots took us a lot of time, but we learned a lot well. The most difficult part is to learn to use software such as Autodesk Inventor for robot designing, Autodesk Eagle designing all by ourselves. We spend about 500 dollars on each robot.

Our robots are mostly the same to each other, the difference is the program part. One robot will always go as far as the other one can go either offense or defense. So we have two kinds of strategy to deal with different opponent: offense robot will move as fast as it can to the ball and try to score goals. The defense robot will always stay in front of goal, once it detected the ball is approaching, it will block the ball and kick the ball away from our goal.

### ABOUT US

We are team Reset (old name Rebellion) from Taipei, Taiwan. We participate in RoboCup Junior Soccer since 2014.

Prizes we won:

- Four times 1st place Taiwan Open
- Twice 1st place international event
- One Superteam 1st place

This year we have only two members, Moses and Joshua. We are in charge of different tasks, as shown in the table below.

Moses	Programming	PCB design
Josh	Hardware design	Documentation

### ROBOT DESIGN

Both of our robots have 4 chassis made of carbon fiber. The 3D printed parts are made of PLA. We try to put heavy components in the bottom layer and make the motors tightly, and we designed a 3D printed cover to make the structure stronger. Also, we found the little space between the motors is just enough to fit in our battery. The middle layer is designed to hold all the distance sensors and the camera. Finally the top chassis also the most simple one, it is only our vision part and compass on it. But to make it more accurate, we put a NeoPixel ring on it. It has 24 RGB LEDs that can show the ball direction as we designed.

### TEAM PHOTO

200g  
300g  
1300g

▲ Heavy bottom layer  
▲ Designed in Autodesk Inventor

▲ Our robots

## CAMERA

driver system,

ake a omnidirectional mirror, our team used a 3D printer to create plastic curvature. We printed more than 5 prototypes until we finally found out the best-fit curve.

ing the creation of the mirror, we put PVC-silver on wood plate with a hole in the middle. Next, we heated the material until it could be modified into the expected shape. We then put it on top of the plastic curvature and finally completed the mirror.

We can't see the ball when it's inside the opening and directly in front of the robot.

We cut out the front of the base so that the camera can see the ball.

Acrylic cylinder is taller than before so the camera can now see further.

## DRIBBLER

We designed our dribbler on Solidwork, made adjustments and printed plastic models.

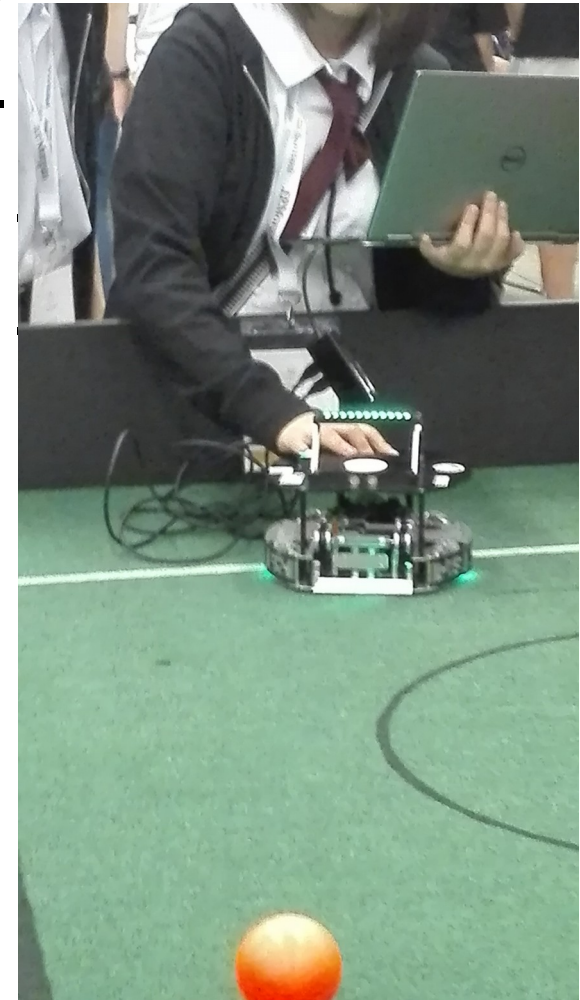
We got the basic structure of the wheel from Japanese

# Új Szabályrészlet

- 9.3 Technical Challenges (plusz pontokért)
  - 9.3.1 Precision shooter . . . . .
  - 9.3.2 Landmark localization . . . . .
  - 9.3.3 Innovative usage of landmarks . . . . .

After the penalty time has passed, robot will be placed on the unoccupied neutral spot **furthest from the ball, facing its own goal.**

After a robot has been fixed, it will be placed on the unoccupied neutral spot **furthest from the ball, facing its own goal.**





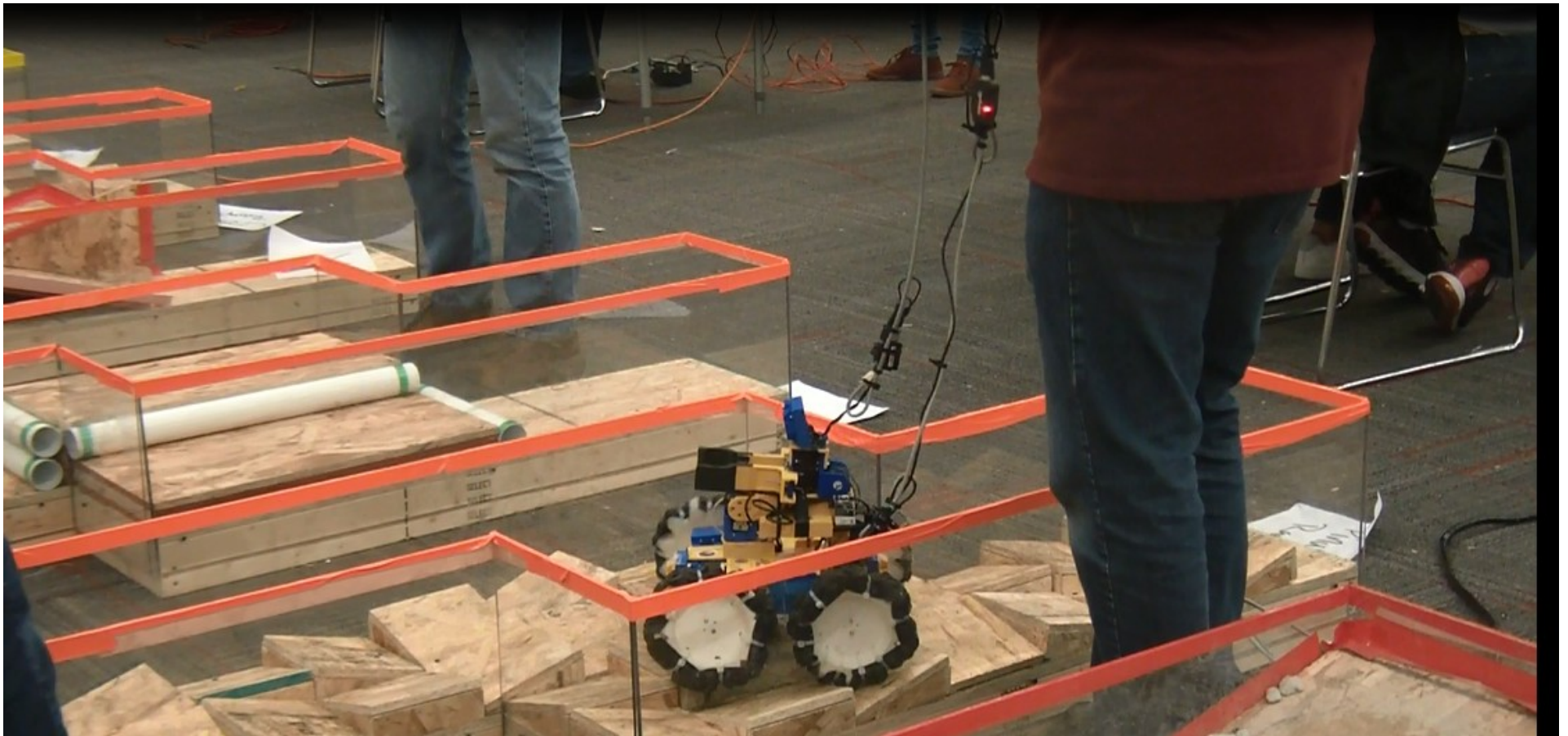
# Rapidly Manufactured Robot Challenge (RMRC)

- A Gyorsan Gyártott Robot al-liga (RMRC) a RoboCupRescue Robot versenyrésze.
- Az RMRC az alacsony költséggel, gyorsan előállítható kis (30 cm szélességű) robotok versenye, amelyekkel veszélyes küldetési feladatokat biztonságosan hajtanak végre.
- Középiskolások , egyetemisták és kezdő kutatók egyaránt ugyanazon kihívásokkal versenyeznek .

<http://oarkit.intelligentrobots.org/home/the-arena/>

<http://oarkit.intelligentrobots.org/home/wp-content/uploads/2015/07/2016-06-1.3ma-RoboCupRescueRulebook-miniarea.pdf>

# Rapidly Manufactured Robot technical challenges (RMRC)



# Rapidly Manufactured Robot Challenge (RMRC)

