



Istituto d'Istruzione Secondaria Superiore

**IISS MARCONI HACK**

# HACKATRONICI

# Team

# Alessandro Chiarulli

- Robot Programming and Assembly
  - Poster Design

# Gabriele Montrone

- ## - Robot Programming

# Giuseppe Clemente

- # Robotics Components - Robot Programming

Mario Recchia

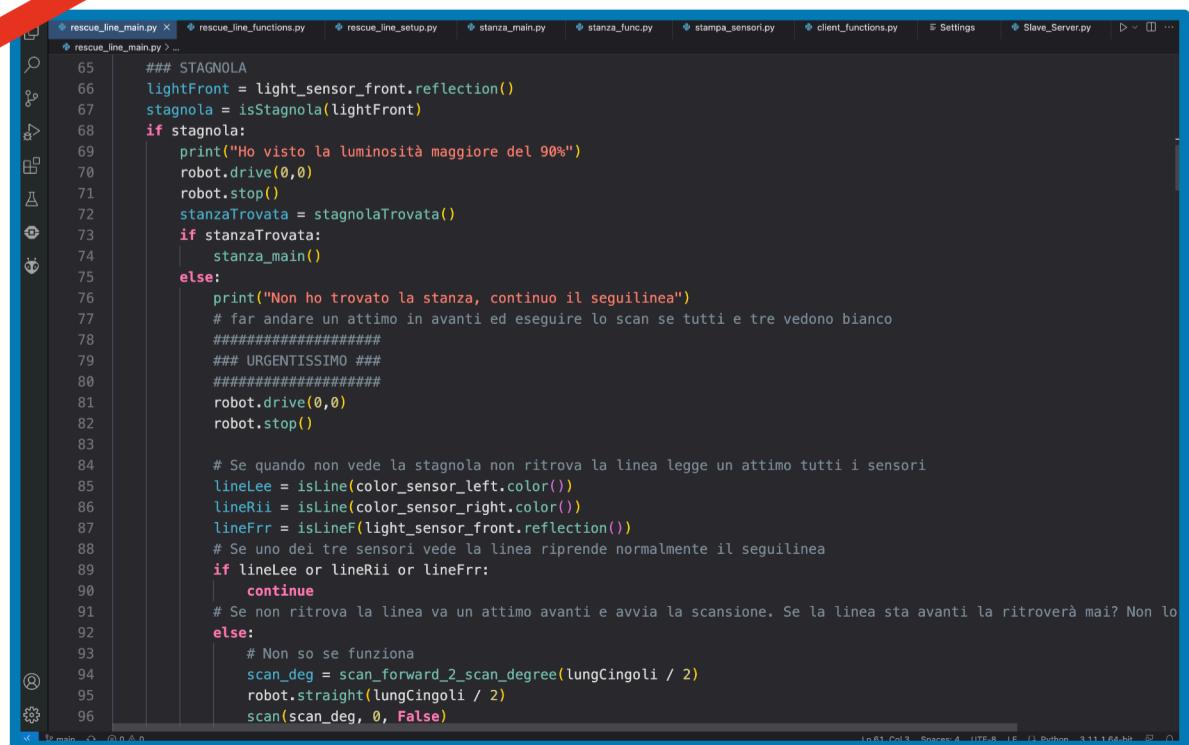
- # Robotics Research

## - Robot Programming and Assembly

Nicola Vacca

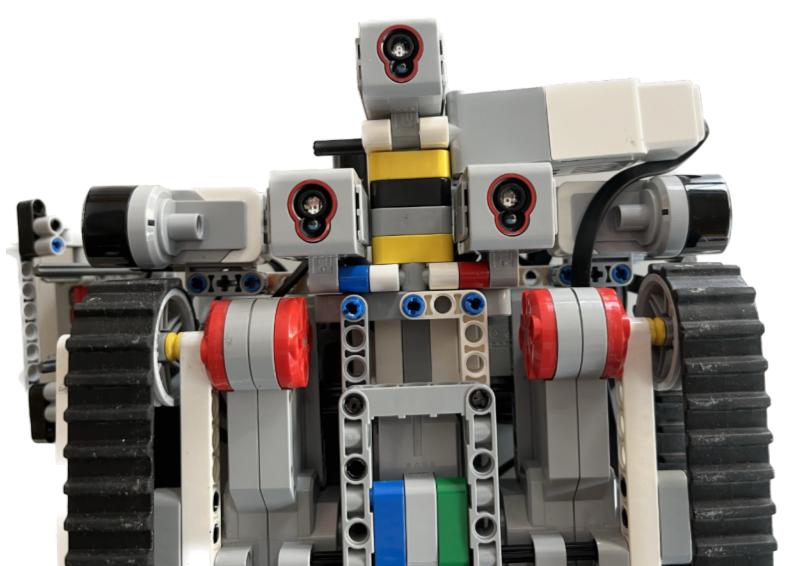
- ## Riccia Vasse - Accompanying teacher

# Code

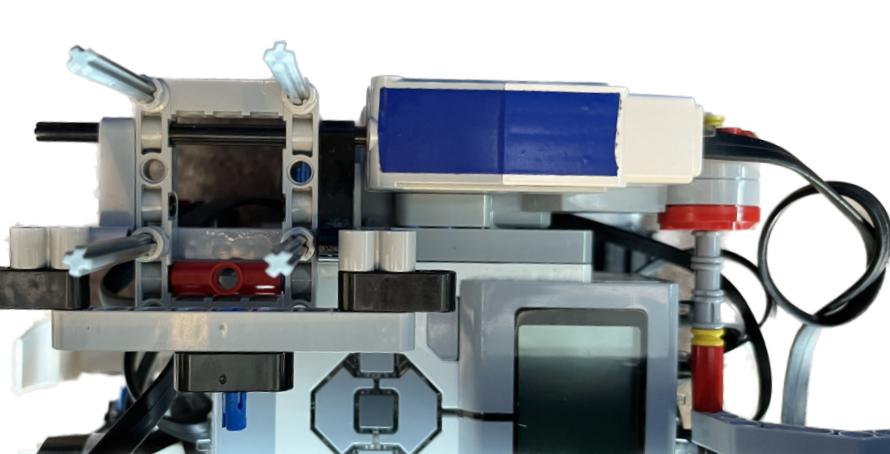


For programming we used MicroPython, a linux based operating system to install on the EV3 brick. With MicroPython we had the opportunity to code the robot in python with all the complex function it has.

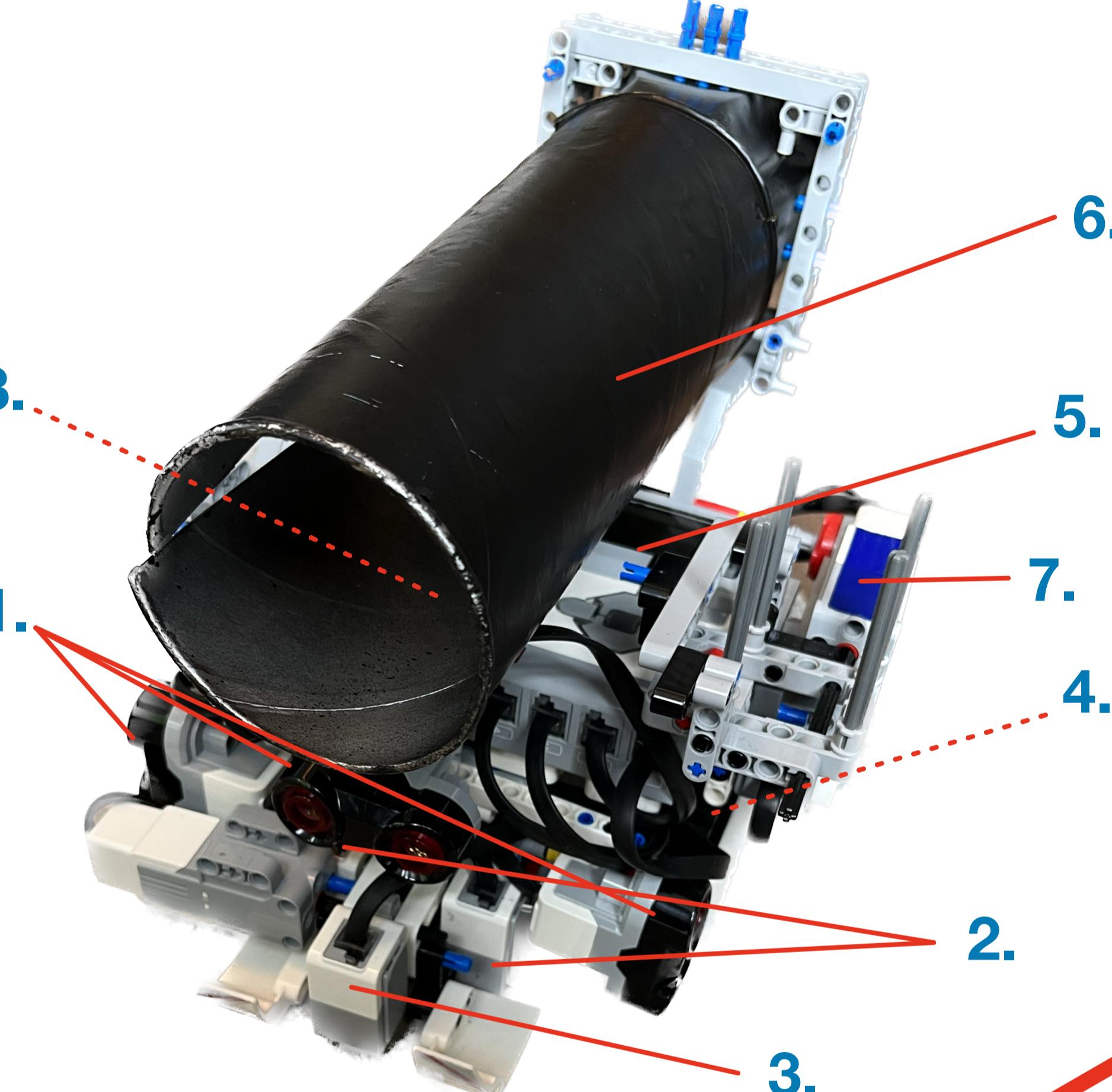
# 3 sensors for a precise line following, covering all possible exceptions



Robotic arm to accommodate the Rescue Kit and bring it to the safe zone



# Skills



- This exploded view diagram illustrates the internal components of a LEGO Technic wheel assembly. The diagram is labeled with numbers 1 through 8, each pointing to a specific part:

  - 1.** Points to the black tire tread.
  - 2.** Points to the black wheel hub.
  - 3.** Points to the black wheel rim.
  - 4.** Points to the blue and grey side panel.
  - 5.** Points to the grey vertical support rod.
  - 6.** Points to the grey horizontal support rod.
  - 7.** Points to the blue and grey central gear assembly.
  - 8.** Points to the red dashed line indicating the center axis of the wheel.

# Robot

- 1. 4x Ultrasonic Sensor**  
Ultrasonic sensor is used to recognize the obstacle and walls of the evacuation zone.

- 2. 2x Color Sensor**  
recognize the line, greens and safe  
areas in the evacuation zone.

- ## 4. Big Motors

### For robot movement

- ## 5. 2x EV3 Brick

- ## **6. Tube to Collect Victims**

Solid tube to collect victims  
in the evacuation zone

- ## **7. Medium Motor for Rescue Kit**

Medium Motor to leave the  
Rescue Kit

- ## 8. Gyroscope Sensor

To control the robot turn rate  
and position