

IT Lightning Talk



Raspbuggy

An autonomous Wifi-enabled programmable RC car

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Consuming vs Producing



Kids, what do we know about them ?



Kids, what do we know about them ?



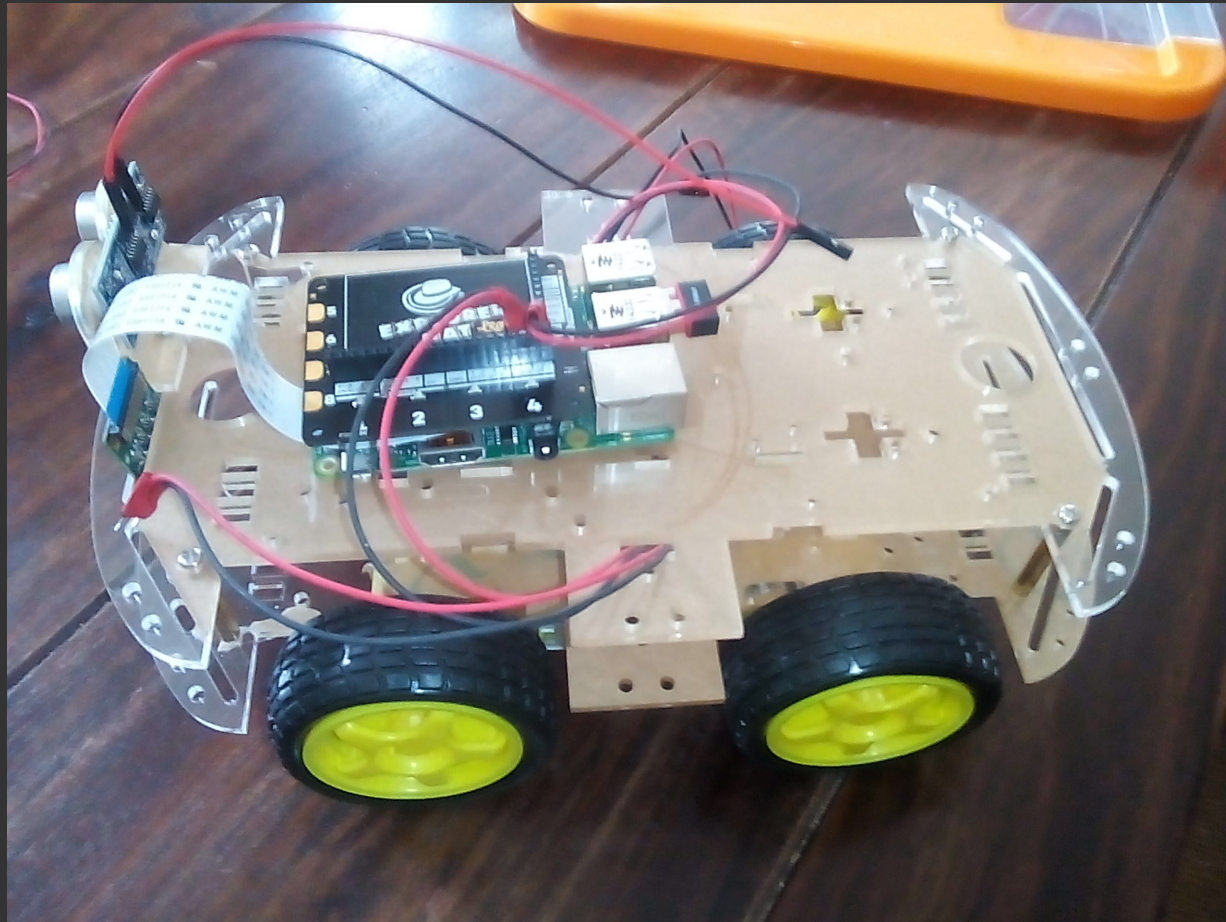
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Blocks + RC Car =



Raspbuggy in a nutshell

- A Raspberry Pi + Hardware layer
- A Python HW abstraction layer (Driver)
- A Web IDE (based on Google Blockly)
- A self-standing Wifi infrastructure AP
- Your web browser

Raspbuggy Web IDE

The image shows a web browser window titled "Raspbuggy - Chromium" displaying the Raspbuggy web IDE. The browser address bar shows "localhost:8080/index.html#". The IDE interface includes a top navigation bar with a "Run" button, "Current Status : Stopped", and options for "Open...", "Save as...", "Settings", and "Help". On the left, a sidebar lists categories: Logic, Loops, Math, Text, Variables, Functions, Lists, Movements, Sensors, and Time. The main workspace contains a Scratch-style block-based program:

- A "repeat 4 times" loop block.
- Inside the loop, an "if not" block with the condition "There is an obstacle within 20 centimeters."
- Under the "if not" block, a "do" block containing:
 - A "print" block with the text "Going forward".
 - A "Move Forward" block for 500 milliseconds.
- Under the "if not" block, an "else" block containing:
 - A "print" block with the text "Turning left".
 - A "Turn left" block by 90 degrees.
- Below the loop, a "print" block with the text "Program complete !".

On the right, the "Script preview" tab shows the equivalent Python code:

```
from Drivar import Drivar
from DrivarNxt import DrivarNxt
drivar = DrivarNxt()
drivar.initialize()

for count in range(4):
    if not (drivar.isObstacleWithin(int(20))):
        print('Going forward')

drivar.move(direction=Drivar.DIR_FORWARD,durationIn
Ms=int(500))
else:
    print('Turning left')
    drivar.turn(direction=Drivar.DIR_LEFT,angle=int(90))
print('Program complete !')
```

Follow-up

- Robotics Competition – 17 June 2015
 - Youtube playlist : <http://cern.ch/go/dVr9>
- CERN Webfest – 31st Jul to 2nd Aug
 - Raspbuggy miniprojects
- Contact with local schools and educators
- Raspberry PI day 2015

Official links

- Github repository
 - <http://github.com/cmcreobotics/raspbuggy>
- Official feeds
 - <http://cmcreobotics.github.io/raspbuggy> (RSS)
 - Twitter : @CMCRobotics (follow us !)
 - CERN Social : #raspbuggy

Thank you very much

Attributions

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