



# Codez la science

7 et 8 Octobre 2016

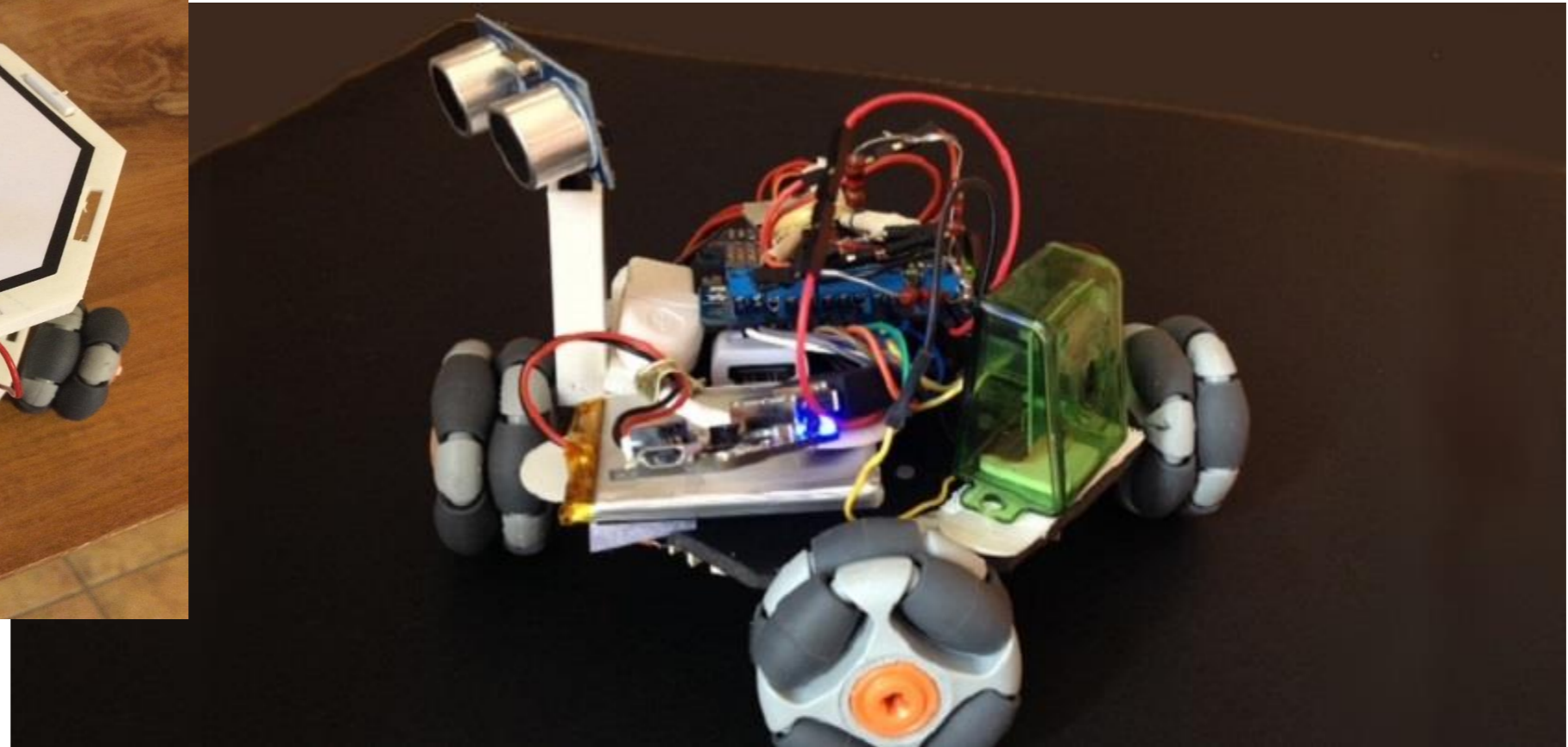
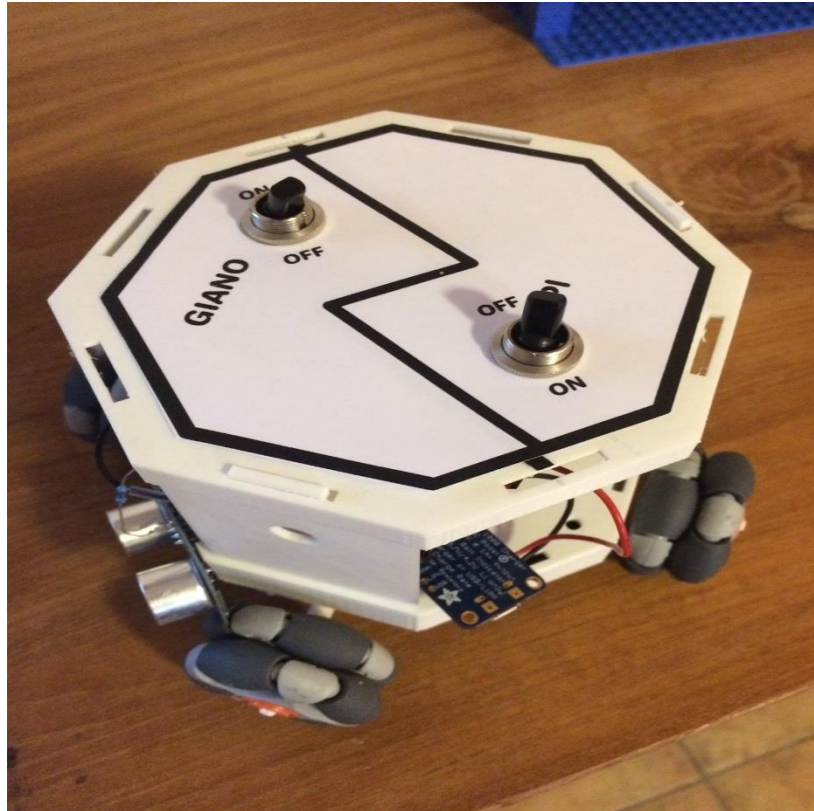
CodeWeek. 



## Atelier GianoPi

# GianoPi

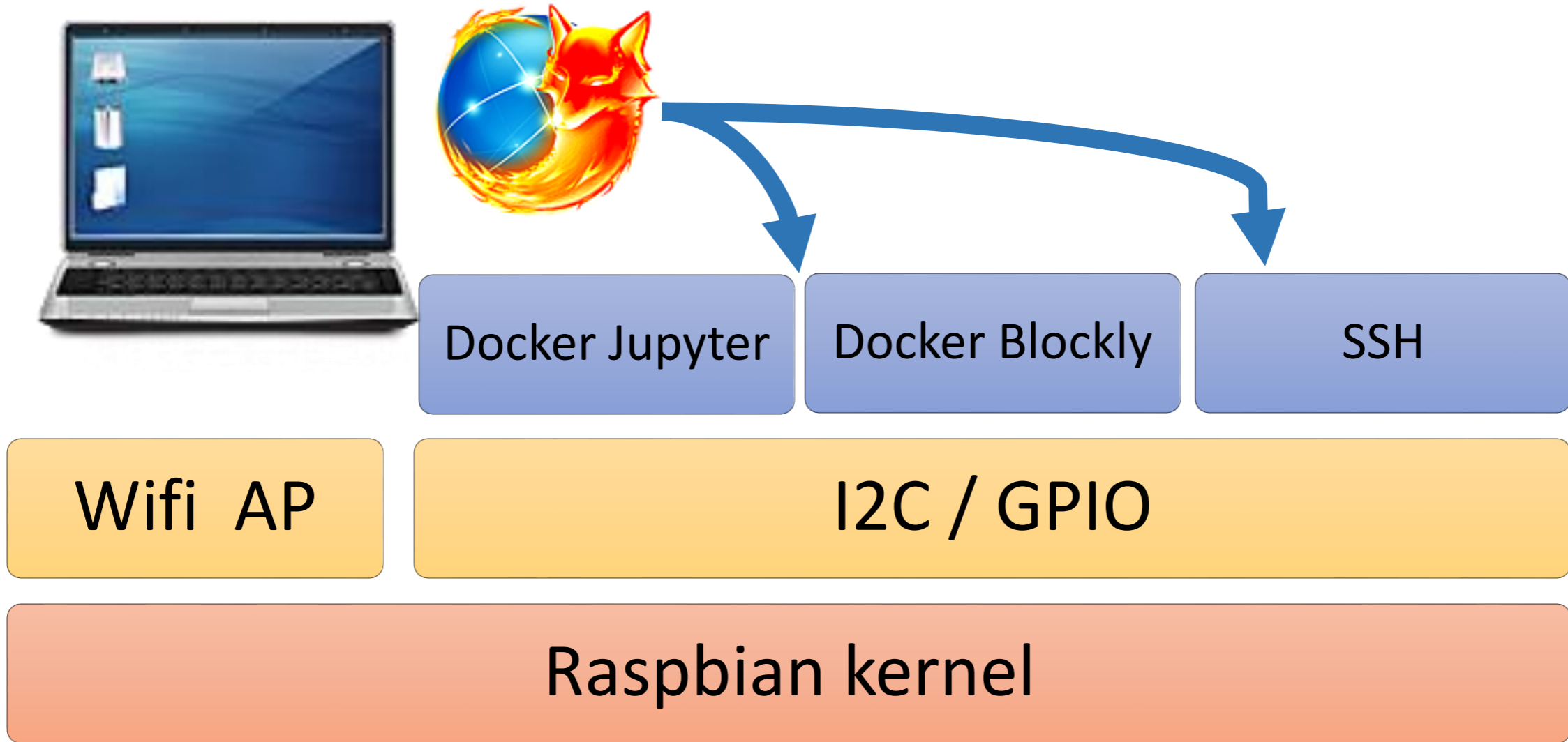
une voiture programmable



# Assemblage

- Un châssis en PLA / ABS (Impression 3D)
- Un Raspberry Pi Zero + Dongle Wifi
- Un adaptateur moteurs DC (Adafruit DC Motor HAT)
- Quatre moteurs et supports associés
- Quatre roues holonomiques
- Une caméra 8 mégapixels
- Un détecteur d'obstacles à ultrasons

# Architecture Logiciel



# Programmer avec Blockly

The image shows a screenshot of the Blockly programming environment. On the left, there is a sidebar with categories: Logic, Loops, Math, Text, Variables, Functions, Lists, Movements, Sensors, and Time. The main workspace contains a script with the following structure:

- repeat 4 times
  - do
    - if not There is an obstacle within 20 centimeters.
      - do
        - print "Going forward"
        - Move Forward for 500 milliseconds.
      - else
        - print "Turning left"
        - Turn left by 90° degrees.
- print "Program complete !"

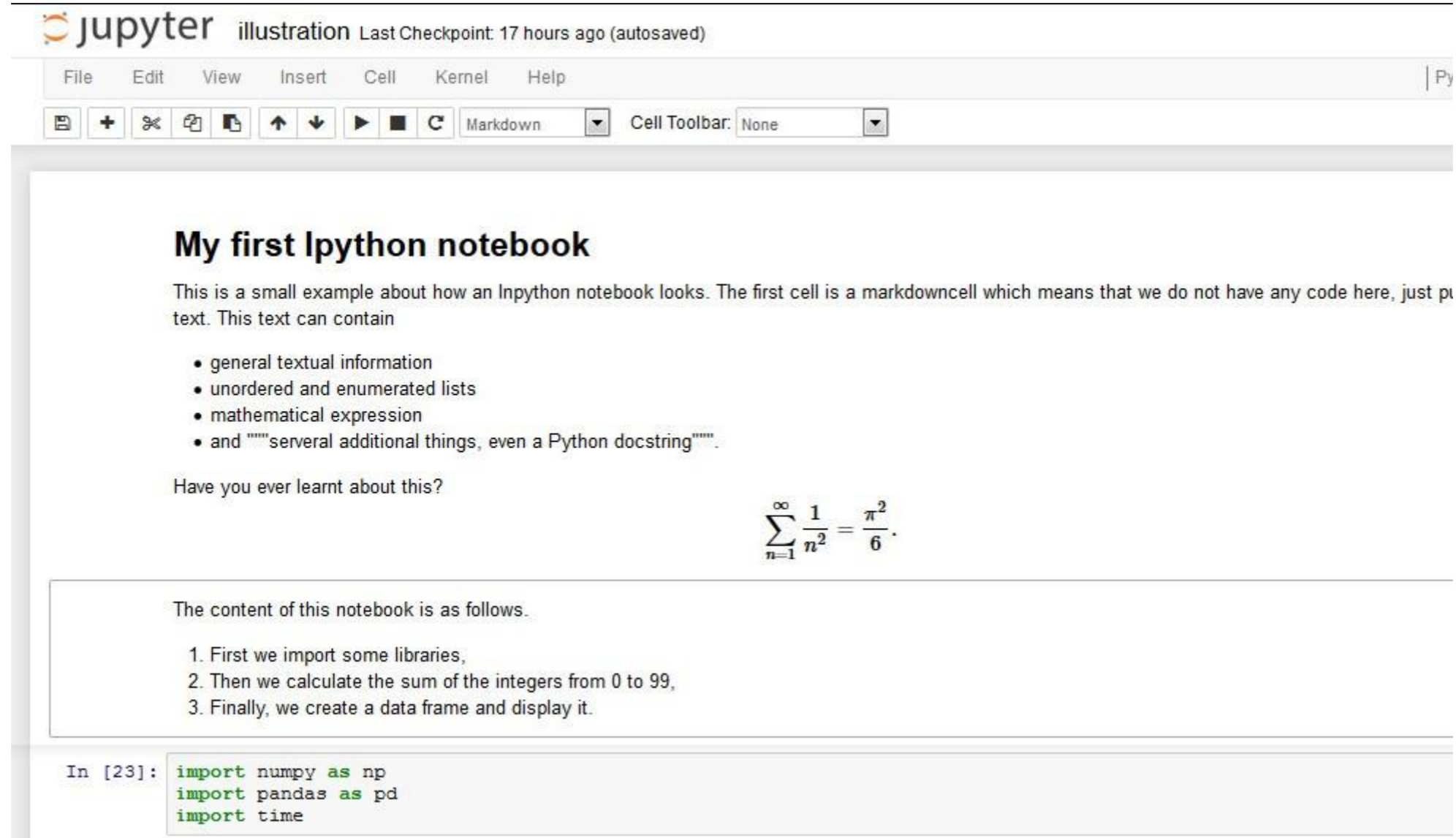
On the right, there is a console window with two tabs: Console and Script preview. The Script preview tab shows the following Python code:

```
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 !')
```

# Programmer avec Jupyter Notebook



The screenshot displays the Jupyter Notebook interface. At the top, the logo and name 'jupyter' are visible, followed by the file name 'illustration' and the status 'Last Checkpoint: 17 hours ago (autosaved)'. Below this is a menu bar with options: File, Edit, View, Insert, Cell, Kernel, and Help. A toolbar contains various icons for file operations and cell execution, along with a dropdown menu set to 'Markdown' and a 'Cell Toolbar' dropdown set to 'None'. The main content area features a bold heading 'My first Ipython notebook'. Below the heading is a paragraph of text: 'This is a small example about how an Ipython notebook looks. The first cell is a markdowncell which means that we do not have any code here, just pt text. This text can contain'. This is followed by a bulleted list: '• general textual information', '• unordered and enumerated lists', '• mathematical expression', and '• and ""several additional things, even a Python docstring""'. Below the list is the question 'Have you ever learnt about this?' and a mathematical equation: 
$$\sum_{n=1}^{\infty} \frac{1}{n^2} = \frac{\pi^2}{6}.$$
 A horizontal line separates this content from a text box containing the sentence 'The content of this notebook is as follows.' followed by a numbered list: '1. First we import some libraries,', '2. Then we calculate the sum of the integers from 0 to 99,', and '3. Finally, we create a data frame and display it.'. At the bottom, a code cell is shown with the prompt 'In [23]:' and the following Python code: 

```
import numpy as np
import pandas as pd
import time
```

# Driver sur GitHub

CMCRobotics / driver

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Driver a hardware abstraction layer for a collection of wifi programmable RC cars. — Edit

25 commits 1

Branch: master New pull request

- bcopy Added a final GPIO.cleanup
- modules
- .gitignore
- LICENSE
- README.md

README.md

## Driver



# Raspbuggy

An autonomous Wifi-enabled programmable RC car

Driver a hardware abstraction layer for a collection of wifi programmable RC cars, such as the [GianoPi holonomic car](#) or the [Raspbuggy](#) and a variety of hardware control adapters (Pimoroni Explorer HAT, Push-pull drivers, Adafruit DC Motor, Lego Mindstorm).

# Merci à nos sponsors et partenaires





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