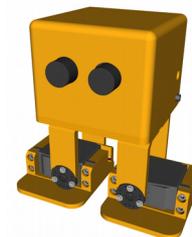


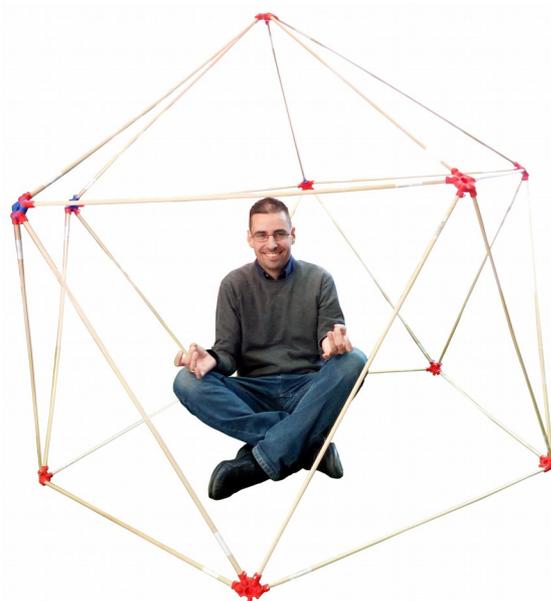
# Entorno JdeRobot-Academy para la docencia práctica de robótica





Universidad  
Rey Juan Carlos

# Grupo de Robótica



**Gsync**



**JdeRobot**

Juan González Gómez  
[@Obijuan\\_cube](#)



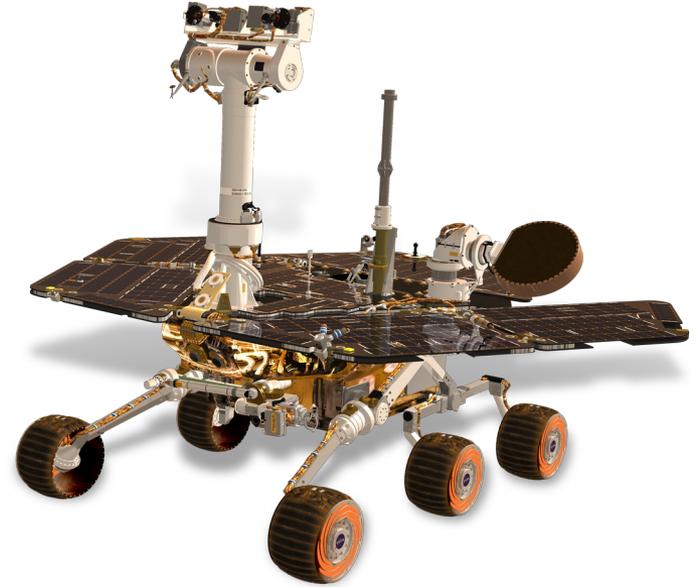
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*Robots en  
Ciencia-ficción*



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# *Robótica en la vida real*



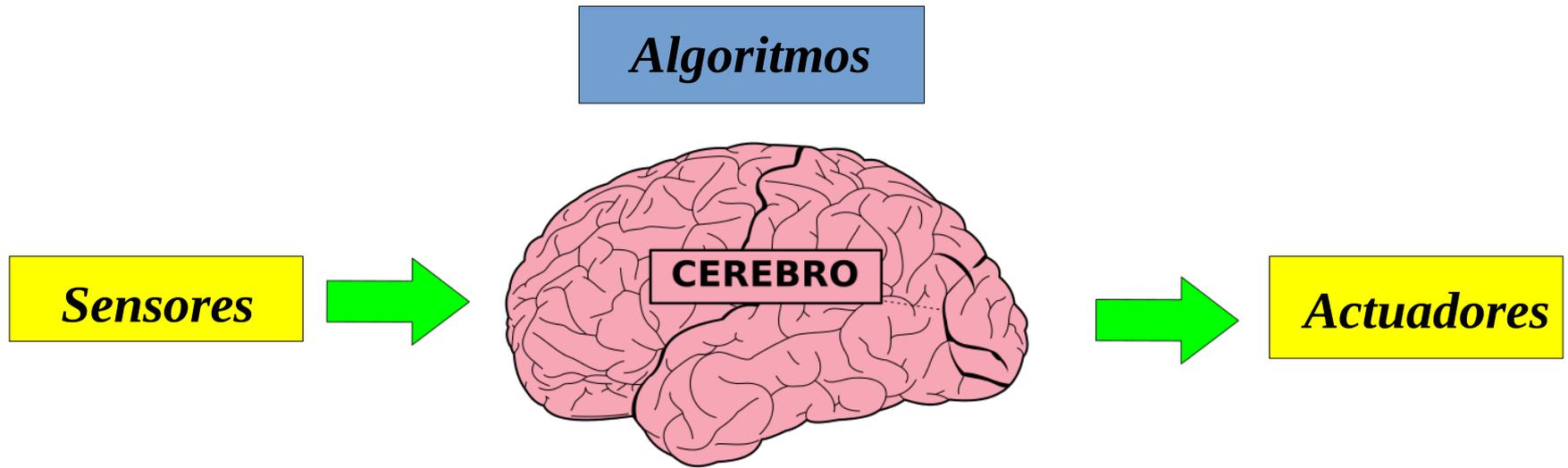
U online

*Robots móviles:  
campo prometedor*

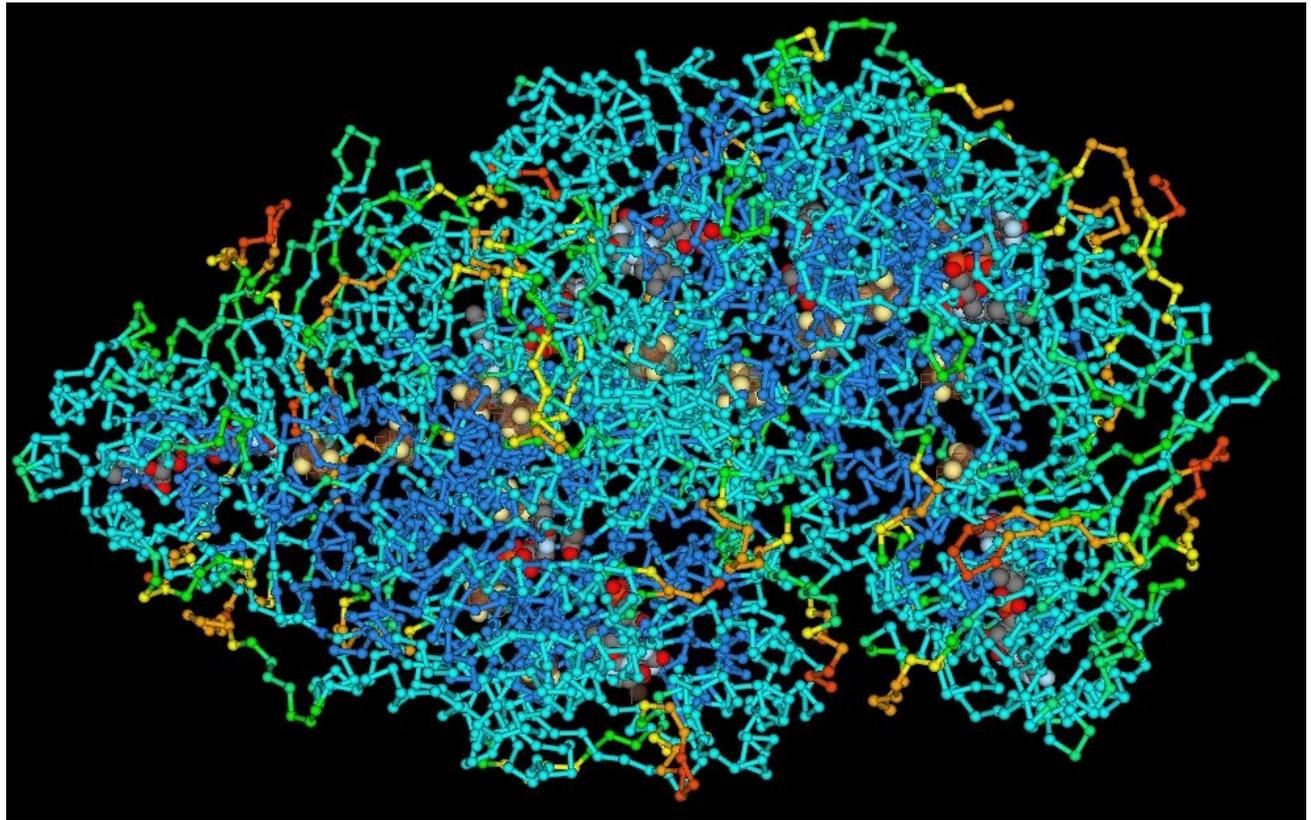


online

# Énfasis en los algoritmos

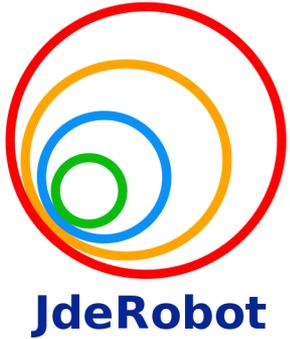


*Principios de diseño:  
Dosificación de la complejidad*



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# Solución: Aplicación académica para cada práctica



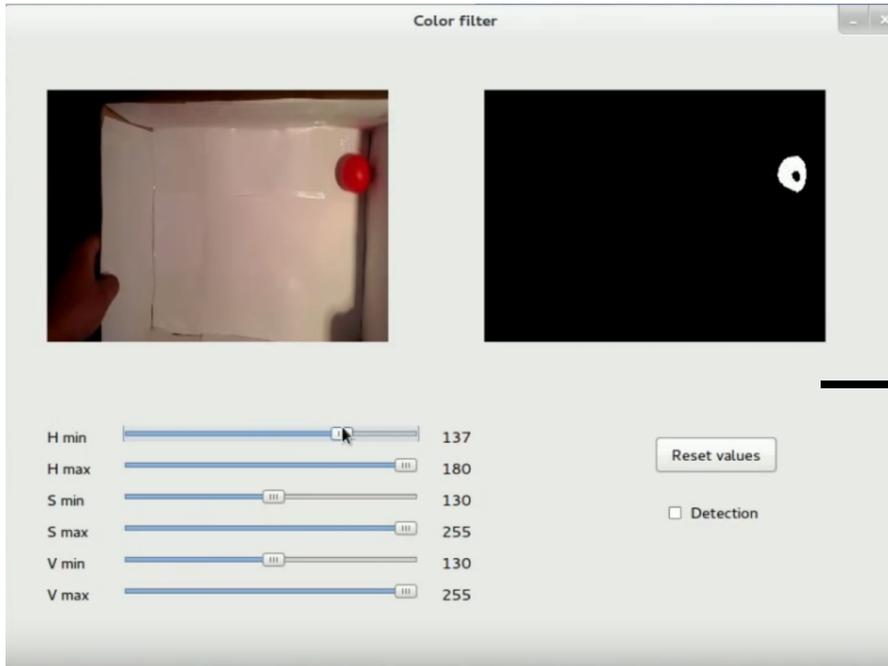
The screenshot displays the JdeRobot application interface, which is divided into several functional areas:

- Input image:** Shows a camera view with overlaid sensor data. Text below it reads: Distance: -14, Speed: 1.13326618378, Angle: -1.29103851318, YawDPS: -0.127734268188.
- Filter output:** Shows a processed image of the road surface.
- Control Panel:** Features several sliders for sensor parameters: H min (90), H max (97), S min (0), S max (50), V min (45), and V max (80). It also includes 'Reset values' and 'Untrack' buttons.
- Altitude Control:** A vertical slider for altitude, with 'Land', 'Play', and 'Stop' buttons, and a 'Rotation' knob.
- Sensors:** A cluster of gauges including a pitch/roll/yaw indicator (Pitch: -0.10, Roll: 0.86, Yaw: -167.98), a battery level gauge (0-100%), and three linear velocity gauges for Linear X (m/s), Linear Y (m/s), and Linear Z (m/s).
- Camera:** A main camera view showing a road perspective, with a 'Change Camera' button below it.



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# Niveles crecientes de complejidad (grado, máster, doctorado)

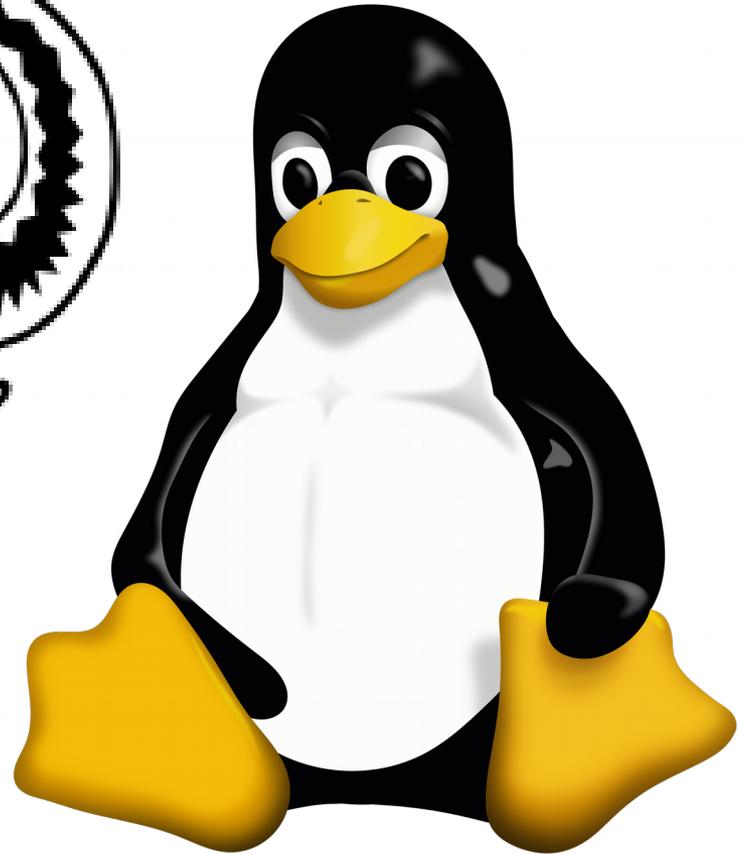
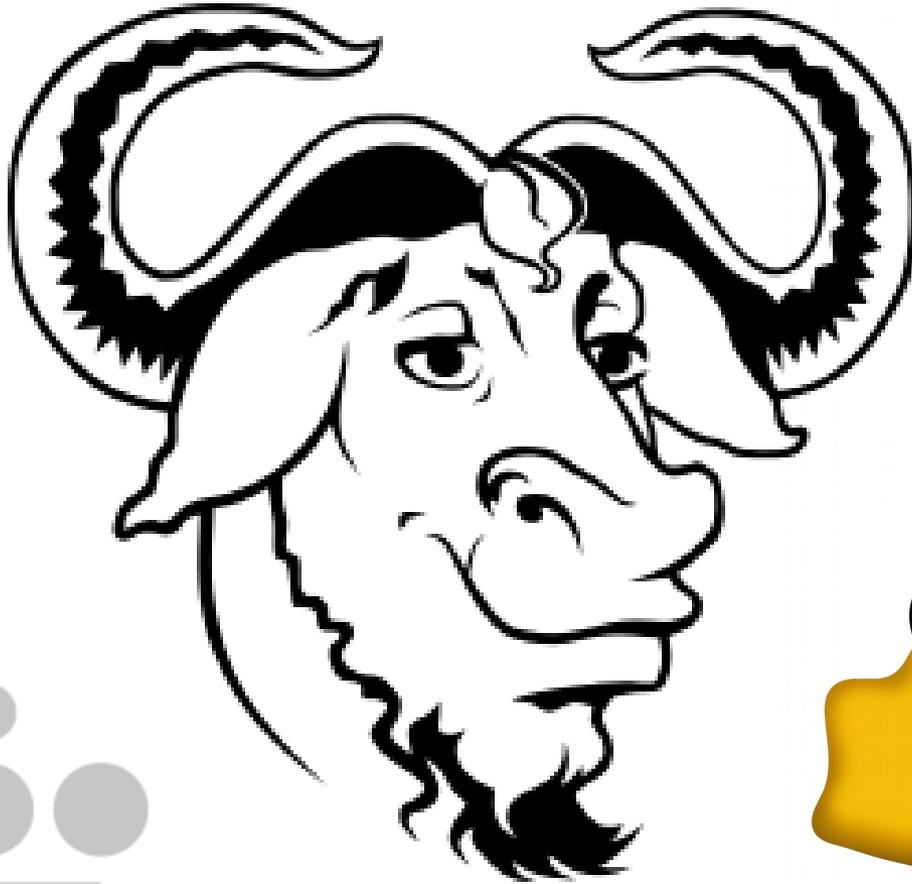


```
31
32 //Opencv
33 #include <opencv2/core/core.hpp>
34 #include <opencv2/imgproc/imgproc.hpp>
35 #include <opencv2/highgui/highgui.hpp>
36
37 #include <string.h>
38 #include <sstream>
39 #include <cstdio>
40 #include <csignal>
41 #include <unistd.h>
42 #include <cstdlib>
43 #include <list>
44
45 #include <zlib.h>
46 #include <logger/Logger.h>
47 #include <jderobotutil/interfaceHandlers/CameraHandler.h>
48 #include <jderobotutil/interfaceHandlers/CameraTask.h>
49 #include <ns/ns.h>
50
51 #include "easyiceconfig/EasyIce.h"
52
53 bool flag=false; /** boolean to keep a check on signal */
54
55 namespace cameraserver{
56
57 class CameraI: public jderobot::CameraHandler {
58 public:
59     CameraI(std::string propertyPrefix, Ice::CommunicatorPtr ic):jderobot::CameraHandler(propertyPrefix,ic){
60         //we use formats according to colorspace
61         std::string fmtStr = prop->getPropertyWithDefault(prefix+"Format","YUY2");//default format YUY2
62         imageFmt = colorspace::Image::Format::searchFormat(fmtStr);
63         if (!imageFmt)
64             throw "Format " + fmtStr + " unknown";
65
66         imageDescription->size = imageDescription->width * imageDescription->height * CV_ELEM_SIZE(imageFmt->cvType);
67         imageDescription->format = imageFmt->name;
68
69         // mirror image
70         mirror = prop->getPropertyAsIntWithDefault(prefix+"Mirror",0);
71
72         //fill pipeline cfg
73         uri = prop->getProperty(prefix+"Uri");
74         framerateN = prop->getPropertyAsIntWithDefault(prefix+"FramerateN",25);
75         framerateB = prop->getPropertyAsIntWithDefault(prefix+"FramerateB",1);
76
77         std::cout << "URI: " << uri << std::endl;
78
79         if(uri.size()>3)
80             capture.open(uri);
81         else
```



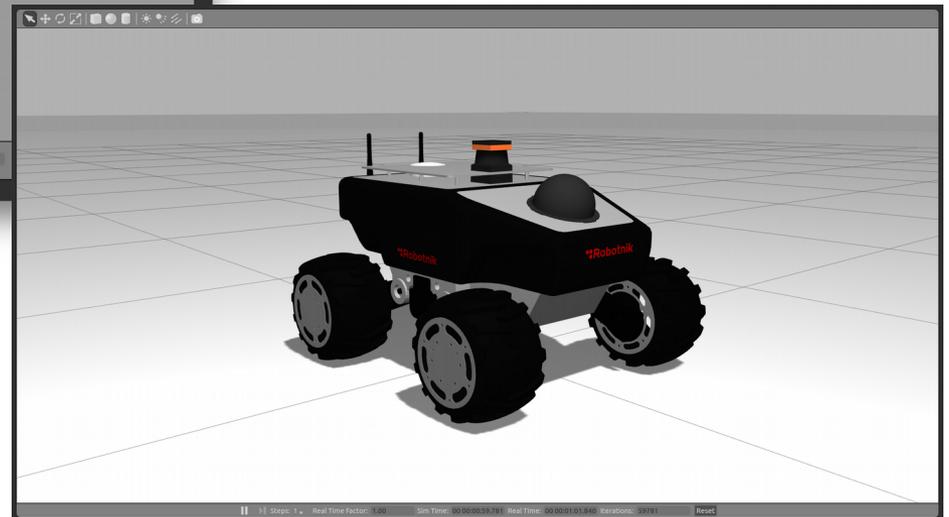
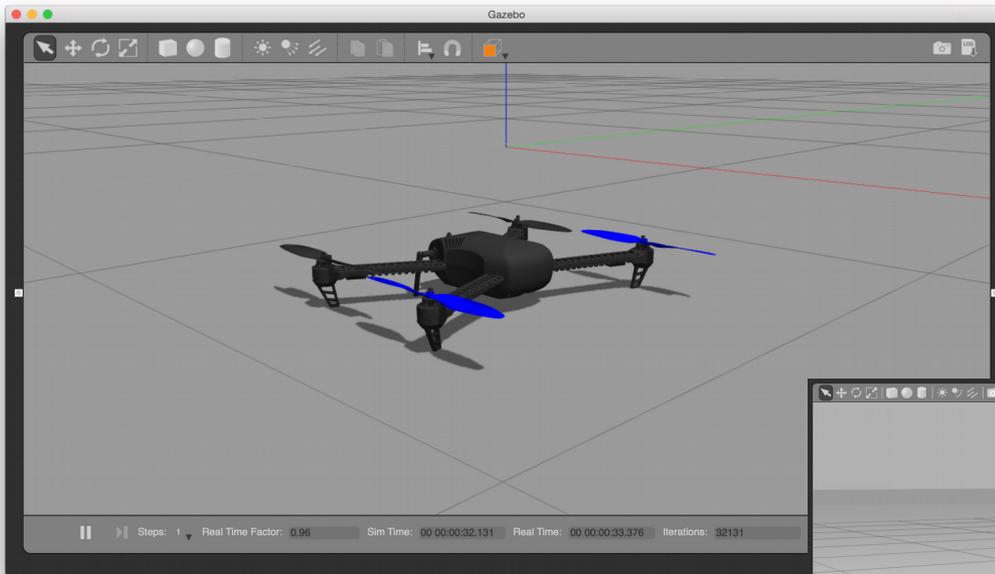
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*Software libre*



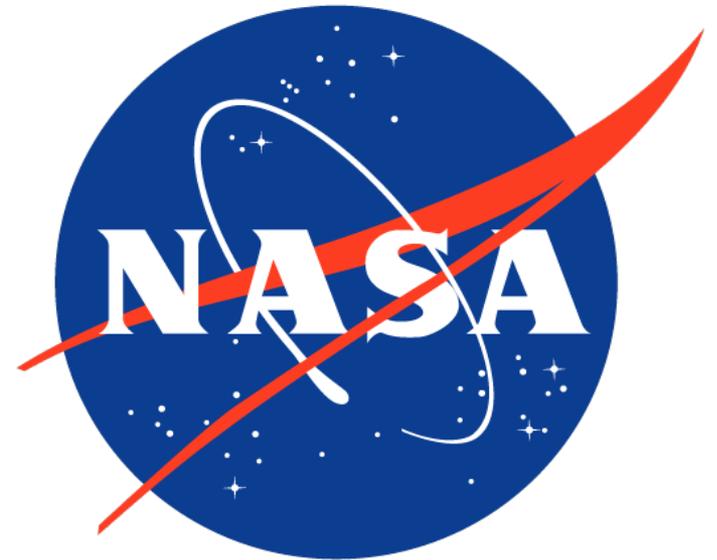
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# *Simulación: prácticas heterogéneas*



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*Lenguaje Python:  
Foco en el robot*



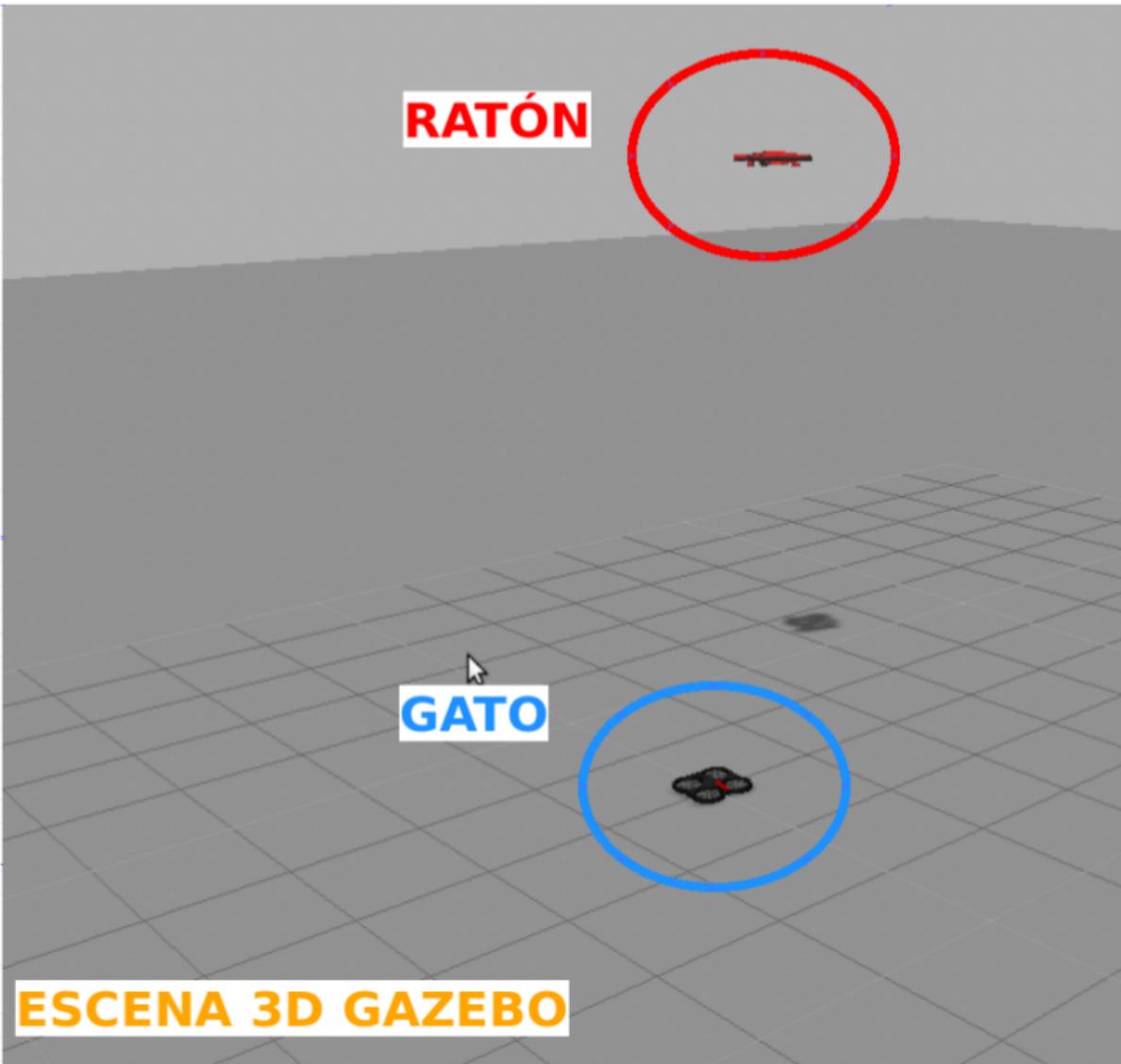
WU online

# *Gamificación: Prácticas como un juego*

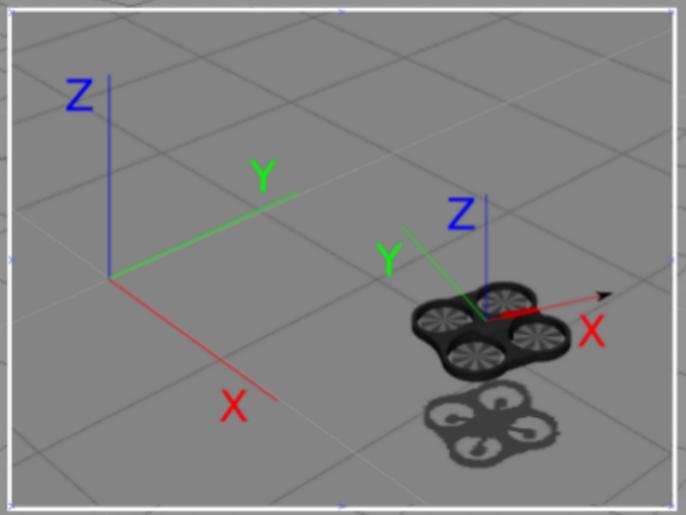
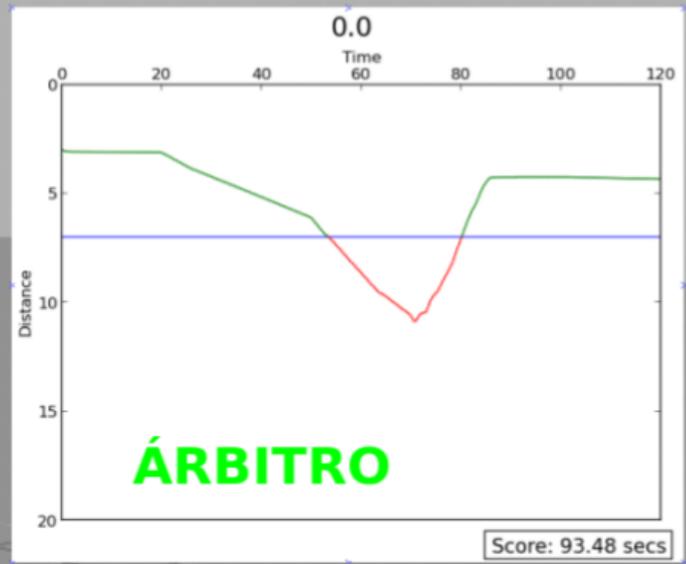


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# Práctica: Drones y persecución



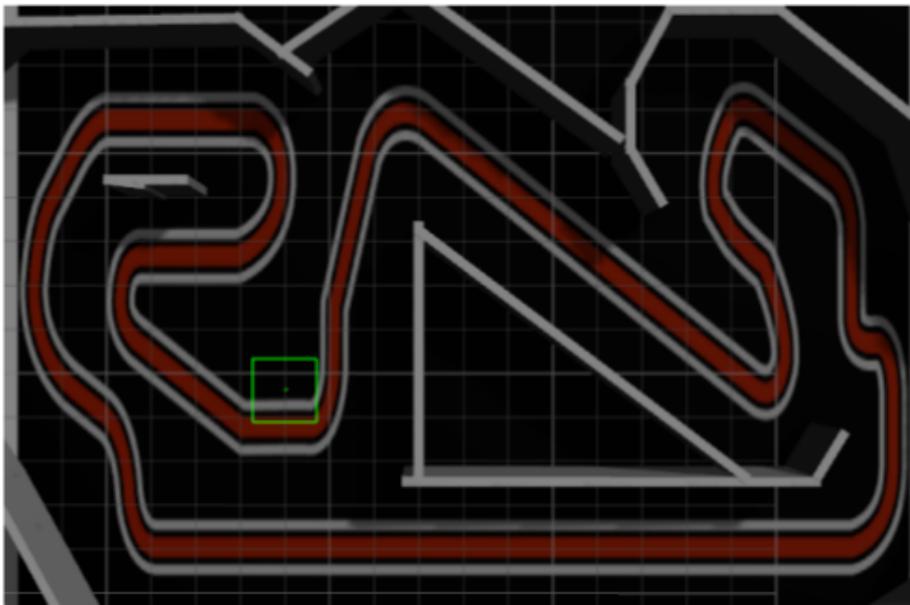
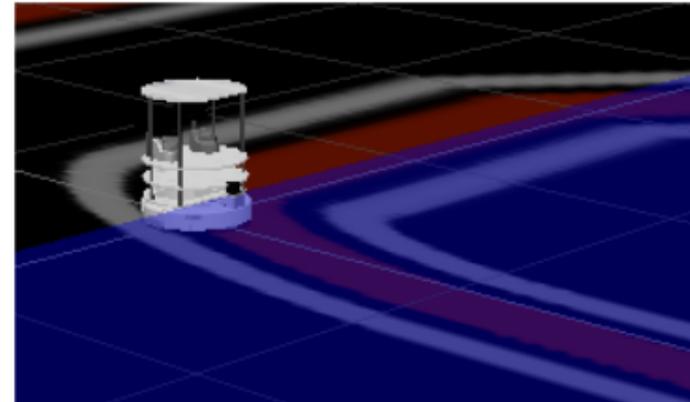
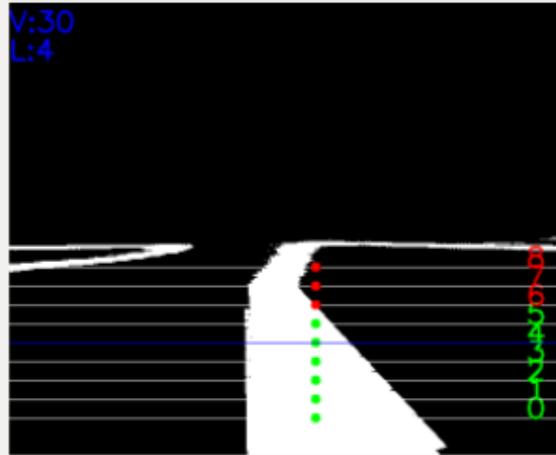
**ESCENA 3D GAZEBO**



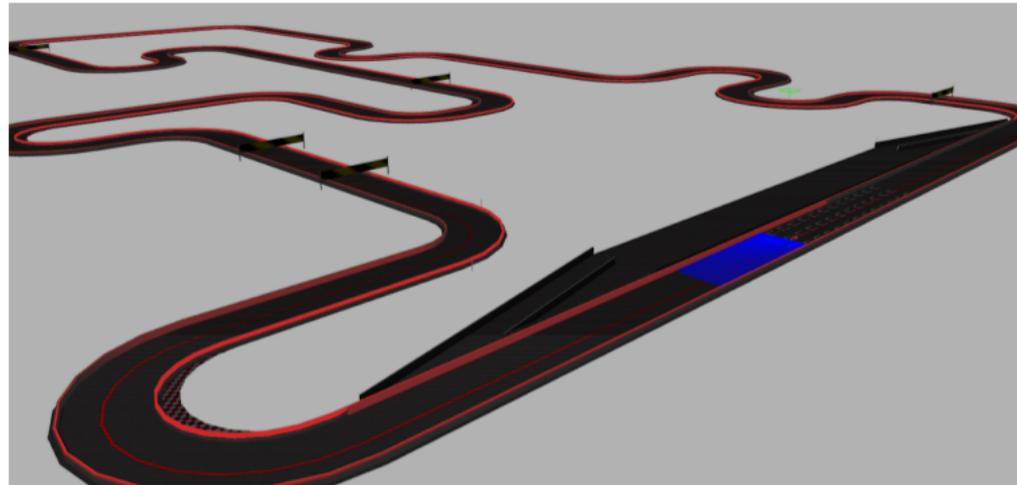
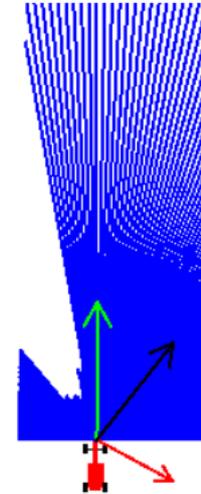
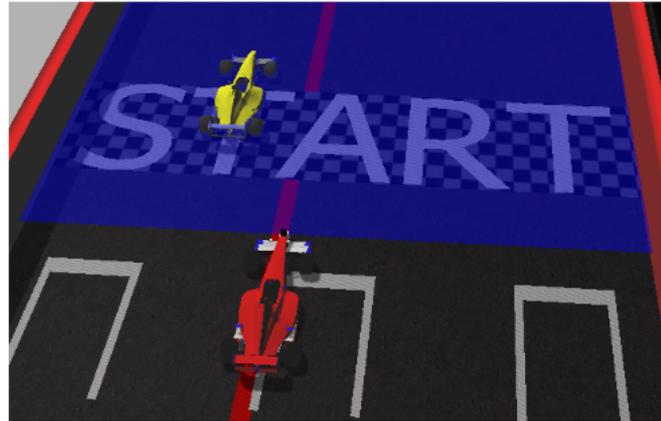
# Práctica: Control Visual. Sigue líneas



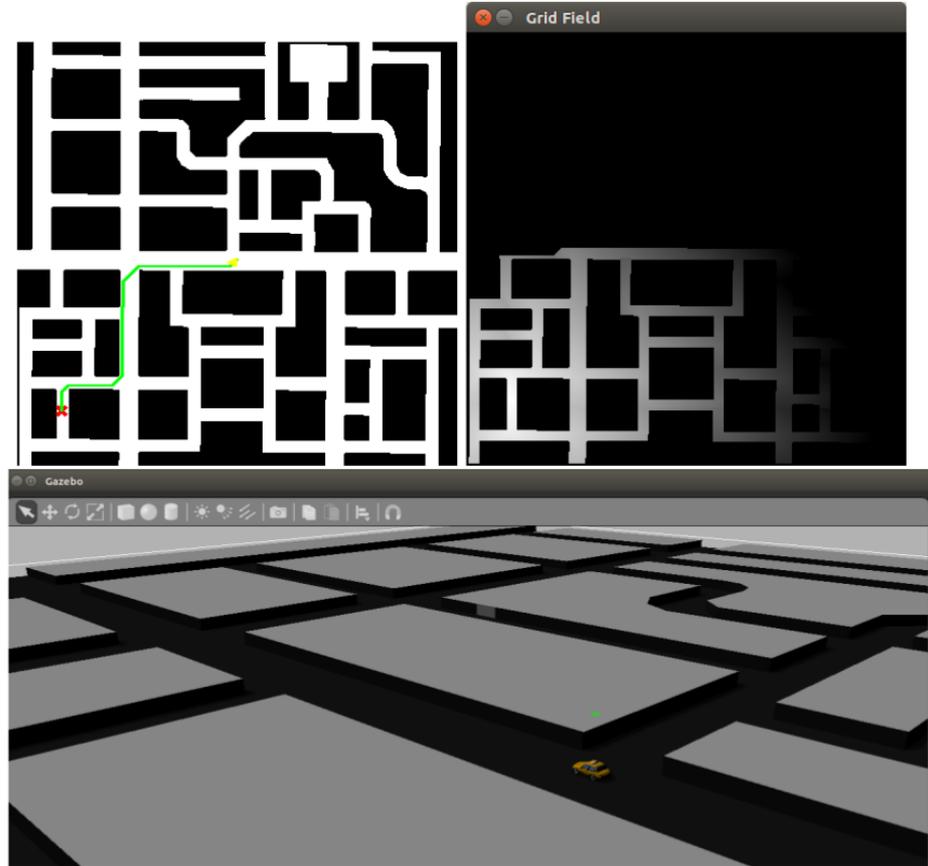
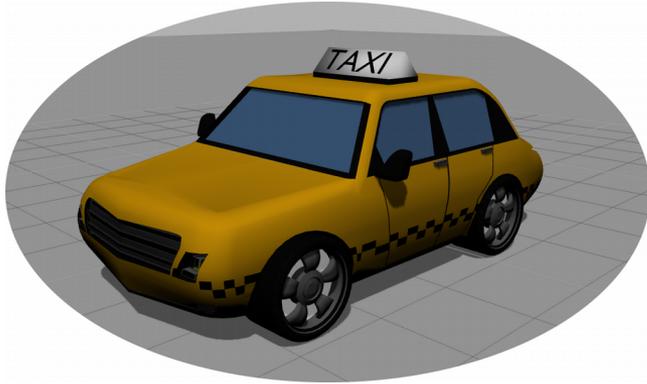
Input



**Práctica:**  
**Fórmula-1. Navegación local**

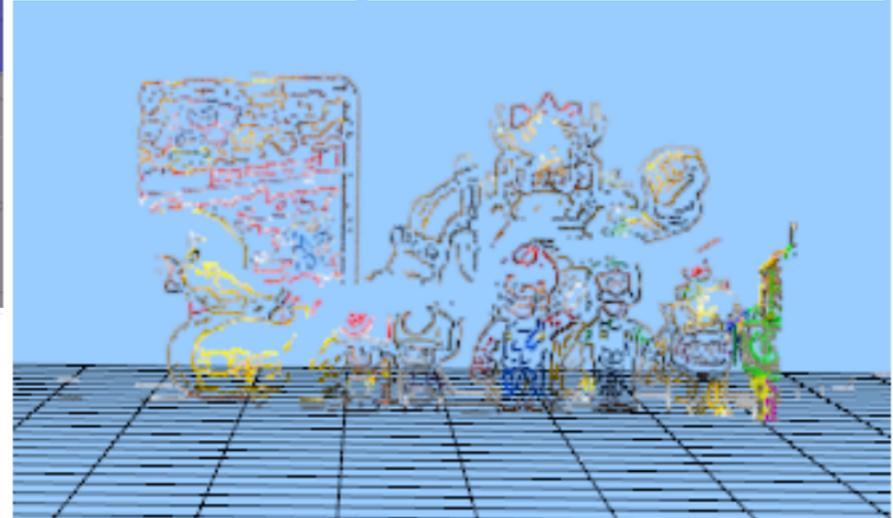
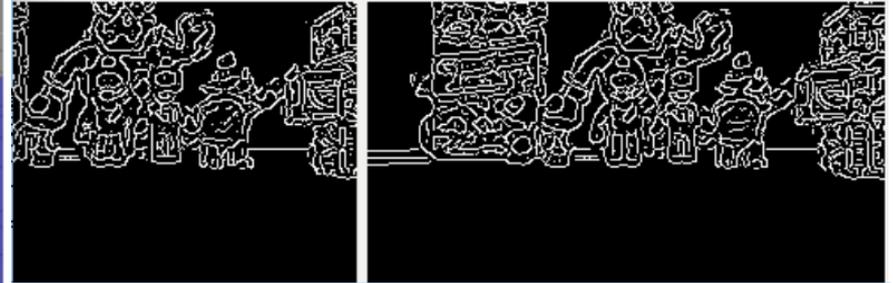
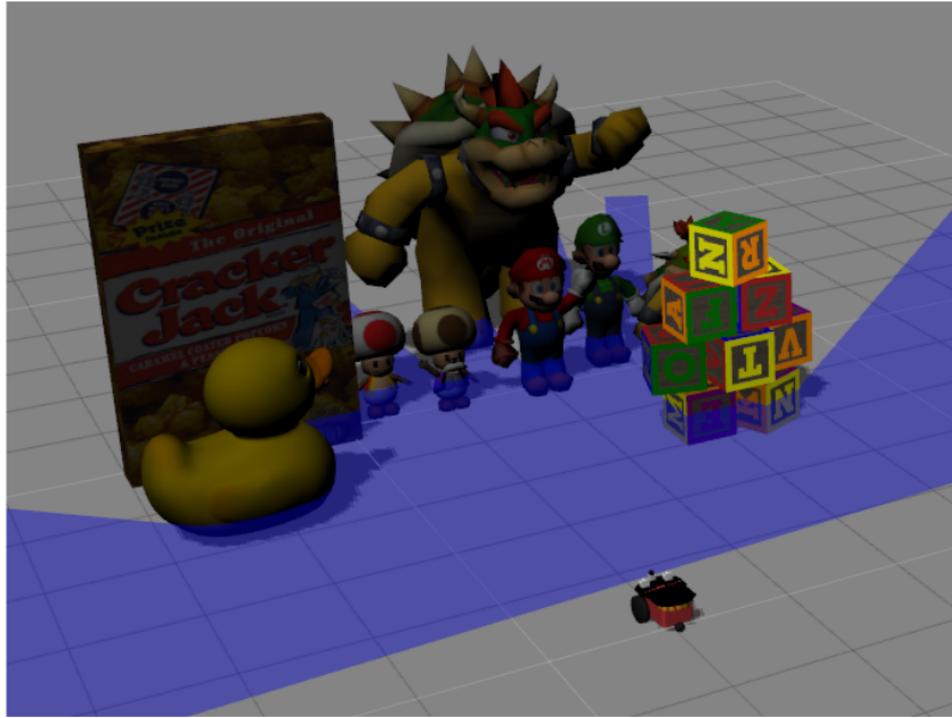


# Práctica: TeleTaxi. Navegación global



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# Práctica: Reconstrucción 3D



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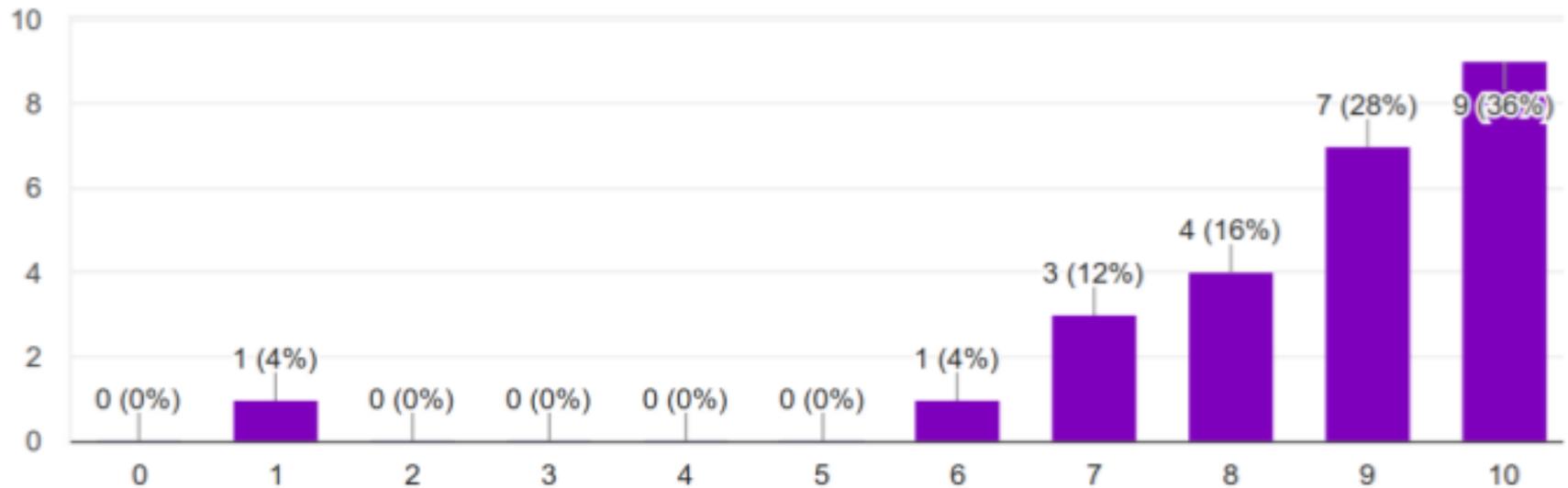
# Resultados



## ¿Te han gustado las prácticas con JdeRobot?



25 responses



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*Futuro*



 ROS



**Deloitte gmv**  
INNOVATING SOLUTIONS

**U** Universidad Rey Juan Carlos  
**ETSIT**

**JdeRobot**

**FASE FINAL PROGRAMAROBOT 2017**

PARTICIPANTE	Q	MANGA 1	MANGA 2	TOTAL
David Robert	Q0	103,89	101,06	204,97
Omar Walid	Q0	73,15	79,44	152,59
Aitor Perez	Q0	36,96	37,63	74,79
David Robert	Q1	66,87		66,87
Omar Walid	Q1			0,00
Aitor Perez	Q1			0,00

0:00:32.85  
Score: 36.29 secs

 online