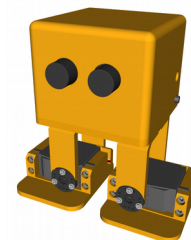




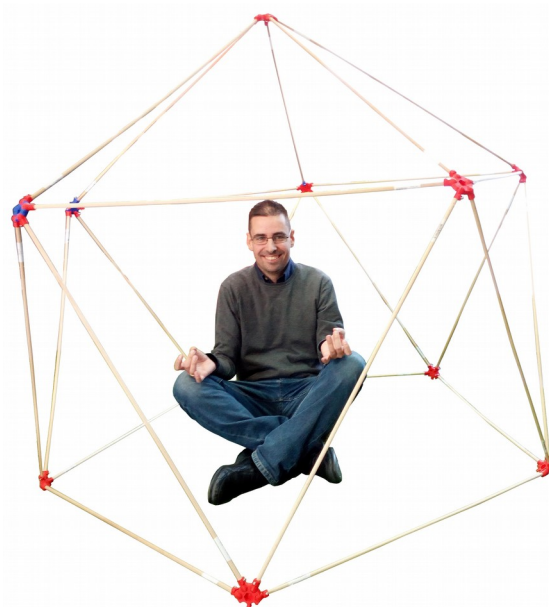
# Entorno JdeRobot-Academy para la docencia práctica de robótica





Universidad  
Rey Juan Carlos

# Grupo de Robótica



**Gsync**



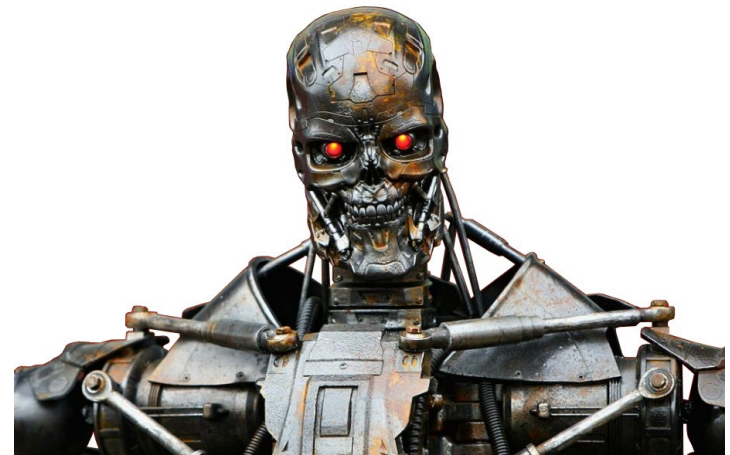
**JdeRobot**

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



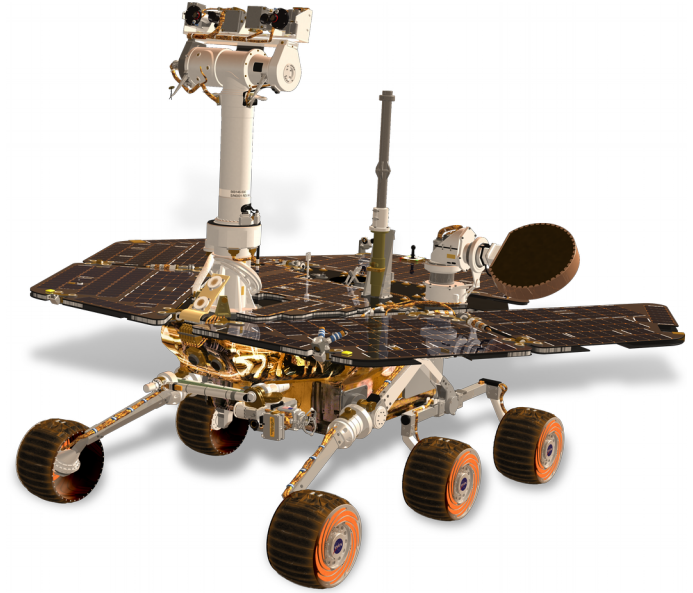
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*Robots en  
Ciencia-ficción*



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# *Robótica en la vida real*



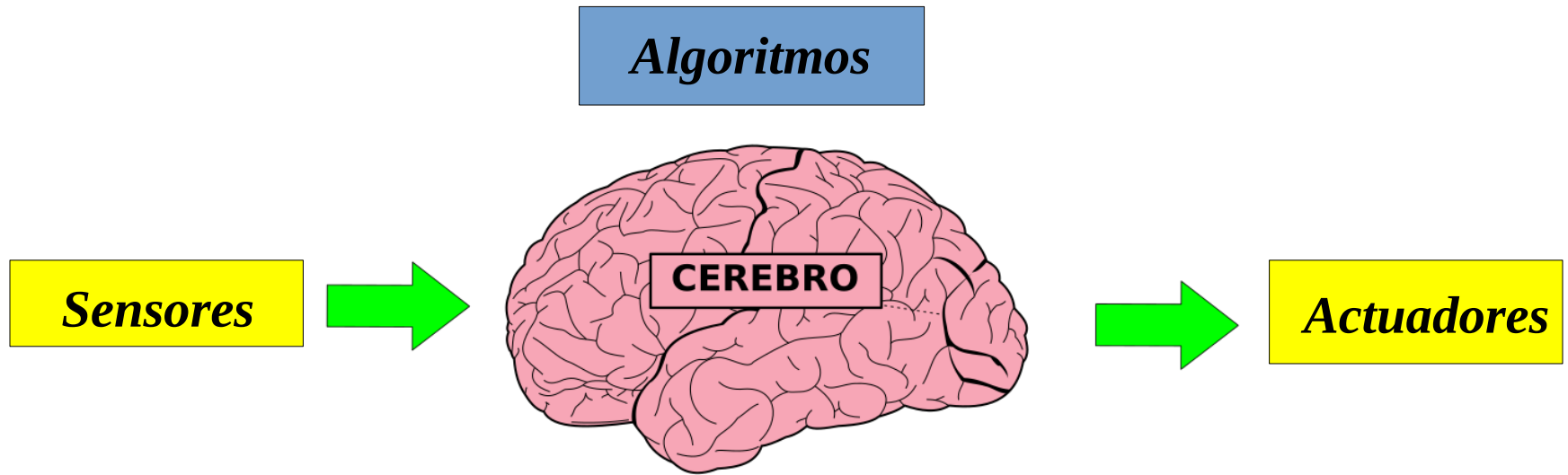
U online

# *Robots móviles: campo prometedor*

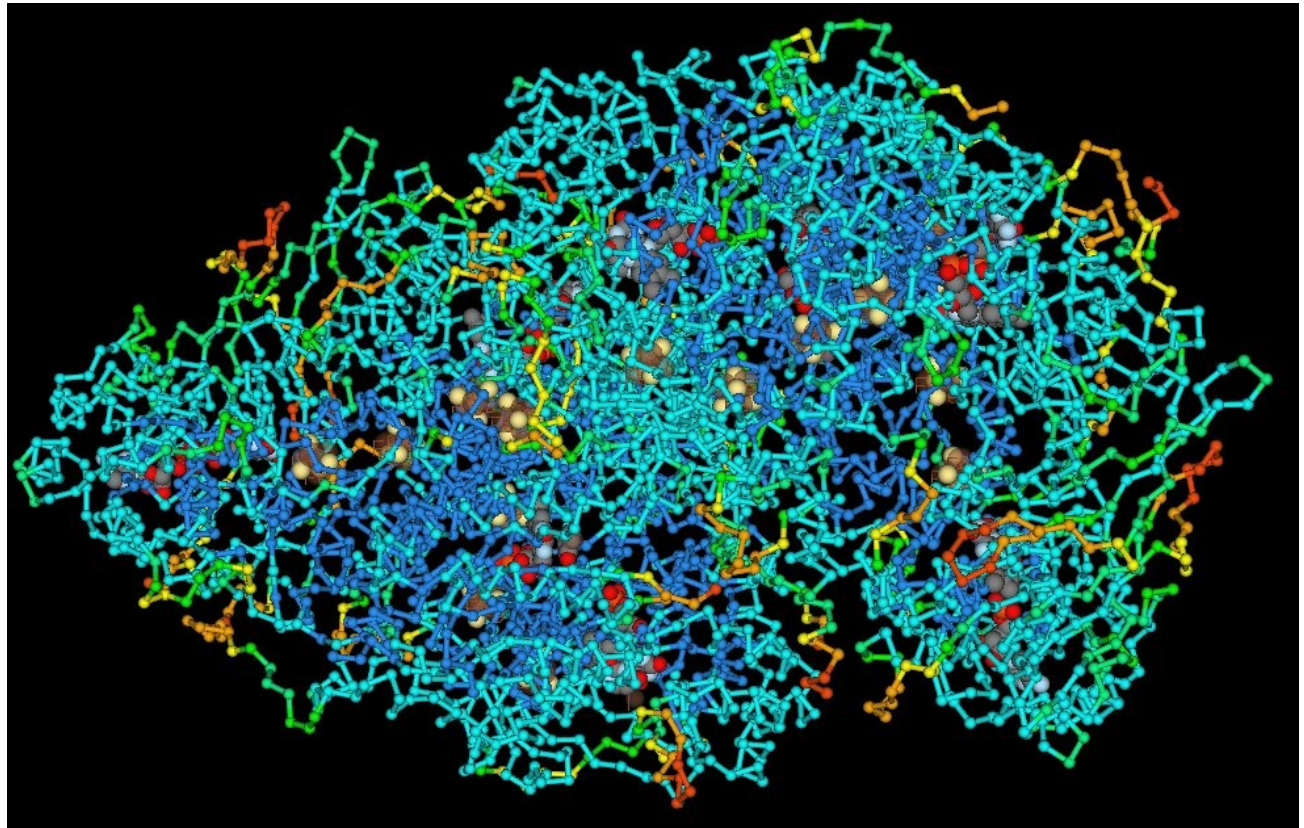


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# Énfasis en los algoritmos

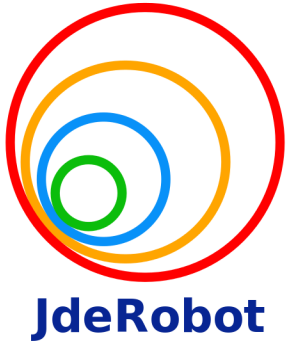


*Principios de diseño:  
Dosificación de la complejidad*



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# Solución: Aplicación académica para cada práctica



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

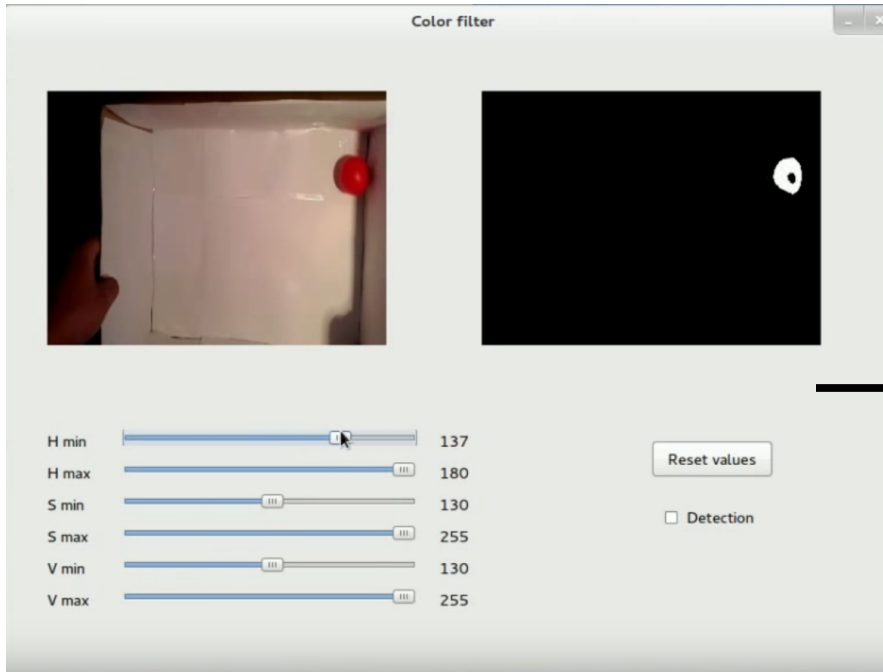
- Input image:** Shows a camera view with overlaid sensor data. Text below it reads: Distance: -14, Speed: 1.13326618378, Angle: -1.29103851318, YawDPS: -0.127734268188.
- Filter output:** Shows a processed image of the road surface.
- Control Panel:** Features sliders for H min (90), H max (97), S min (0), S max (50), V min (45), and V max (80). It includes 'Reset values' and 'Untrack' buttons.
- Altitude Control:** A vertical slider for altitude, with 'Land', 'Play', and 'Stop' buttons. A 'Rotation' knob is also present.
- Sensors:** A cluster of gauges including a semi-circle gauge, a compass, a tachometer (0-6), and a battery level indicator (0-100%). Text below the gauges shows: Pitch: -0.10, Roll: 0.86, Yaw: -167.98.
- Linear Velocity:** Three gauges for Linear X (m/s), Linear Y (m/s), and Linear Z (m/s), each ranging from 0 to 8.
- Camera:** A main camera view showing a road perspective, with a 'Change Camera' button below it.
- Windows:** A panel with checkboxes for 'Camera', 'Sensors', and 'Color filter', all of which are checked.



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

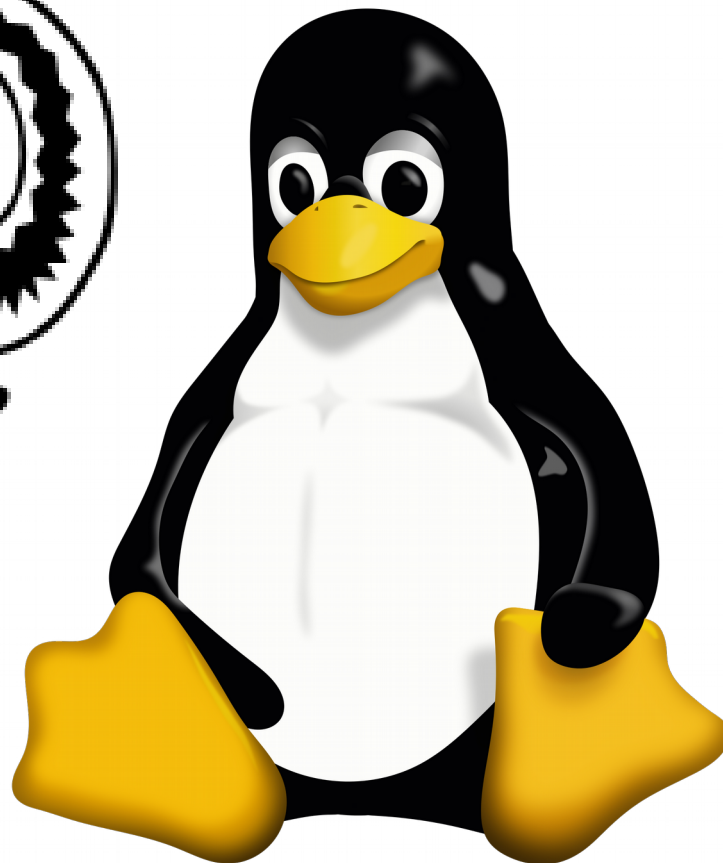


```
31
32 //Opencv
33 #include <opencv2/core/core.hpp>
34 #include <opencv2/imgproc/imgproc.hpp>
35 #include <opencv2/highgui/highgui.hpp>
36
37 #include <string.h>
38 #include <sstream>
39 #include <cstdio>
40 #include <csignal>
41 #include <unistd.h>
42 #include <cstdlib>
43 #include <list>
44
45 #include <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
```



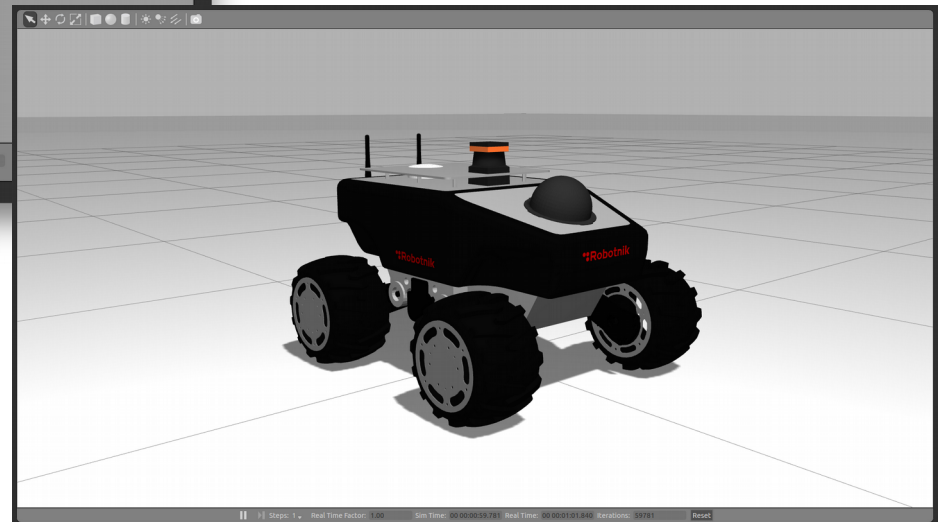
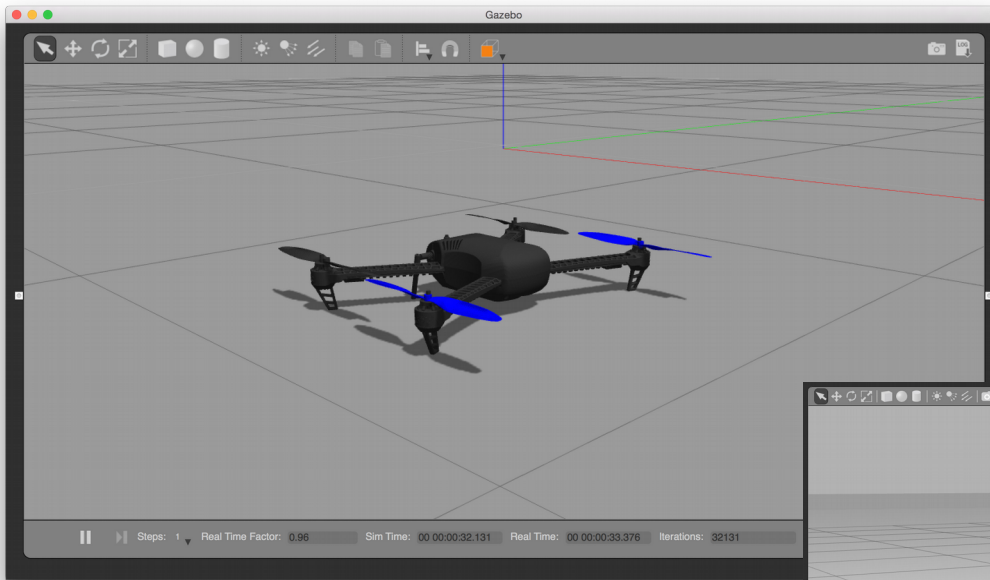
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*Software libre*



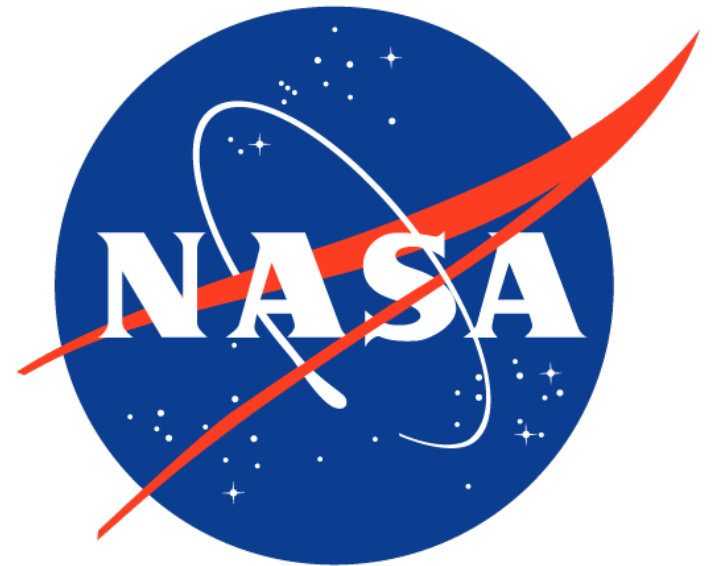
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# *Simulación: prácticas heterogéneas*



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*Lenguaje Python:  
Foco en el robot*



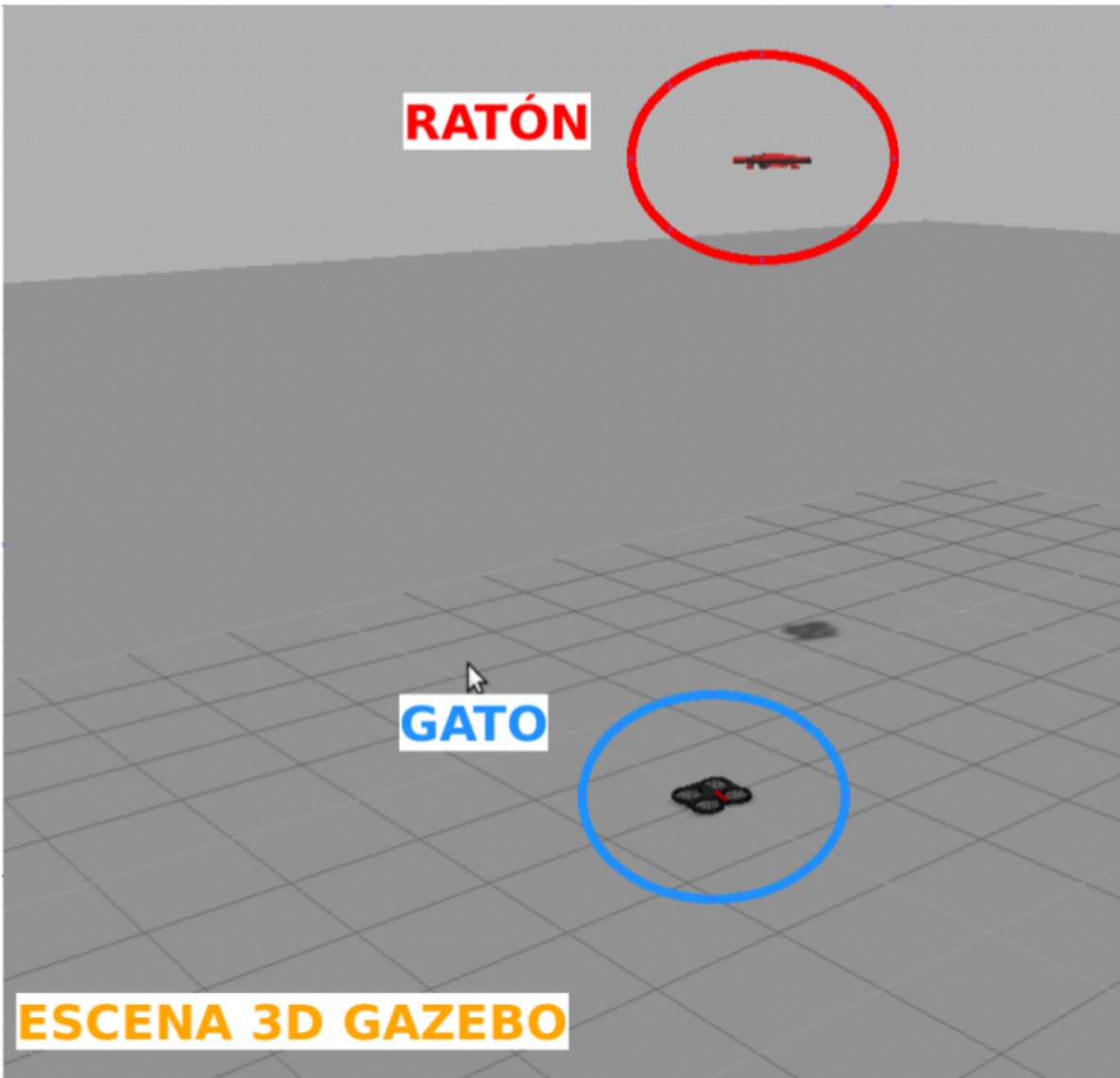
WU online

# *Gamificación: Prácticas como un juego*

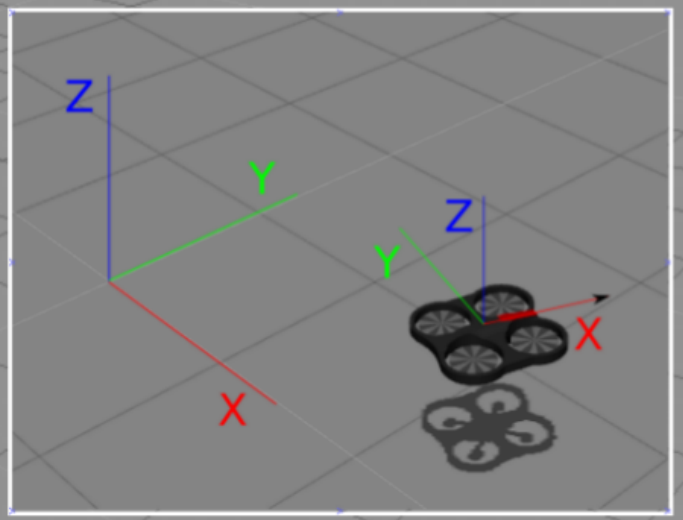
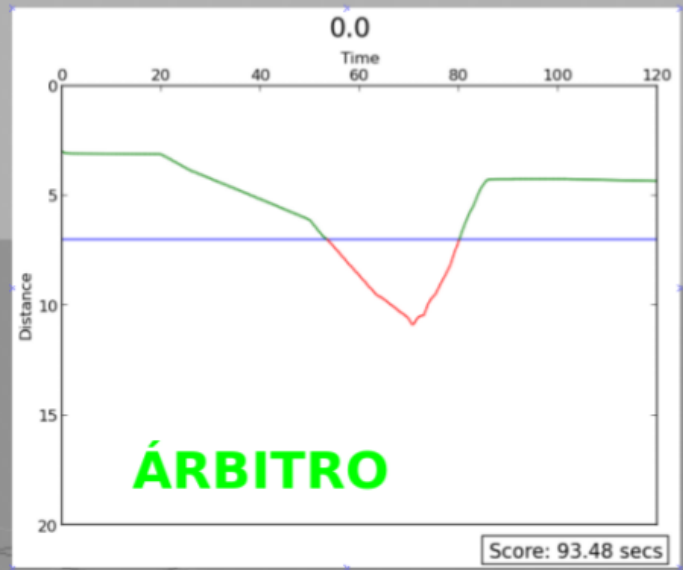


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# Práctica: Drones y persecución



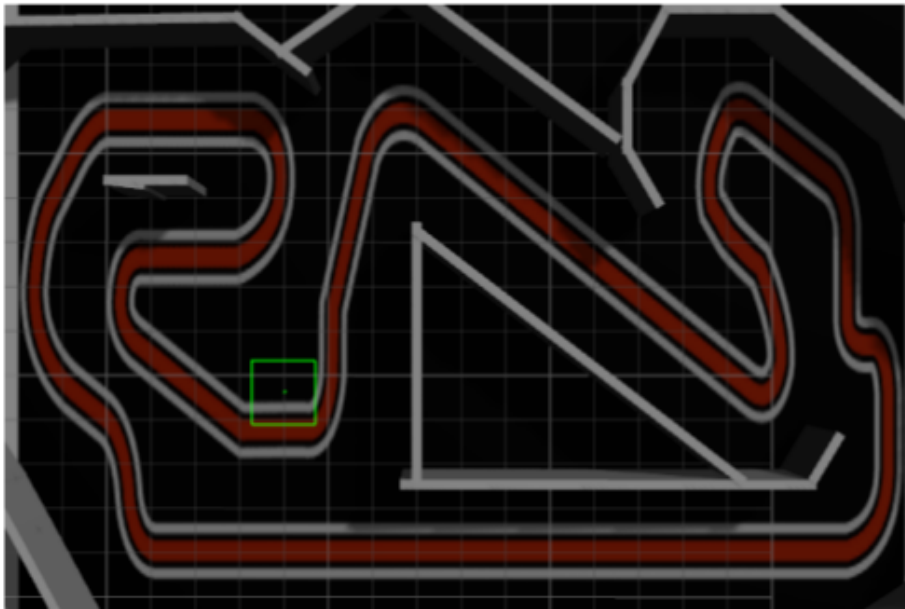
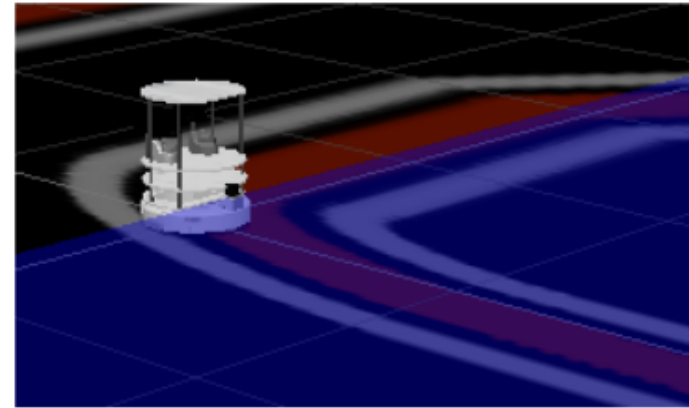
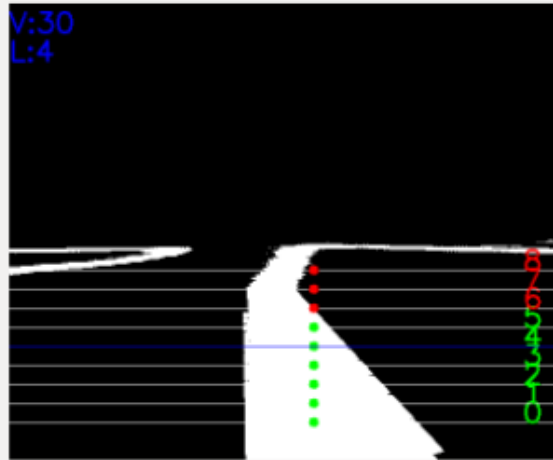
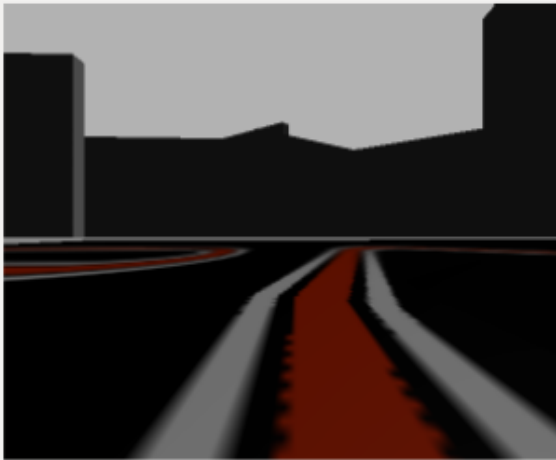
**ESCENA 3D GAZEBO**



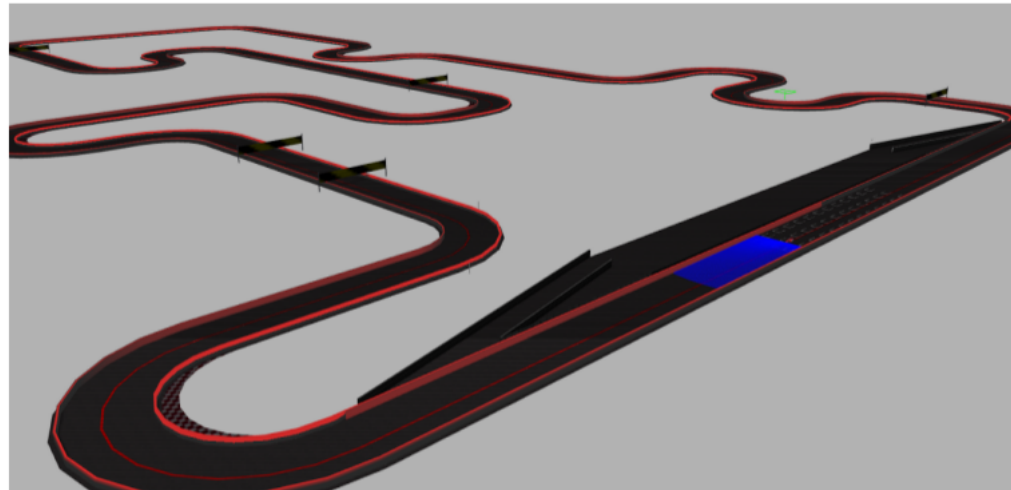
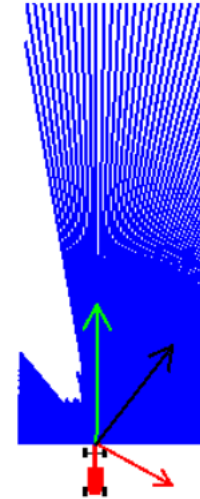
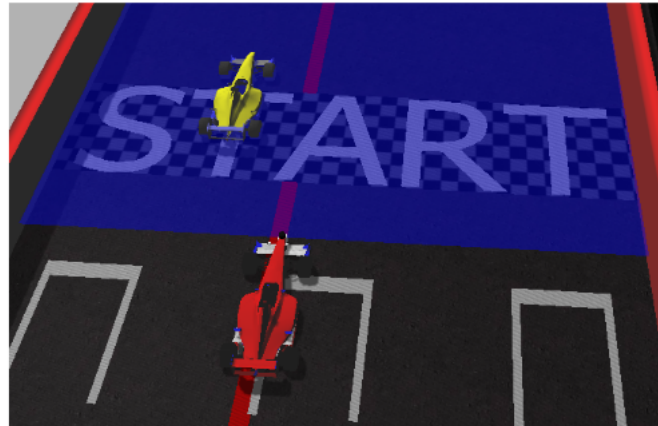
# Práctica: Control Visual. Sigue líneas



Input

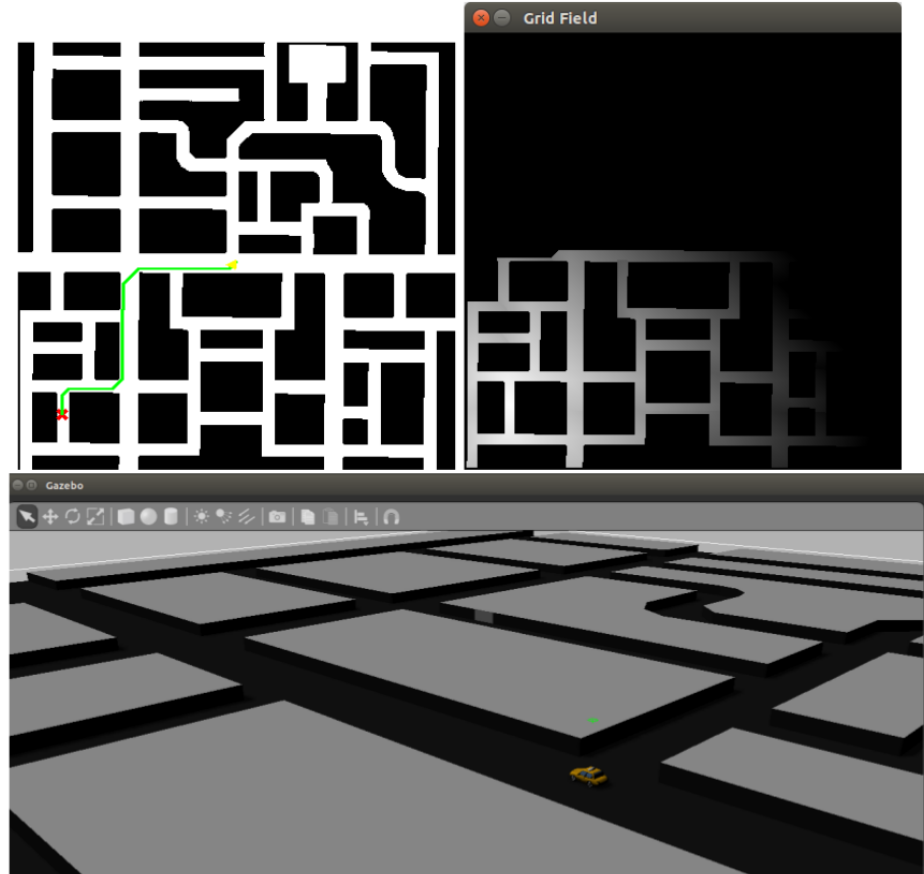
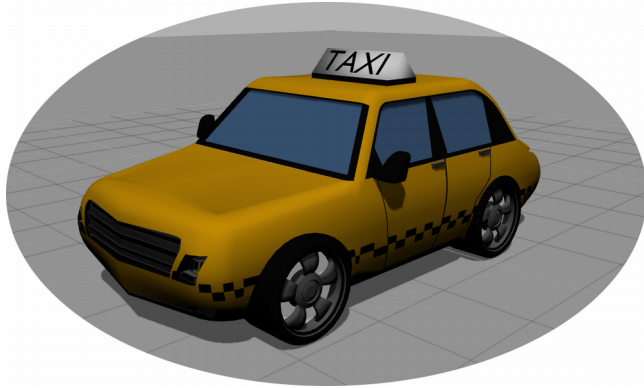


**Práctica:**  
**Fórmula-1. Navegación local**



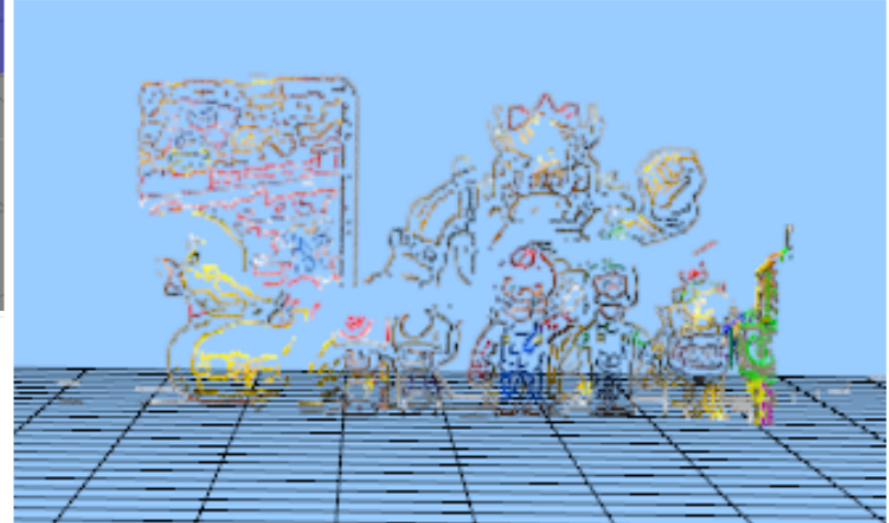
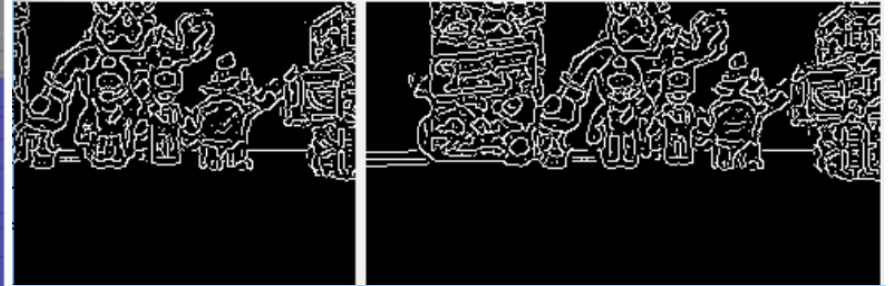
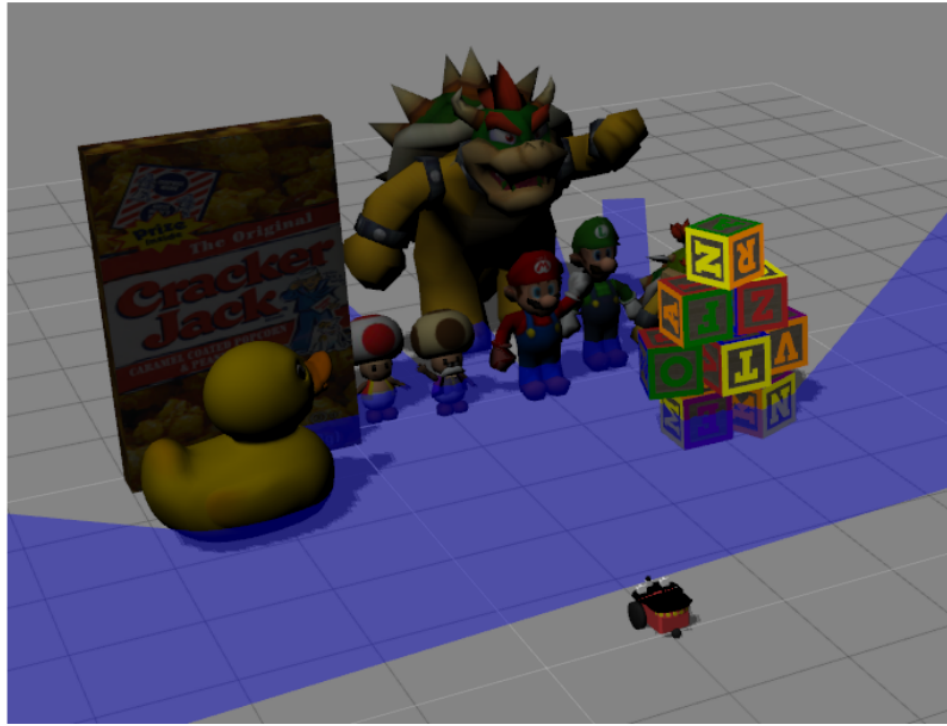


# Práctica: TeleTaxi. Navegación global



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# Práctica: Reconstrucción 3D



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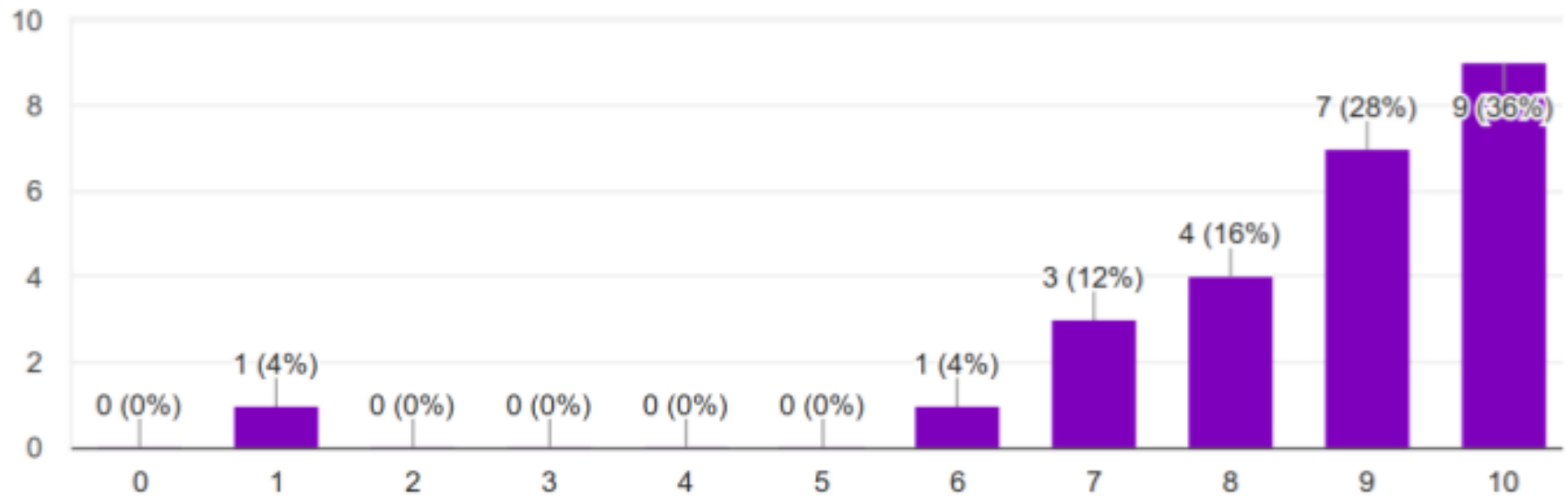
# Resultados



## ¿Te han gustado las prácticas con JdeRobot?



25 responses




U online

*Futuro*



 ROS



**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

  
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