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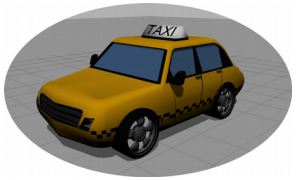
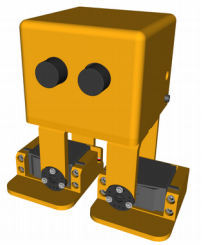
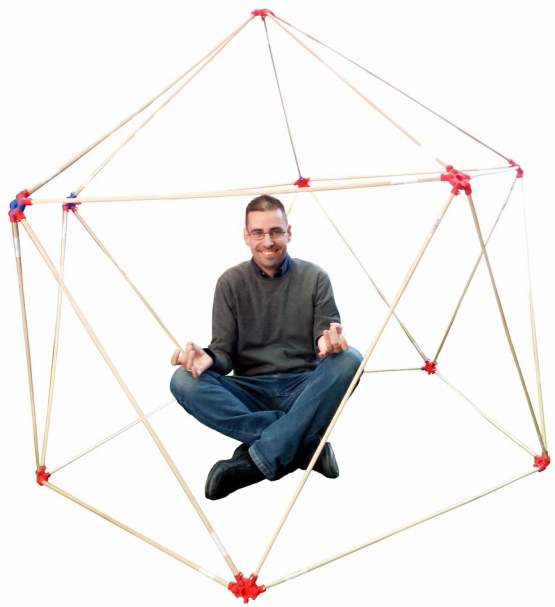
Entorno JdeRobot-Academy para la docencia práctica de robótica





Universidad Rey Juan Carlos

Grupo de Robótica

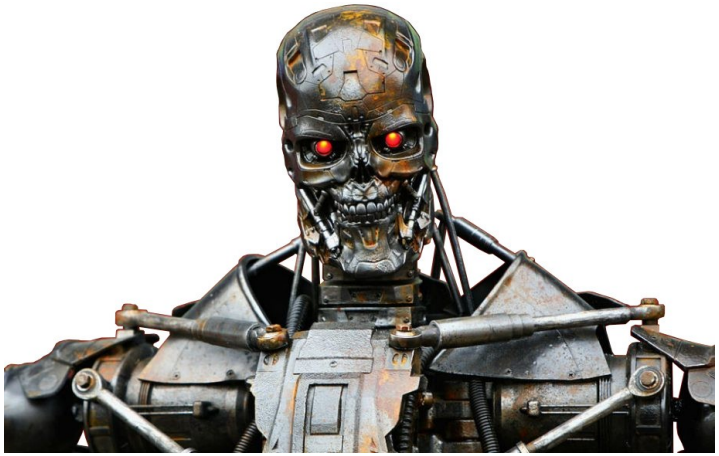


GSyC

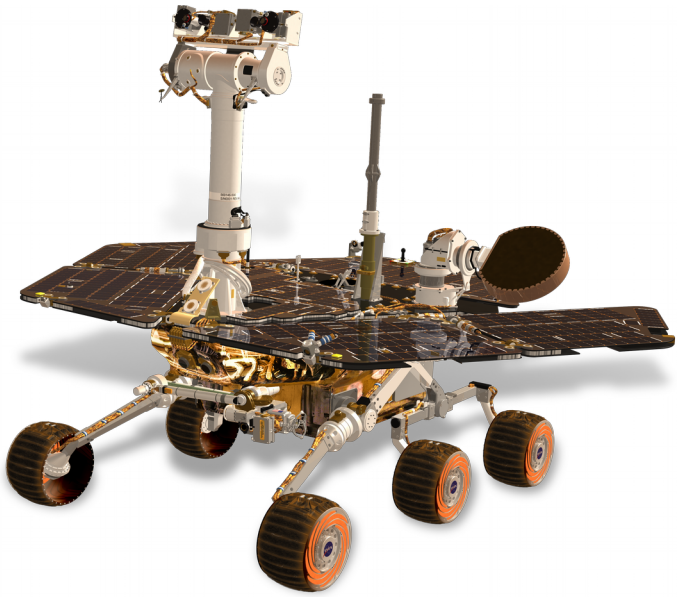
JdeRobot

Juan González Gómez
@Obijuan_cube

Robots en Ciencia-ficción

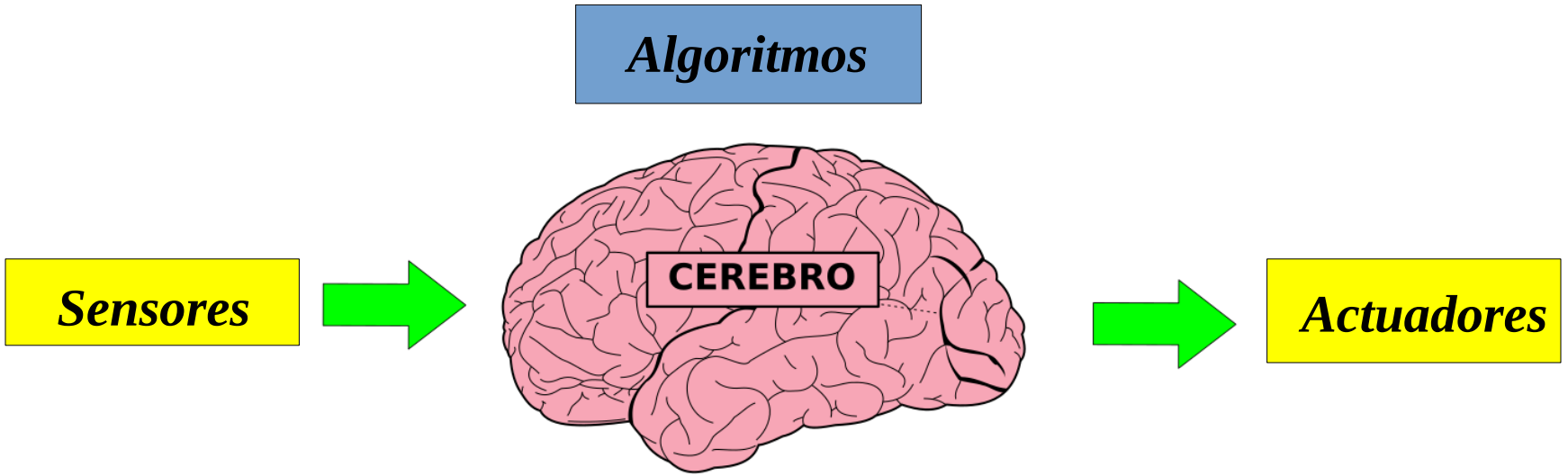


Robótica en la vida real

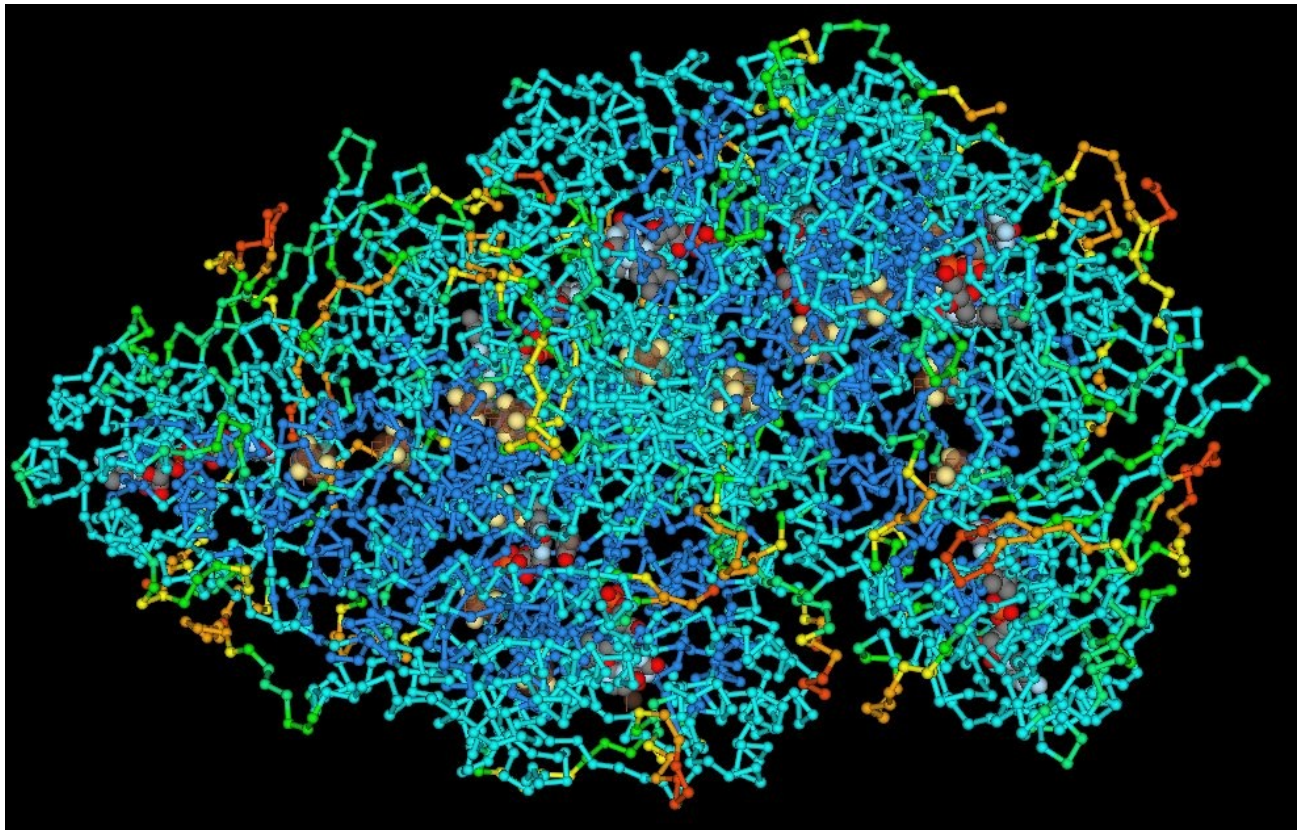


Robots móviles: campo prometedor

Énfasis en los algoritmos

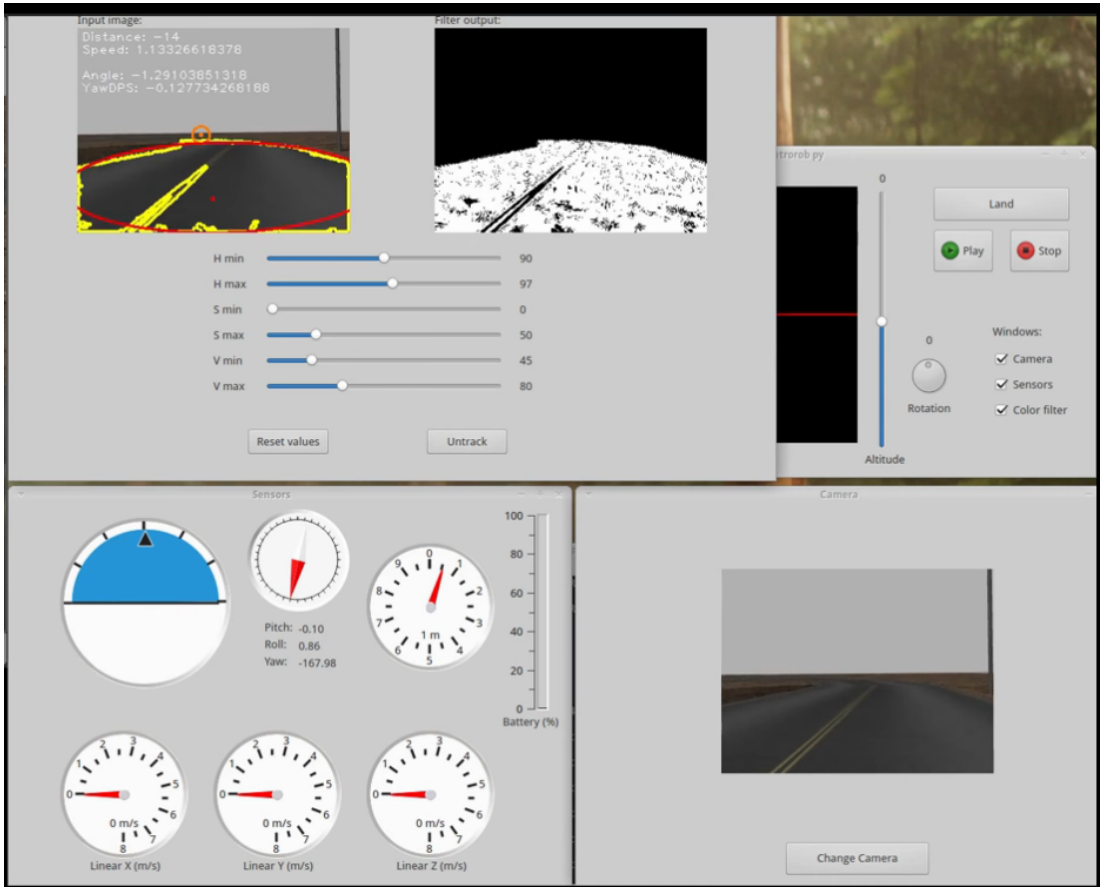


Principios de diseño:
Dosificación de la complejidad

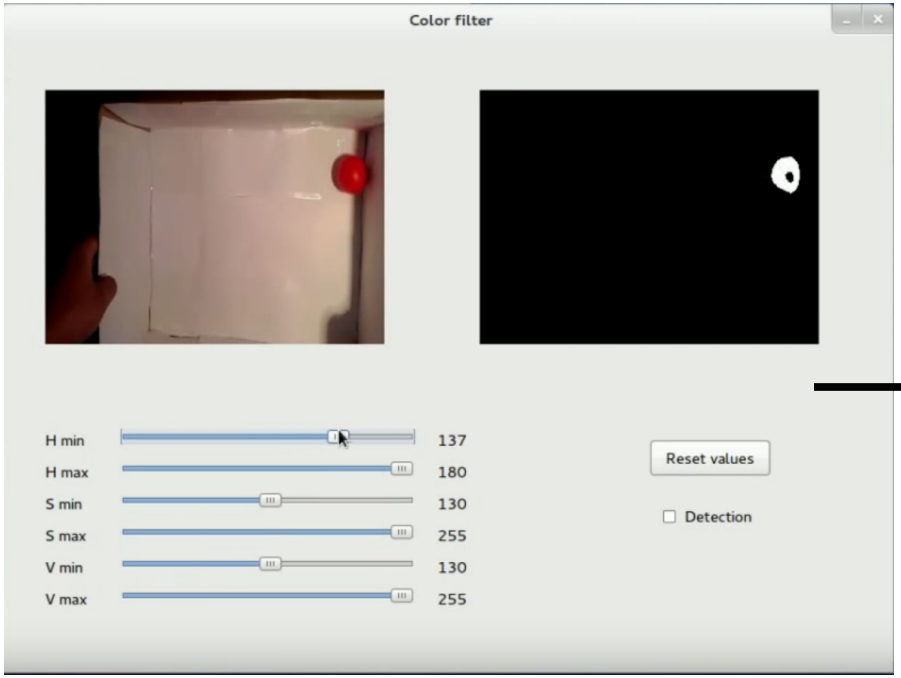


Solución: Aplicación académica para cada práctica

JdeRobot

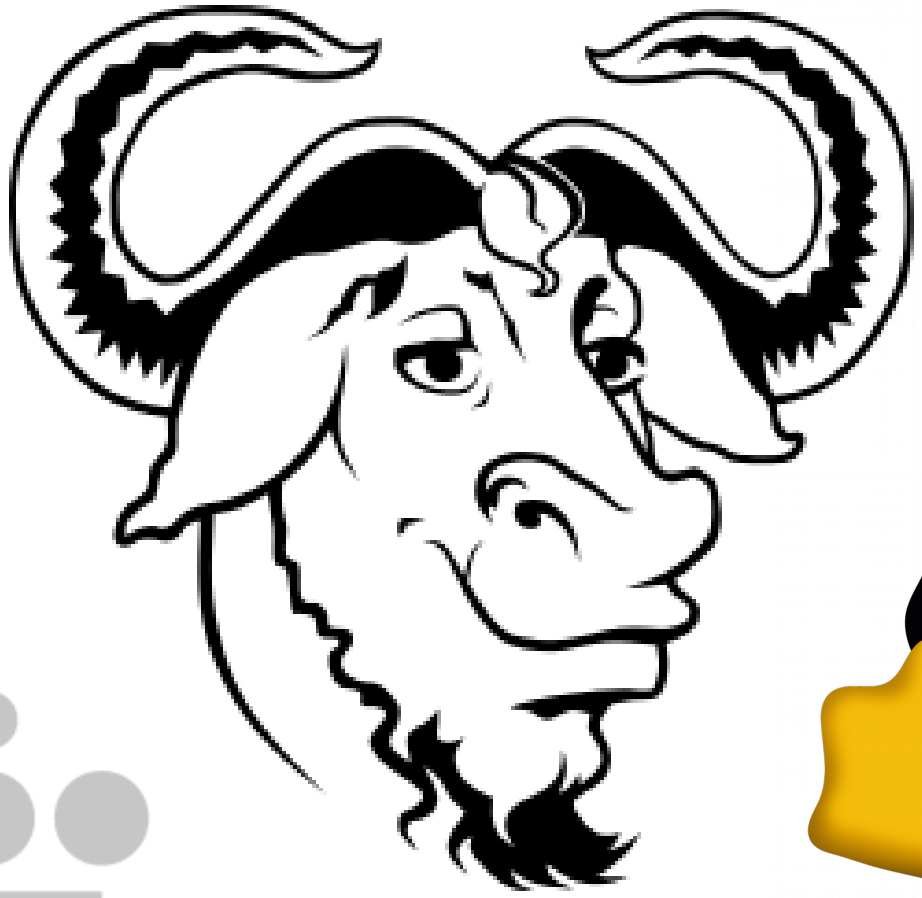


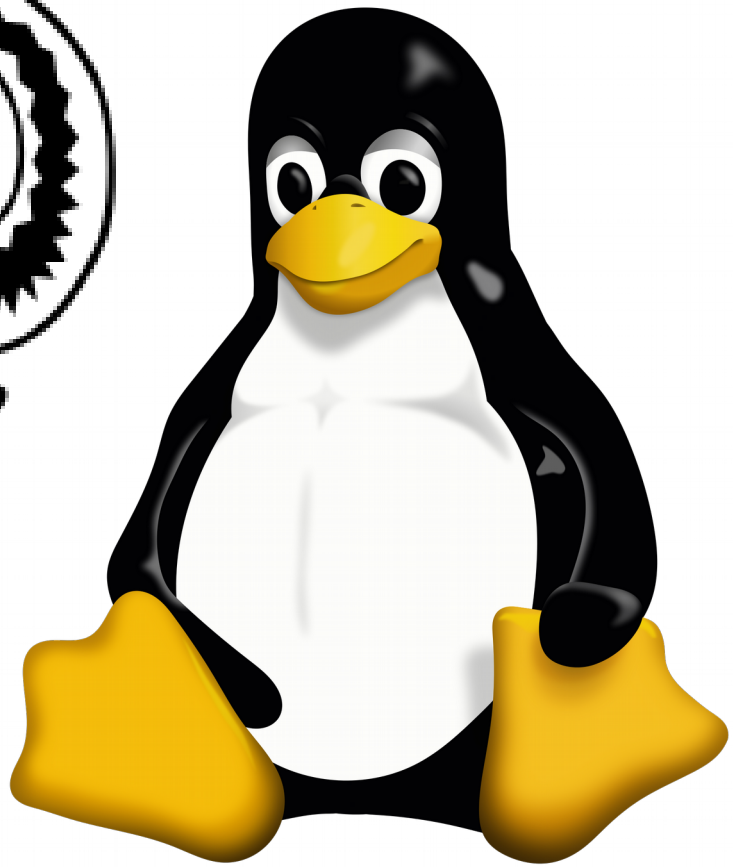
Niveles crecientes de complejidad (grado, máster, doctorado)



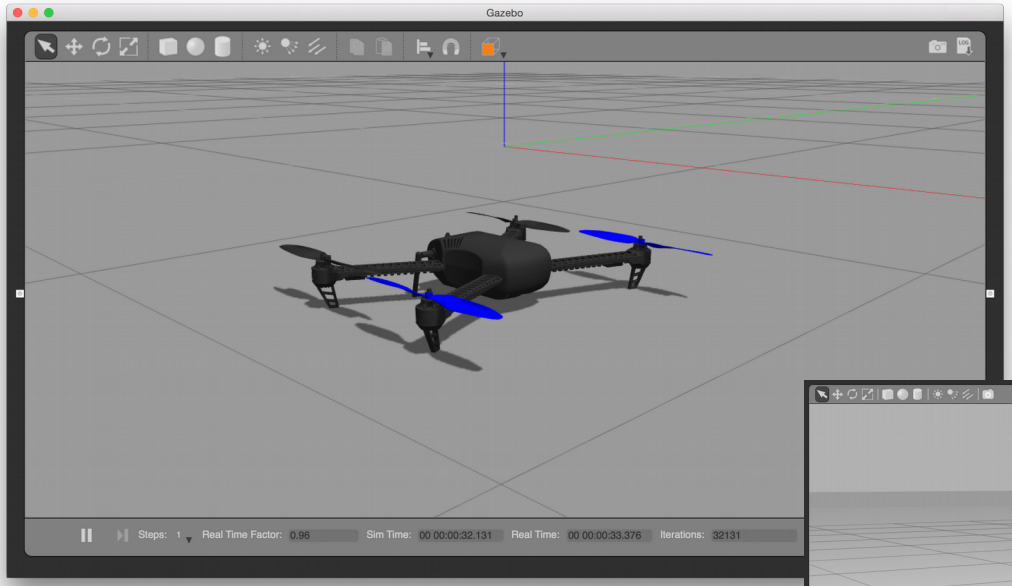

```
31
32  //Opencv
33  #include <opencv2/core/core.hpp>
34  #include <opencv2/imgproc/imgproc.hpp>
35  #include <opencv2/highgui/highgui.hpp>
36
37  #include <string.h>
38  #include <sstream>
39  #include <cstdio>
40  #include <csignal>
41  #include <unistd.h>
42  #include <cstdlib>
43  #include <list>
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 acording to colorspace
61      std::string fmtStr = prop->getPropertyWithDefault(prefix+"Format","YUY2");//default format YUY2
62      imageFmt = colorspaces::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      framerateD = prop->getPropertyAsIntWithDefault(prefix+"FramerateD",1);
76
77      std::cout << "URI: " << uri << std::endl;
78
79      if(uri.size()>3)
80        capture.open(uri);
81      else
```

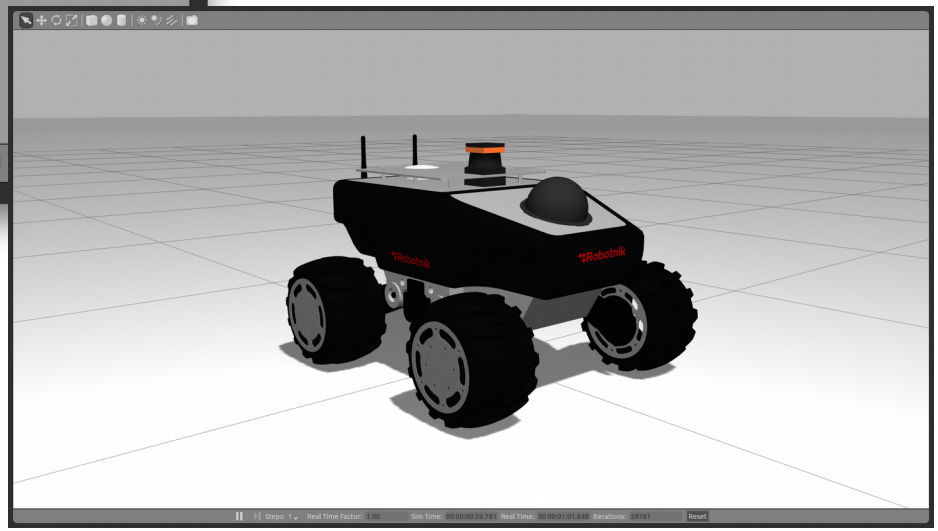
Software libre



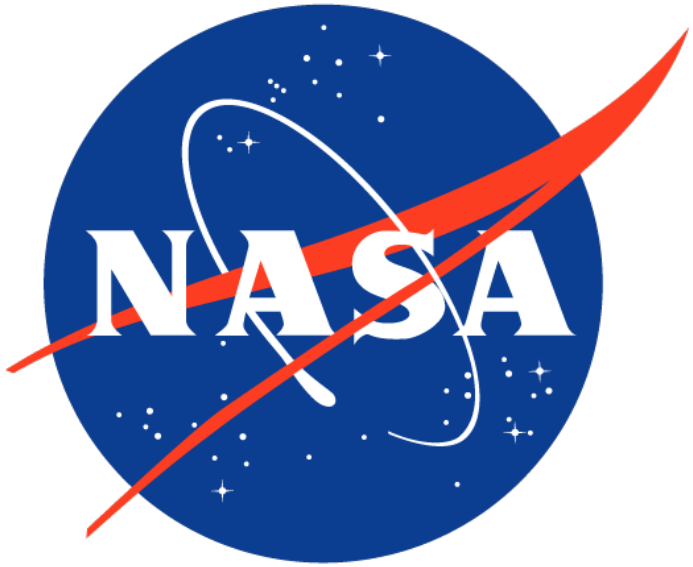


Simulación: prácticas heterogéneas



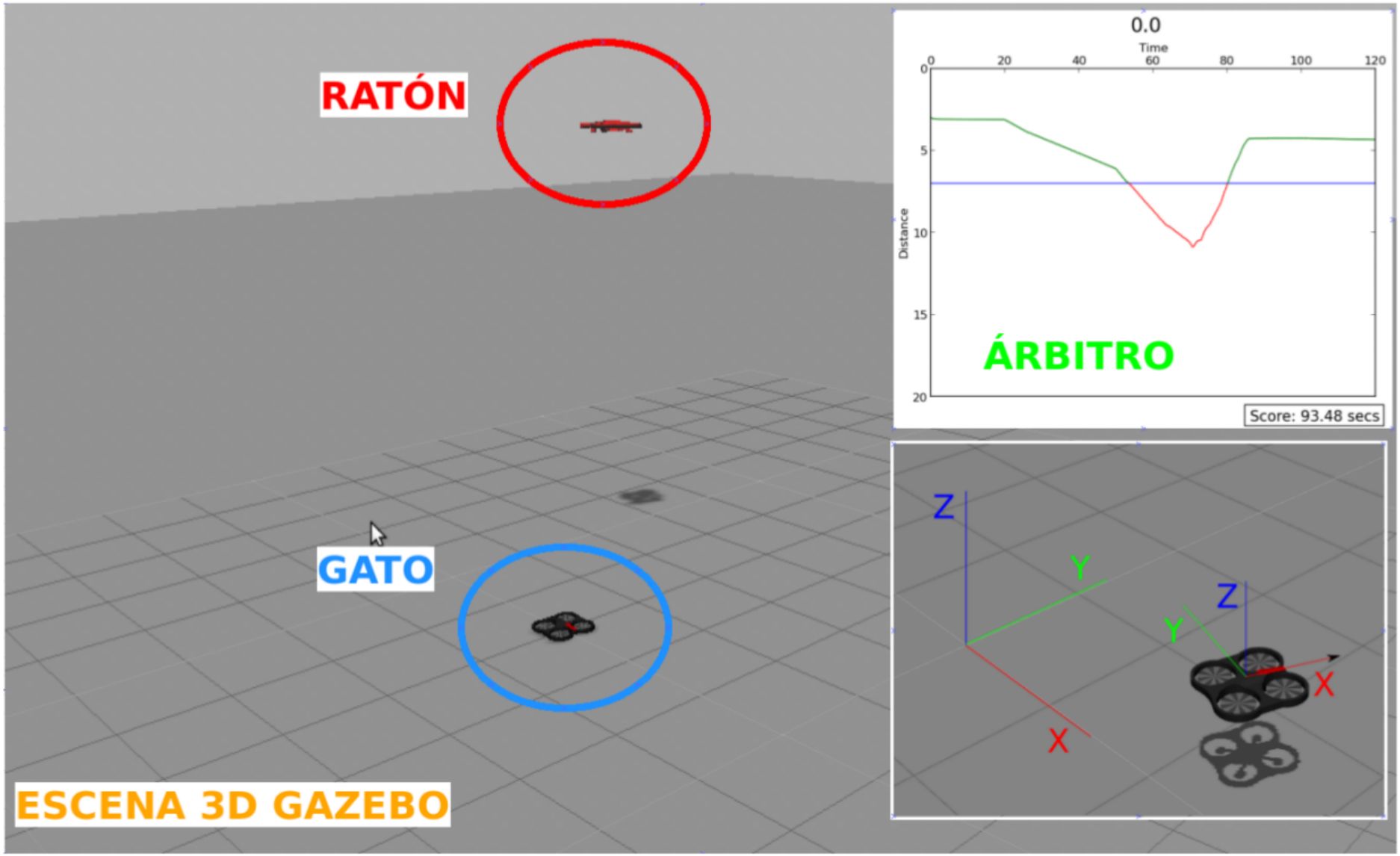


Lenguaje Python: Foco en el robot

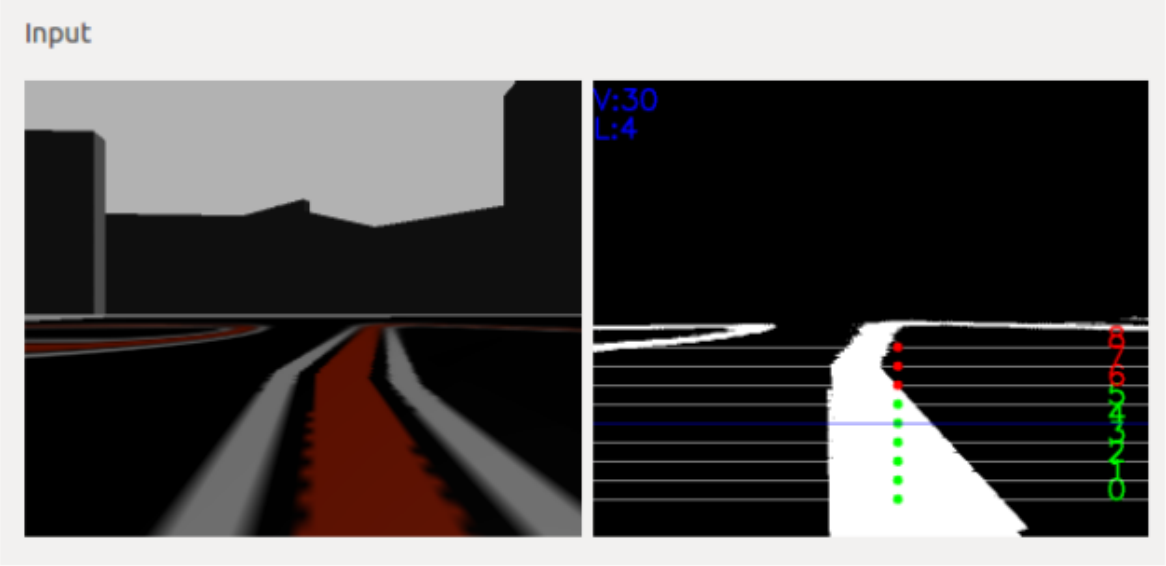


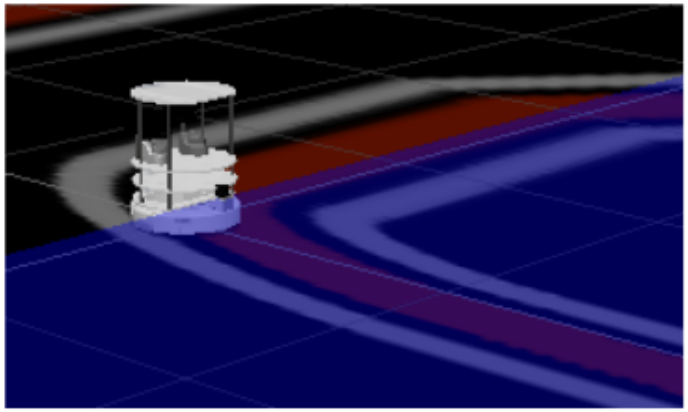
Gamificación:
Prácticas como un juego

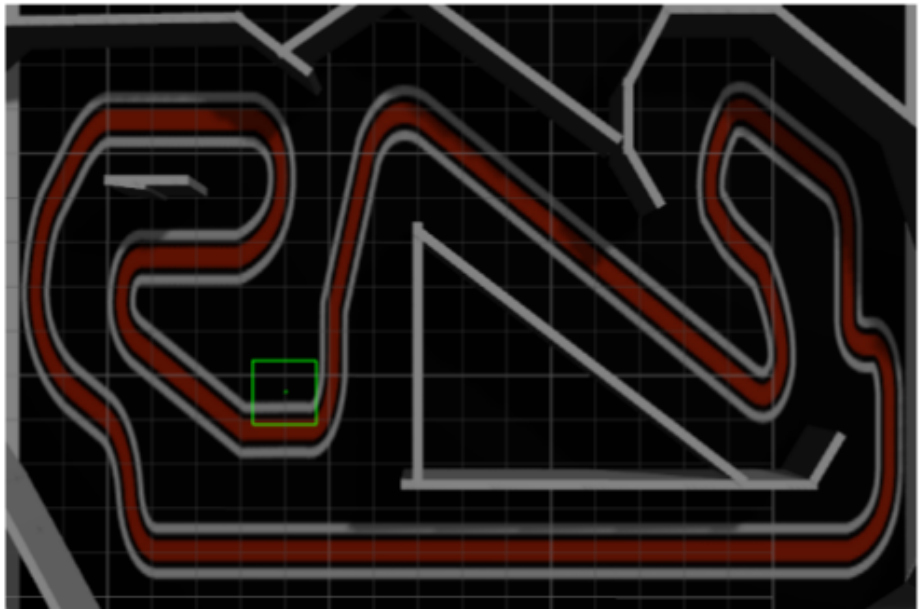
Práctica:
Drones y persecución



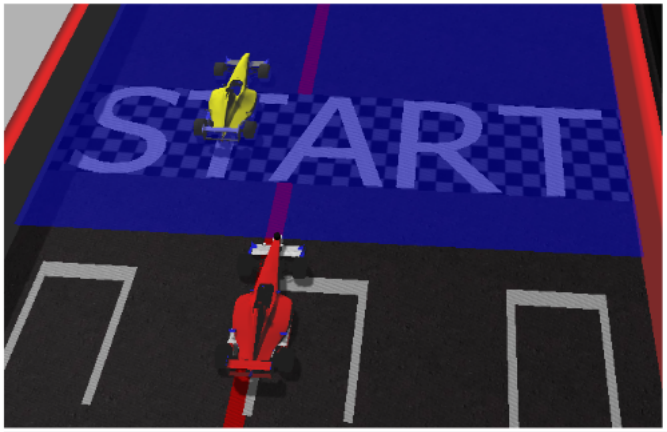
Práctica:
Control Visual. Sigue líneas

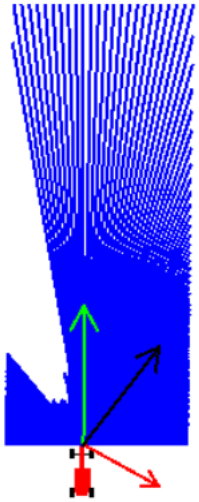


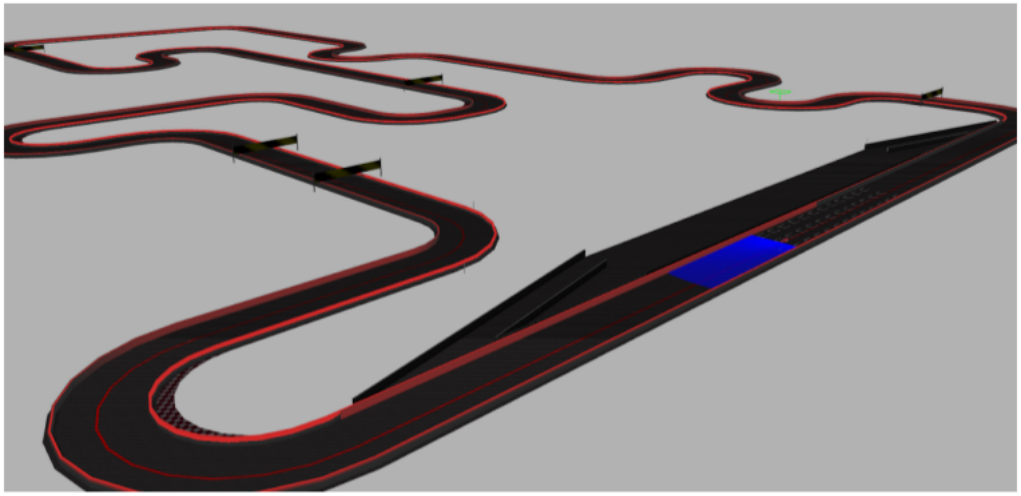




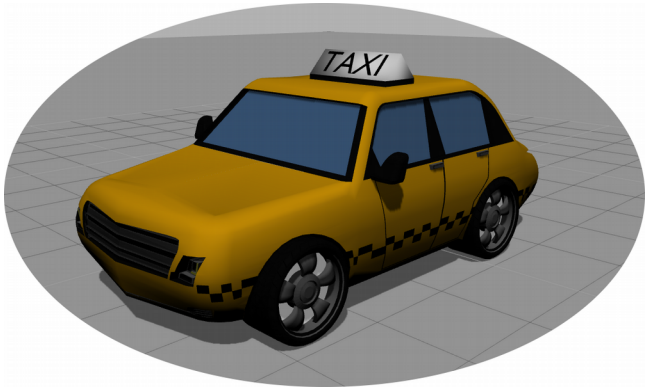
Práctica:
Fórmula-1. Navegación local

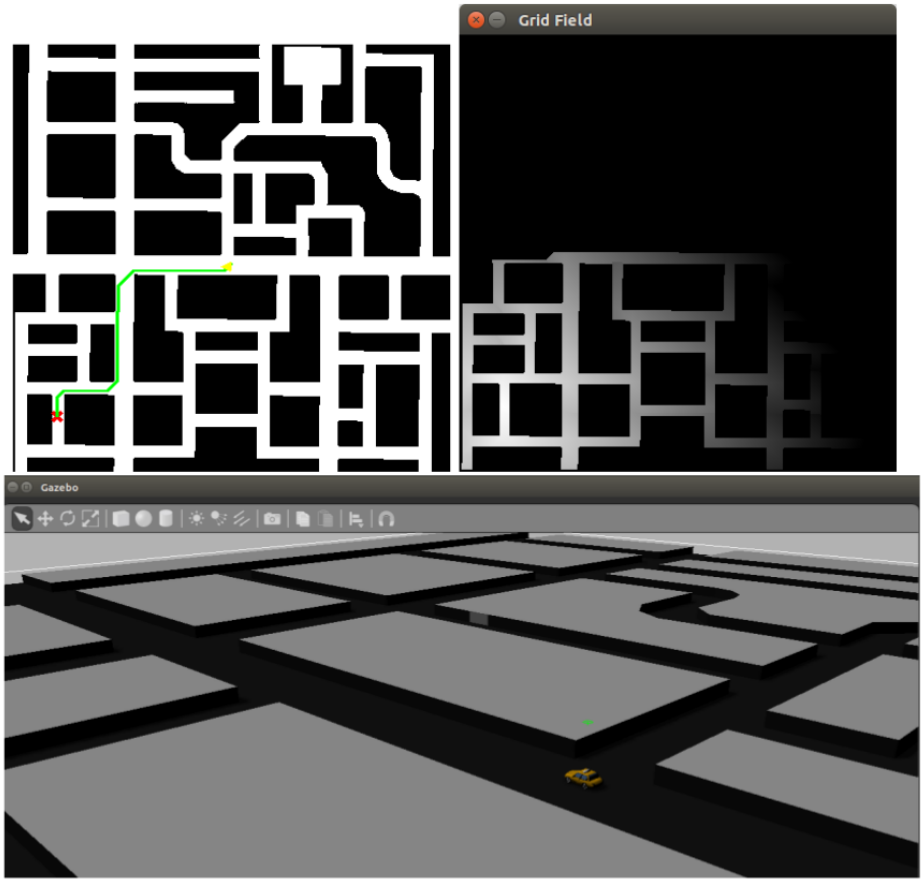




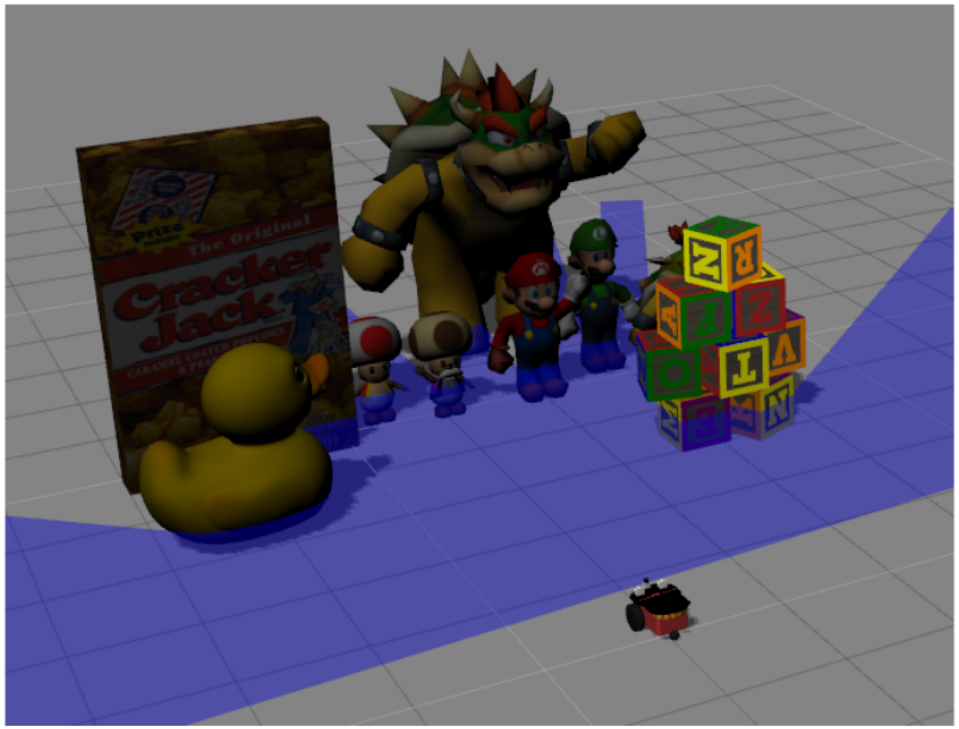


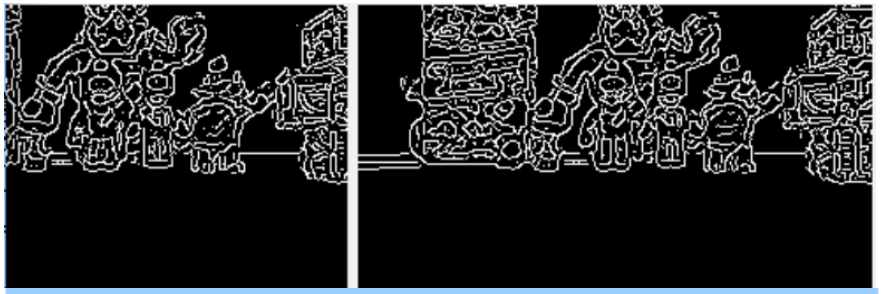
Práctica:
TeleTaxi. Navegación global

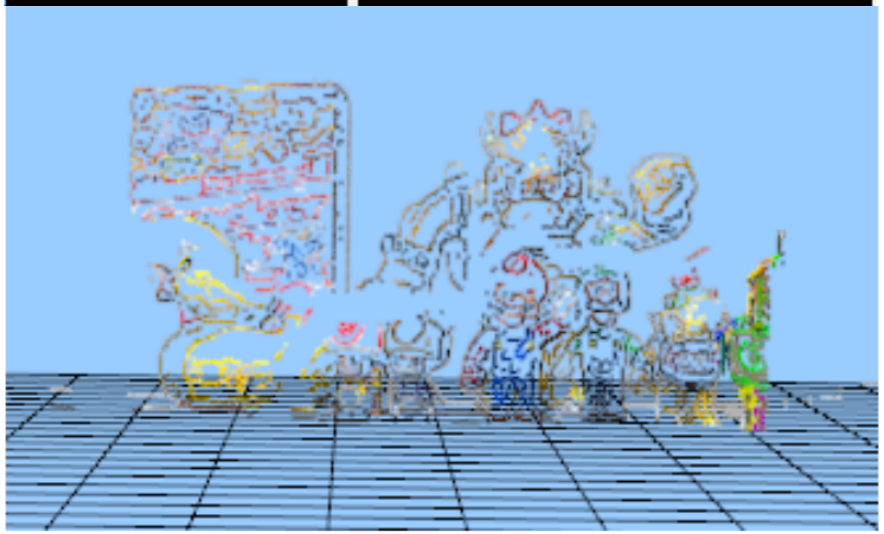




Práctica:
Reconstrucción 3D



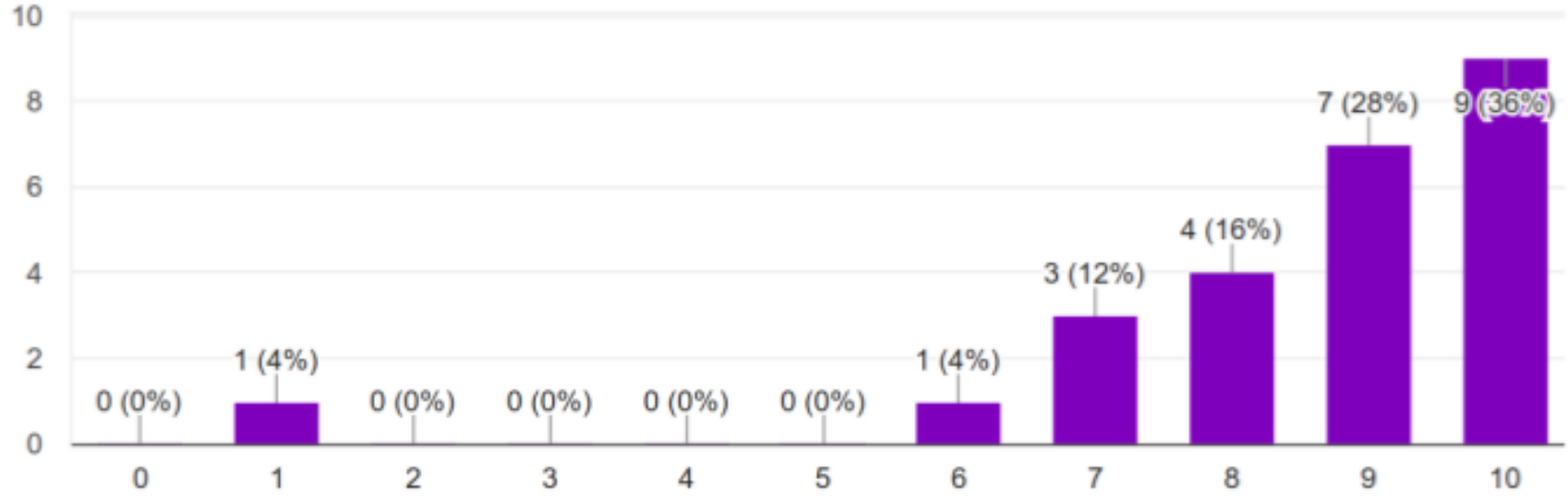




Resultados

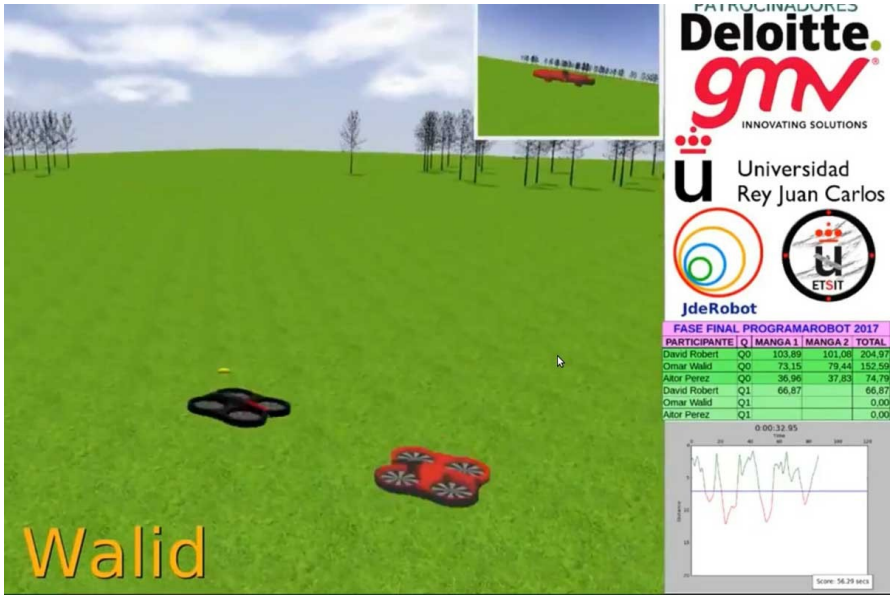
¿Te han gustado las prácticas con JdeRobot?

25 responses



Futuro

ROS



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