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The real deal

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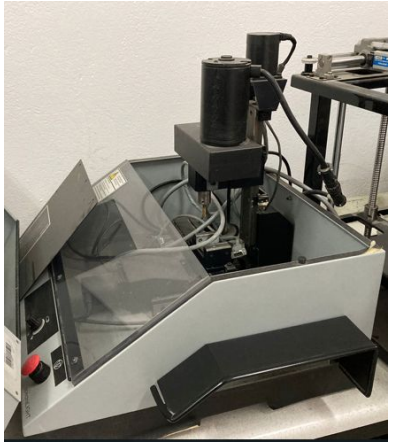
MECHATRONICS DESIGN

CNC

We have CNC machines that either do not have a controller, or controller is out of date and unusable.

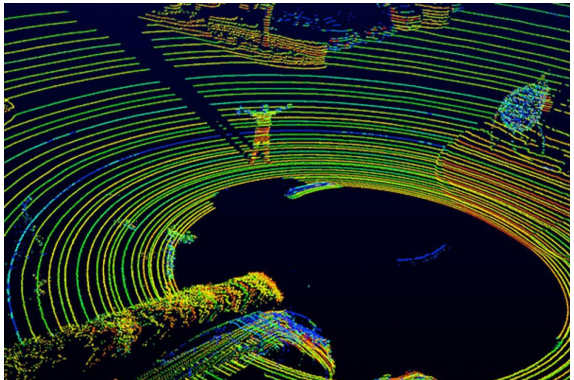
Objective is to come up with a generic controller for these, and get them to work.

One lathe, one mill should be working at the end.



4x4 & 6x6 RC Car revision

Make this a ROS compatible research platform



Mini Robotların Tatlı Dünyası

Self charging mini vehicles living in a simple ROS compatible world with an overhead camera tracking every move they make and they will have simulated sensors.

Webots or a similar integration is possible.

Should encourage image processing, search and planning

Air Hockey

Design and manufacture a ROS compatible air hockey table

But not an ordinary one:

A robot arm will play

And the game will be a bit more than just shooting towards a fixed goal!

Marble Run

Remotely accessible / programmable game

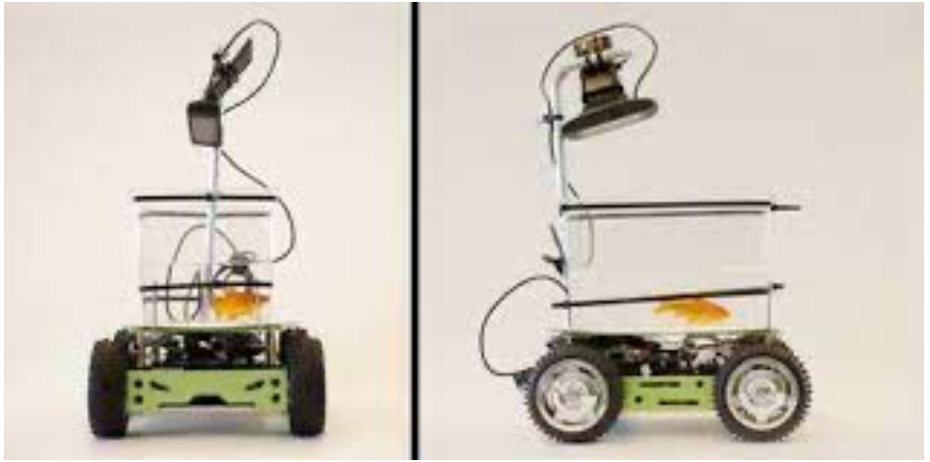
Should be self-sustained: no human interaction

Ball catcher and releaser should be 2 different players

There should be creative active parts on the way down for both players

ALTERNATIVE ARCADE IDEAS ARE WELCOME

Fish has a wish: on wheels



Our new pet on wheels

Should navigate without hitting obstacles, yet guided by the fish

Splash free, fish-friendly ride
Fish-guided self-charging

Aquarium temp. tracked

Personal development programme: Automated feeding to encourage learning etc

Levitating Eyes/Head

Cute / simple yet **intriguing** robot face design responding to humans in the environment

Wow factor needed

Arthur C. Clarke: “Any sufficiently advanced technology is indistinguishable from magic”

Cute and Curious Robot Head at Tip of Robot Arm

Cute / simple yet **curious** robot head explores its environment

A bit more on the academic side

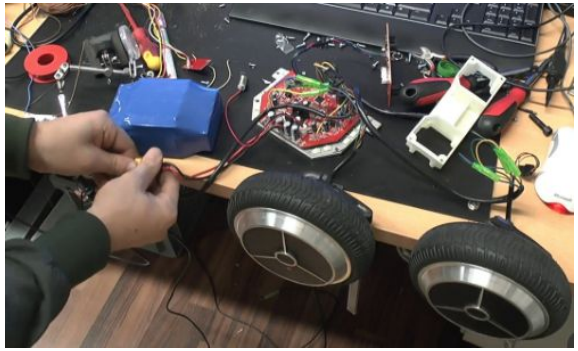
Will involve image processing and potential a lot of math and deep learning along with mechatronics and manufacturing

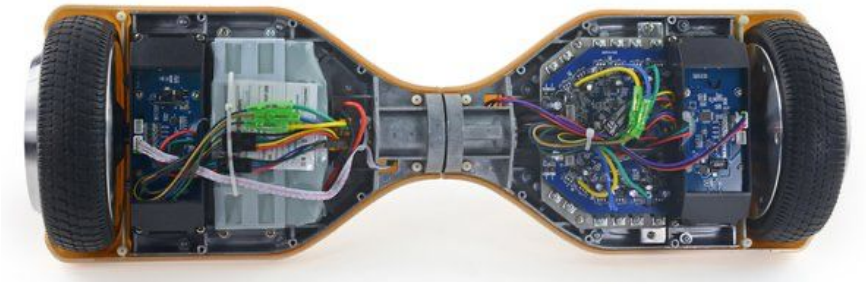
https://www.youtube.com/watch?v=HHb-5dZoPFQ

Hover-bot

Hack a generic hoverboard to make an outdoor or indoor robot from it.

A ROS compatible autonomous robot





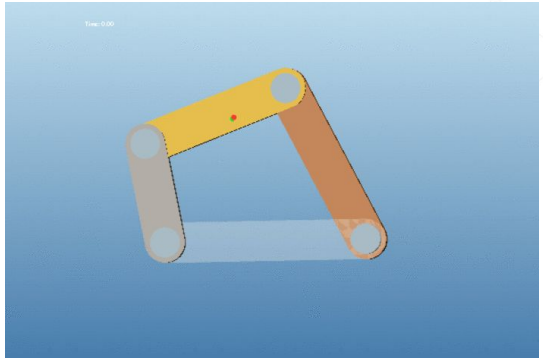
Mechatronics Lego Set

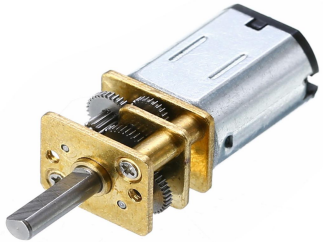
A Lego like electro-mechanical setup for exploring / testing different mechatronics and robotics setups

Easy to manufacture

Easy to use

Open Sourced

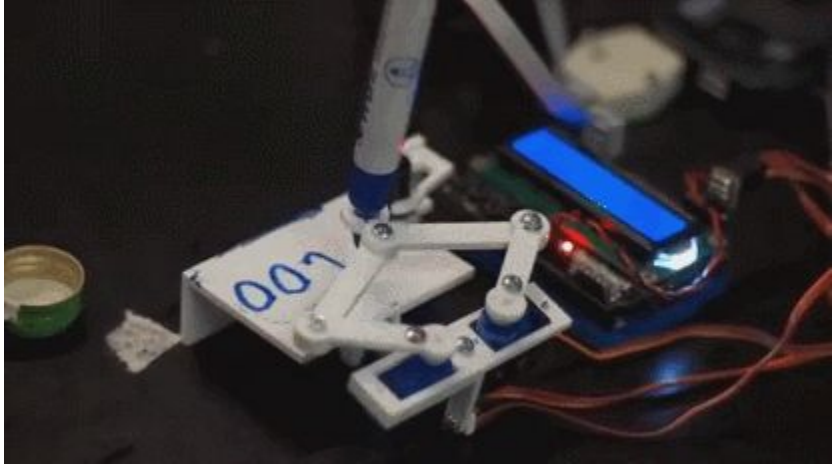


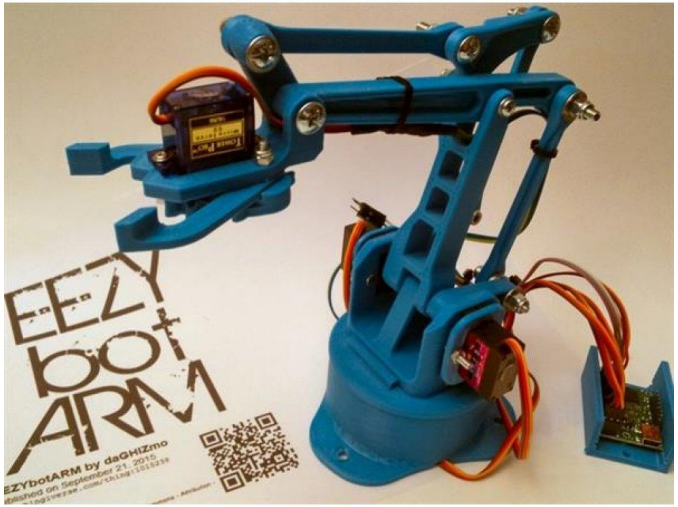


DISTRO-LAB

A setup to encourage ROS / MQTT learning platform with hands-on robotics tools:

- Sensors
- Actuators
- Requires decision making and loop closure





Lab Entertainment and Access System

Manages controlled access to the lab

Provides an entertaining access to the lab through the hallway with human interactive agents

Tracks people inside and keeps logs ??? big brother or a little one…

Gripper Design for UR3 or Panda

Design grippers and automatic gipper change mechanism for UR3 or Panda robots