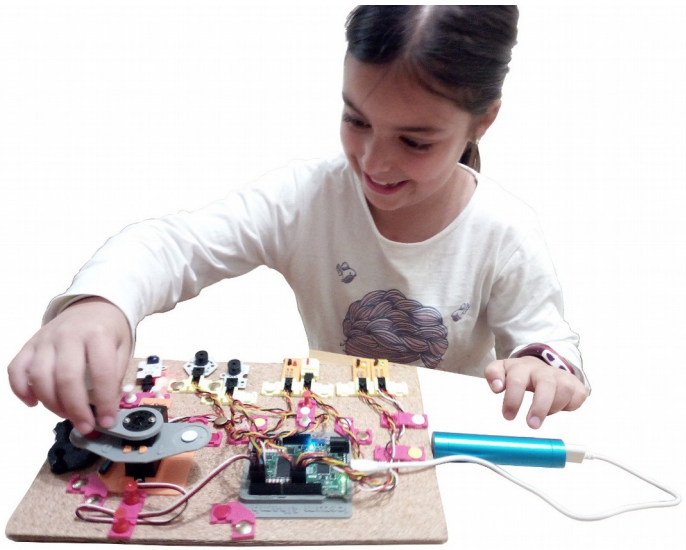
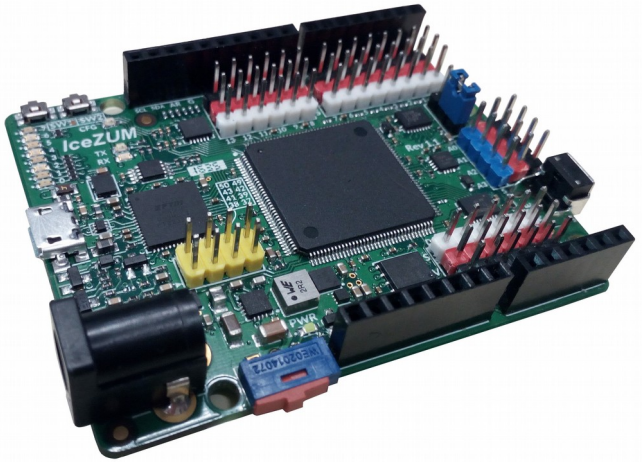
Funny Digital Electronics with Open Source FPGAs





http://fpgawars.github.io/

Juan González Gómez
@Obijuan_cube
https://github.com/Obijuan

Universidad Rey Juan Carlos

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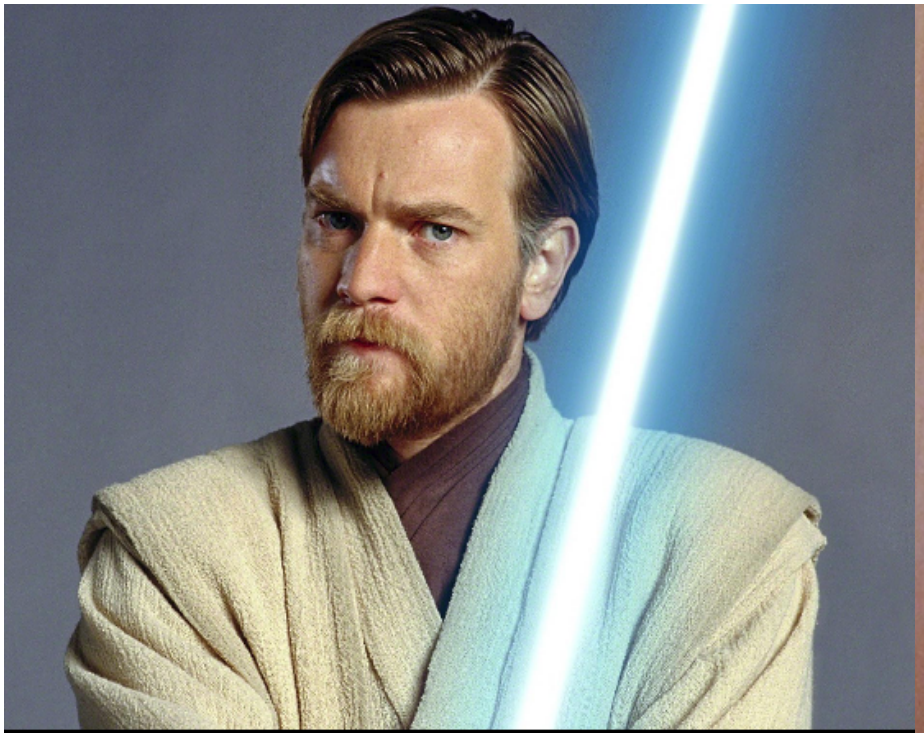
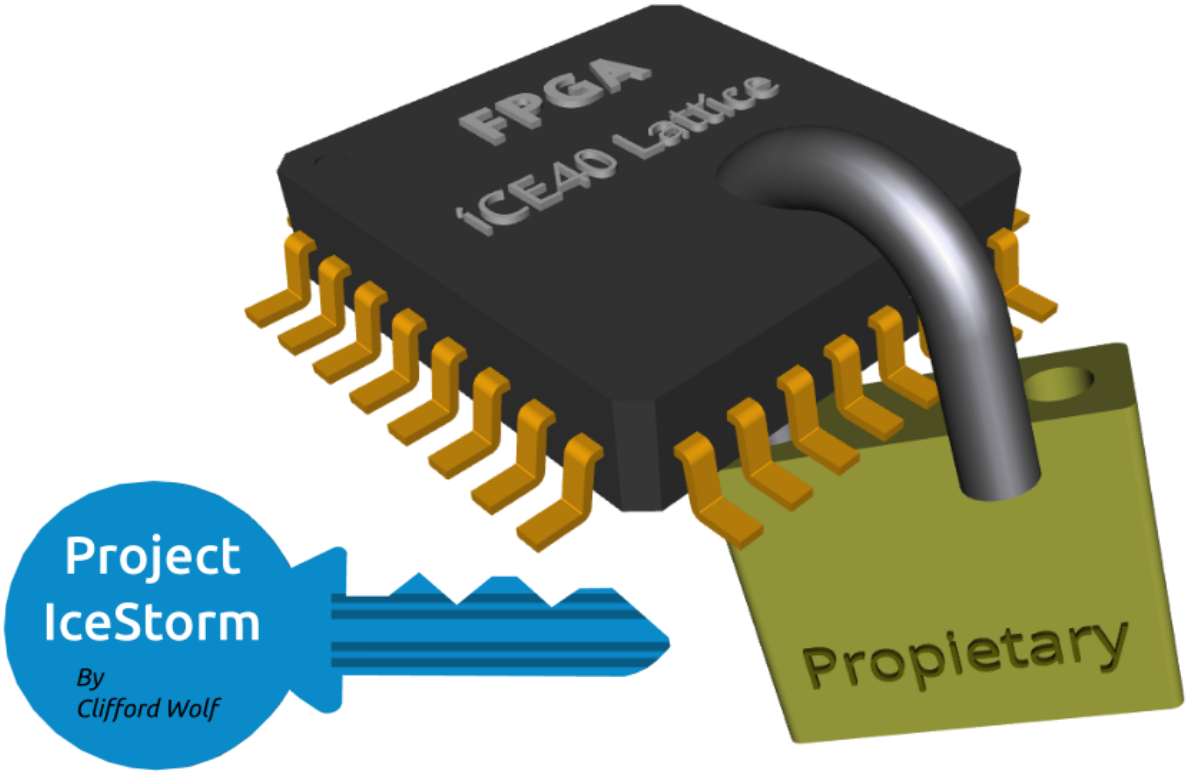


Obiwan

ObiJuan

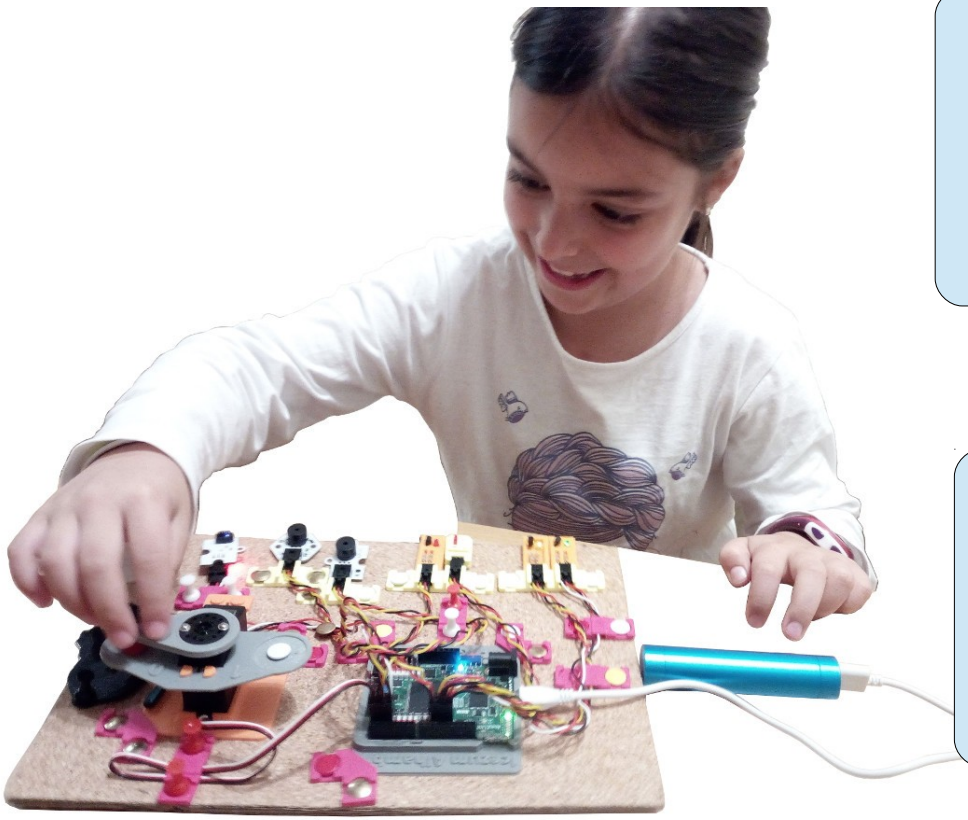
- I am not a Jedi, but I am trying…
- I am an assitant professor at Rey Juan carlos University in Madrid, Spain
- I am also a researcher in Robotics at the Robotics Lab in Rey Juan Carlos University

Icestorm project: Thank you very much!



- Icestorm project (May, 2015): Clifford Wolf, Mathias Lasser
- The first **fully open source *toolchain*** in history

Motivation

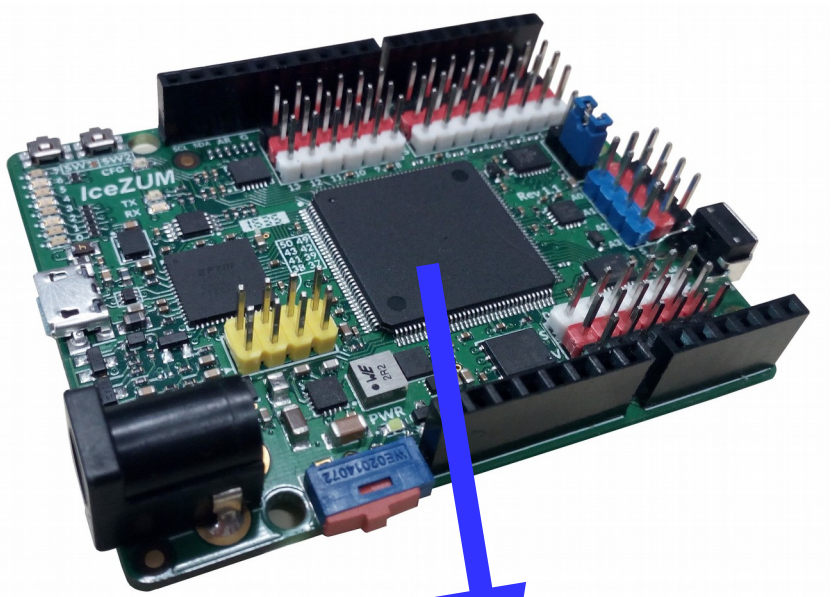


Is it possible for kids or non-tech people to design digital circuits?

Can we create libre tools for allowing them to learn digital electronics?

Icezum Alhambra v1.1

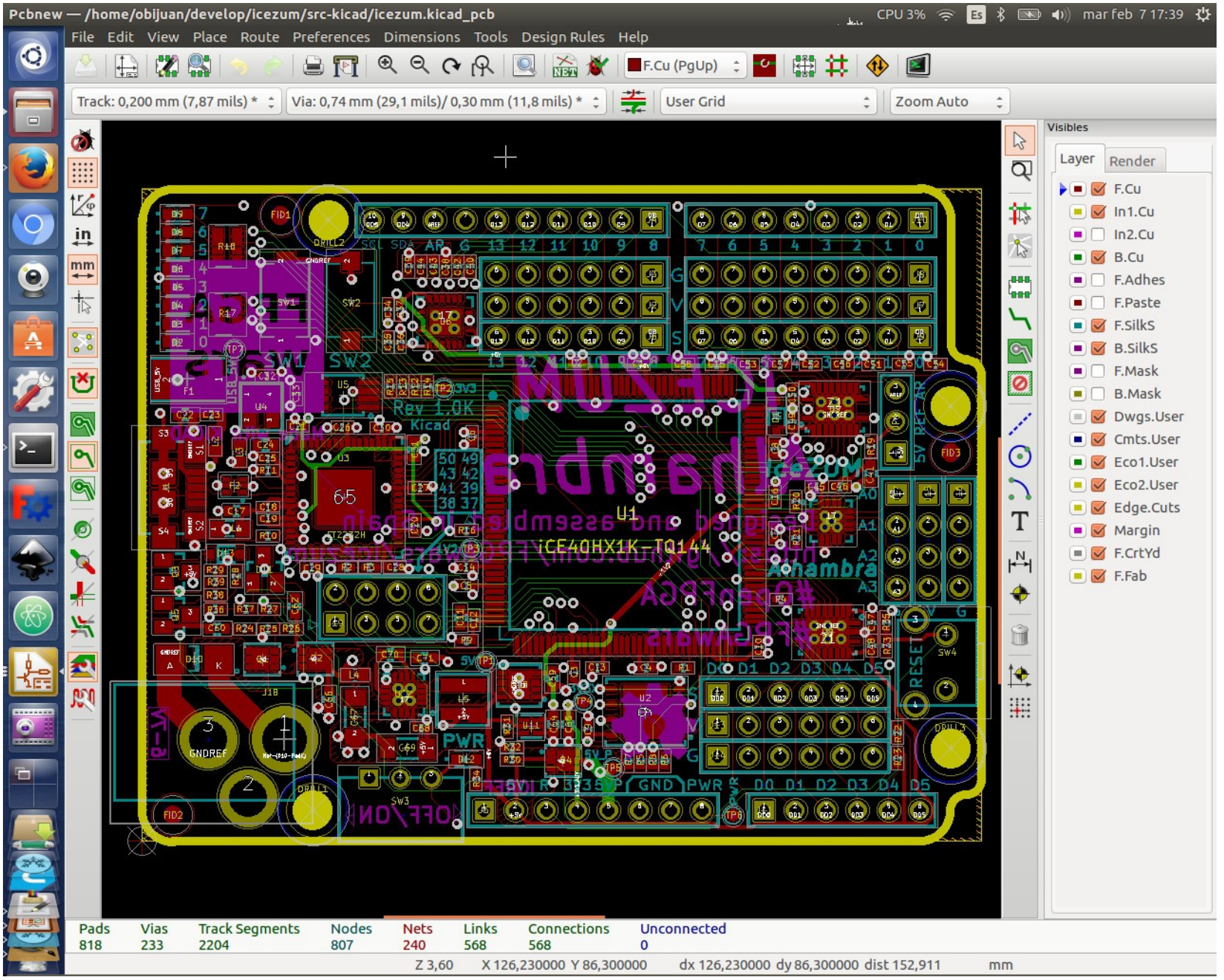
https://github.com/FPGAwars/icezum/wiki



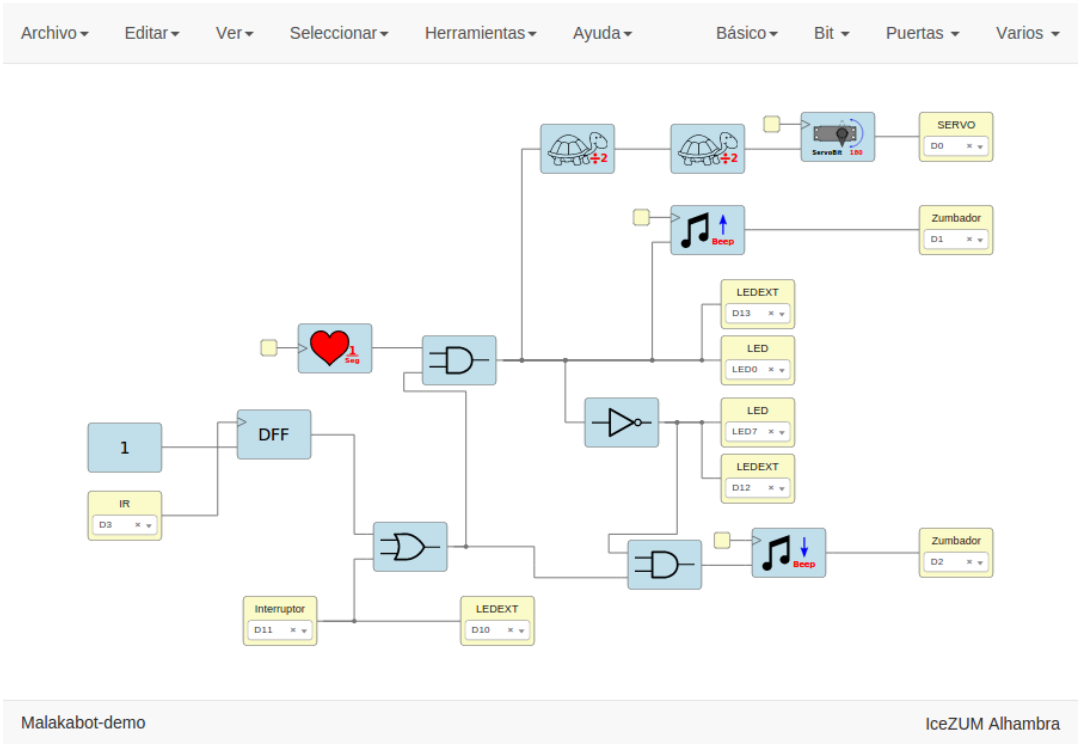
Open Source FPGA

- Author: **Eladio Delgado**
- From en Pinos del Valle (Granada, Spain)
- Arduino-like board with and Open source **FPGAs**
- Arduino compatible
- Easy connection of sensors / actuators
- Really nice for making Educational open-source Robots

Made in Kicad



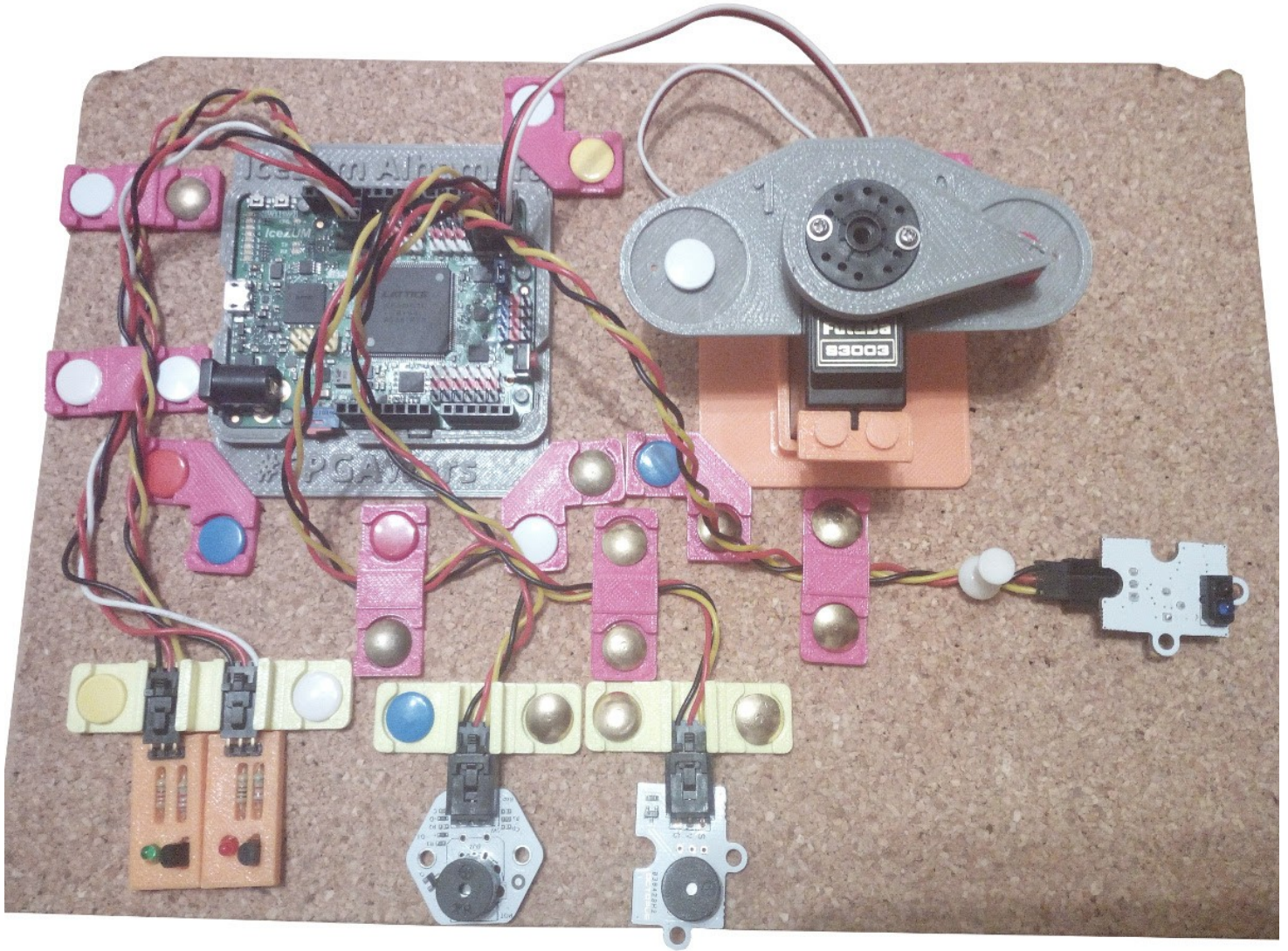
Icestudio



https://github.com/FPGAwars/icestudio

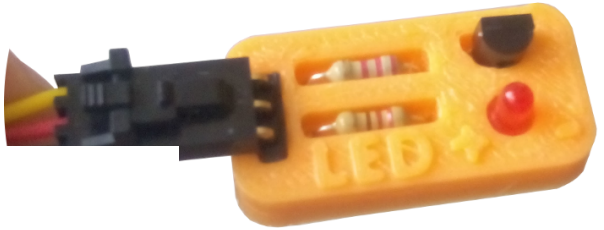
Author: **Jesús Arroyo**

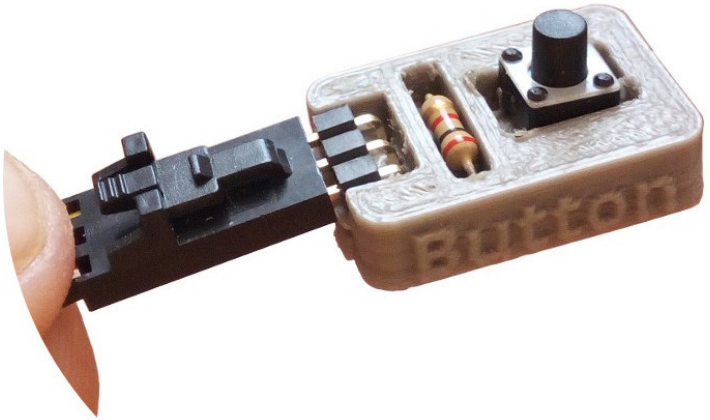
Panel example



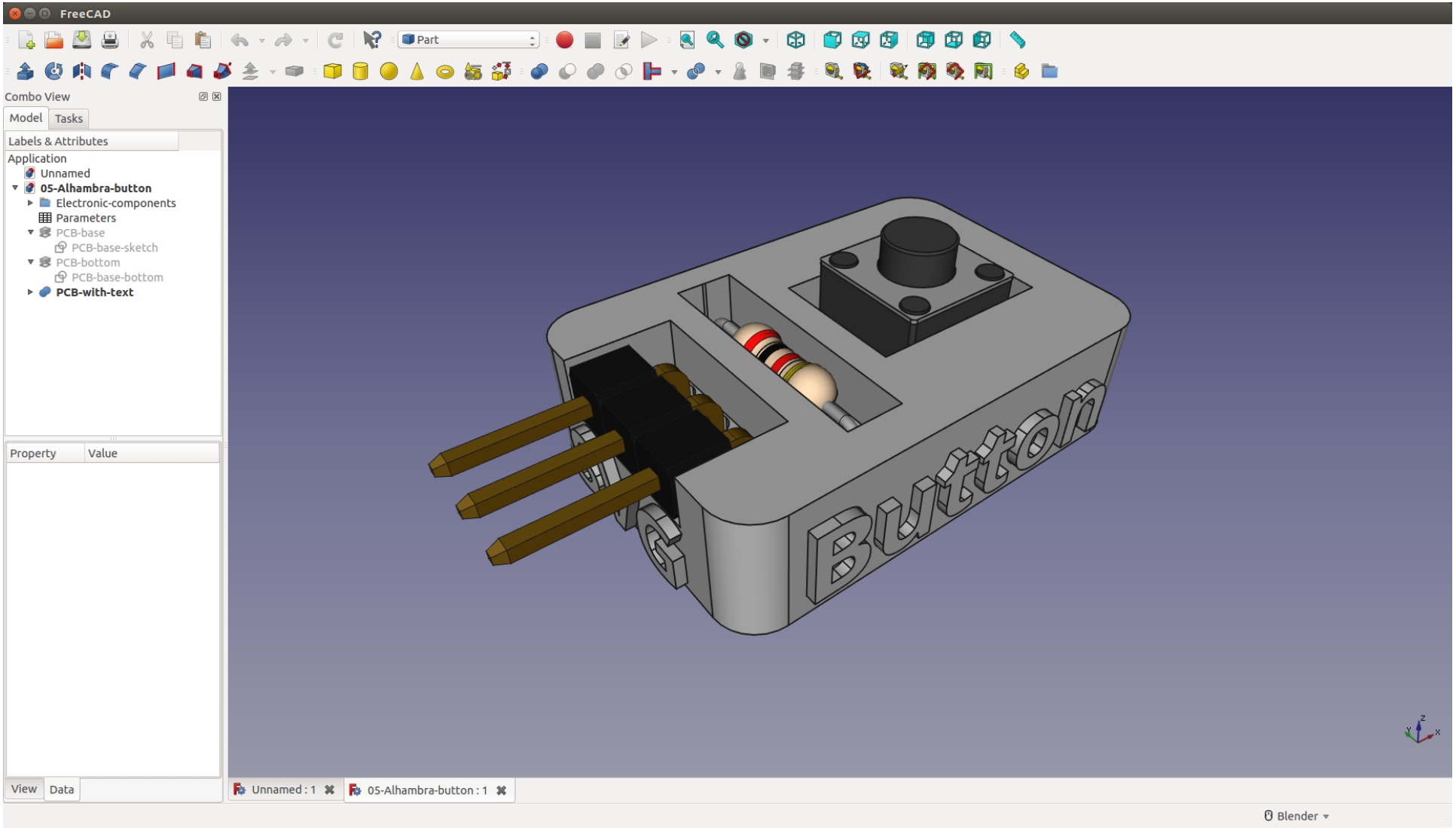
Peripherals

PCBprints: 3D printed boards

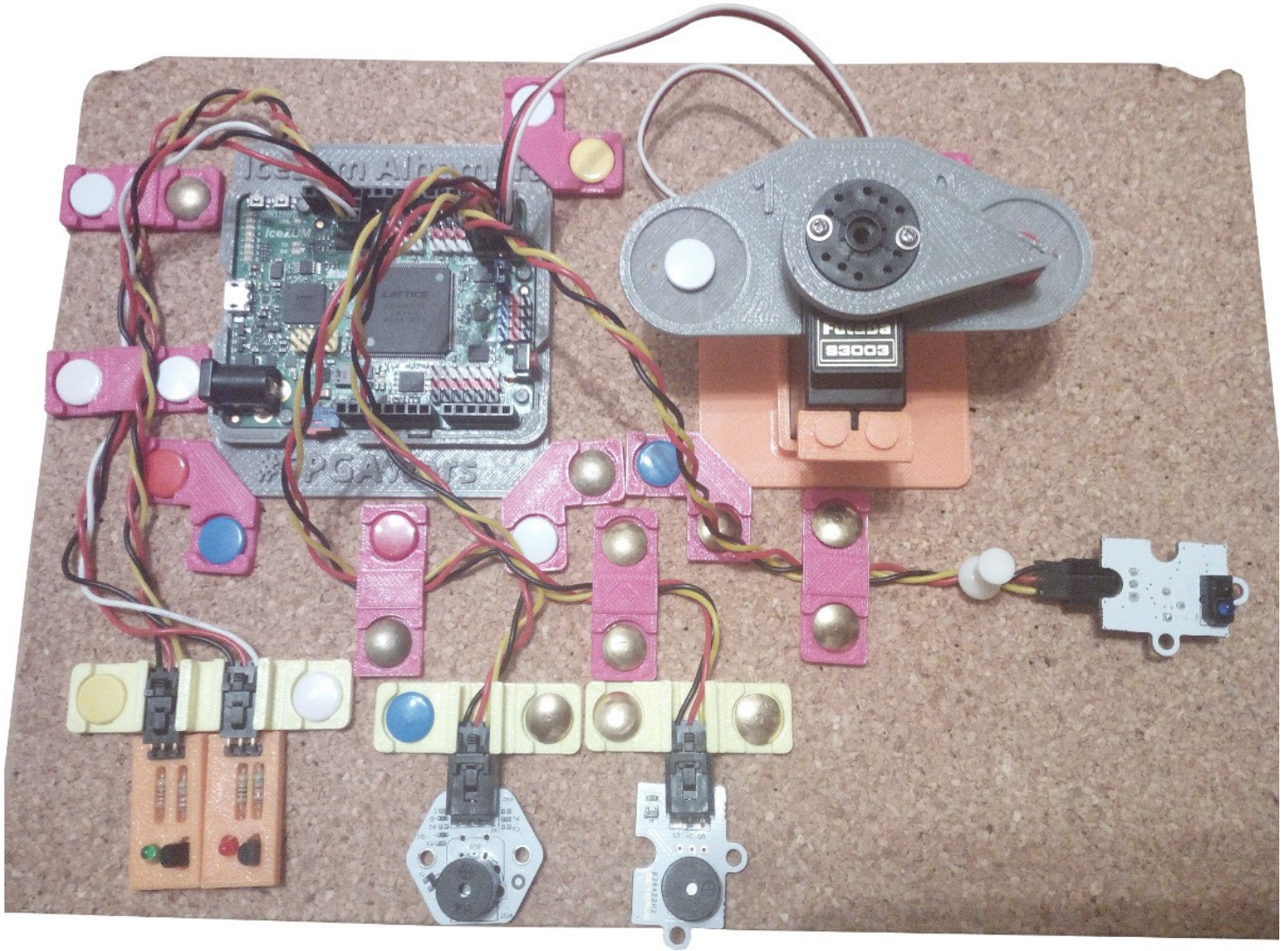




Made in FreeCAD

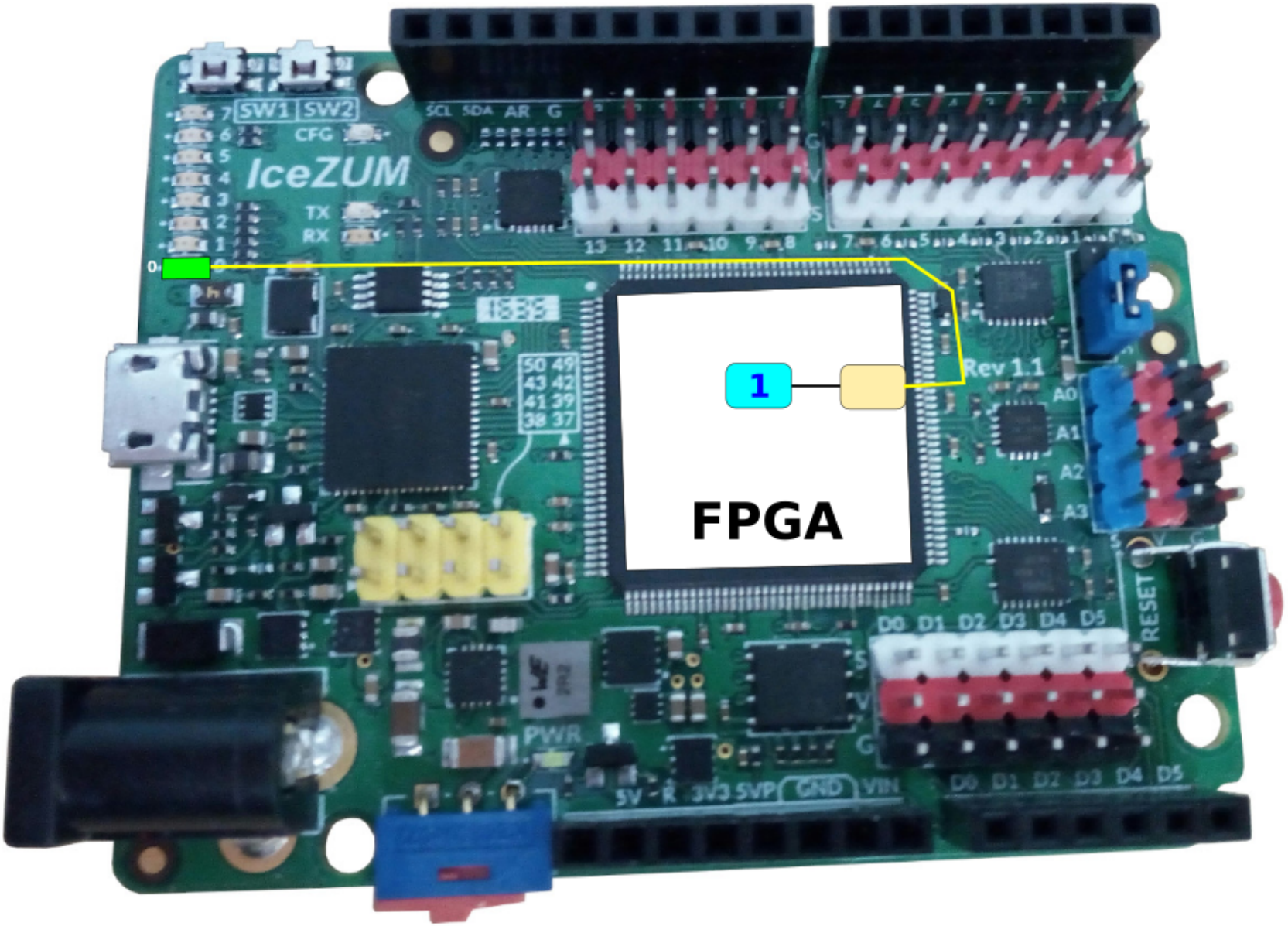


Demo!



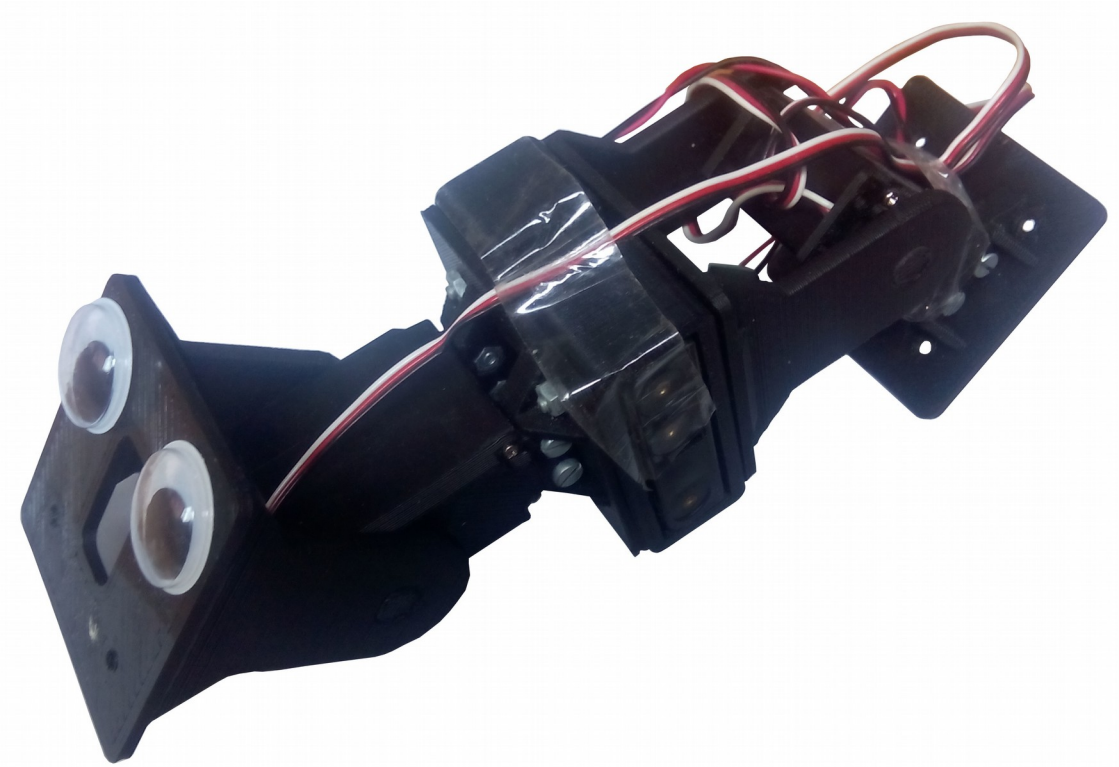
Example 1: Hello world

Hello world: Physical implementation



Live demo...

Modular Robot



May the Open Source FPGAs be with you...

Thanks! :-)

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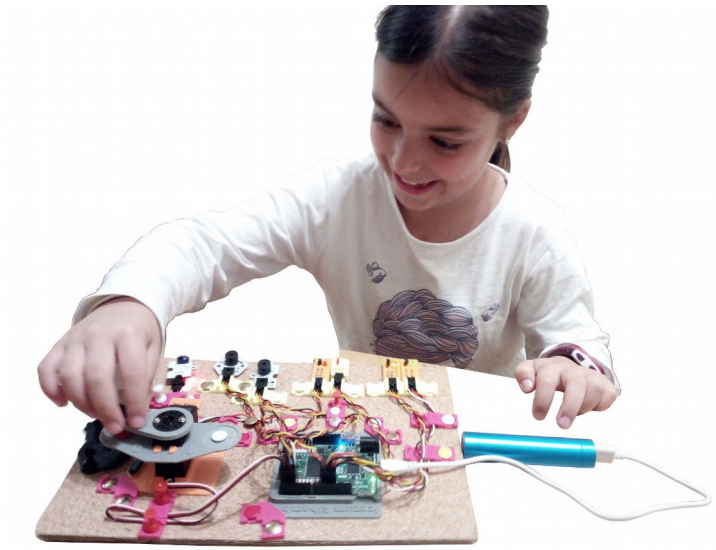

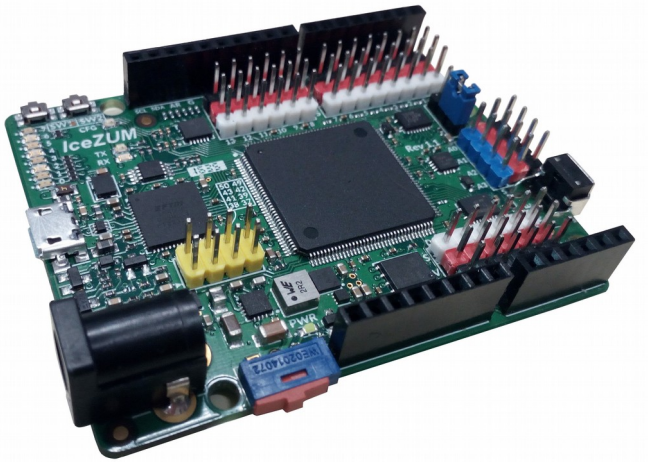

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FOSDEM '18 Brussels 3 & 4 February 2018

FPGA wars

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