

Air hockey robot

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Ukko Sarekoski

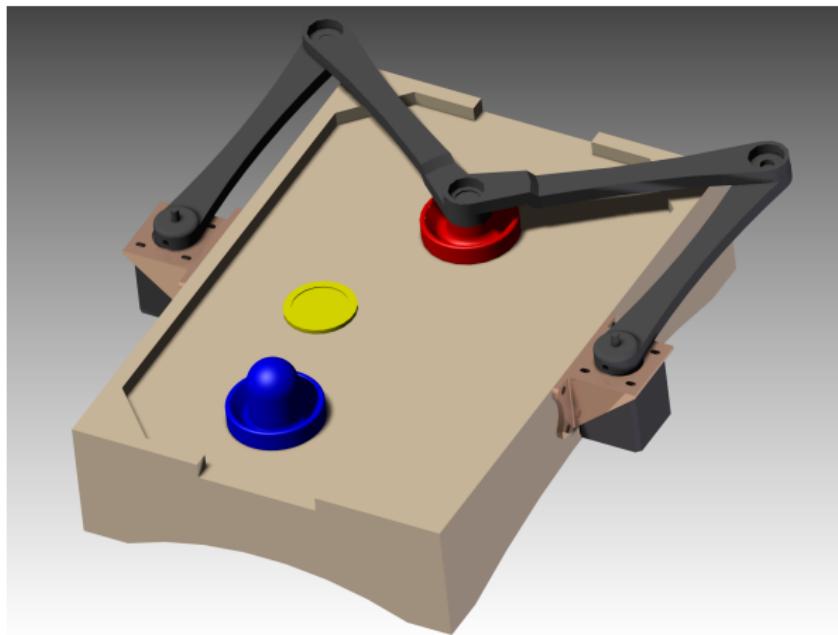


OBJECTIVES

- ▶ Air hockey table for one player, robot tracks puck and tries to defend.
- ▶ Intel Galileo provides machine vision and controls stepper motors by emulating Arduino.



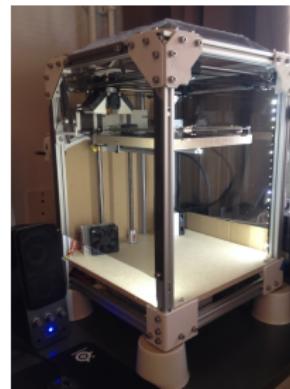
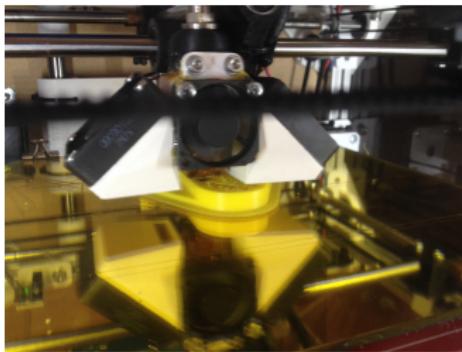
3D-MODEL



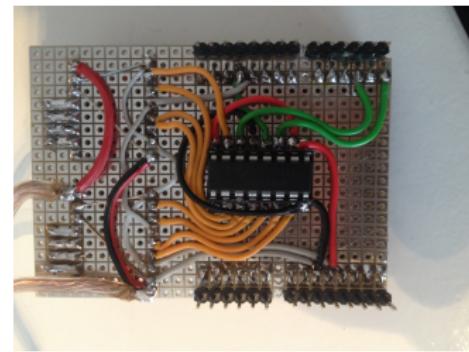
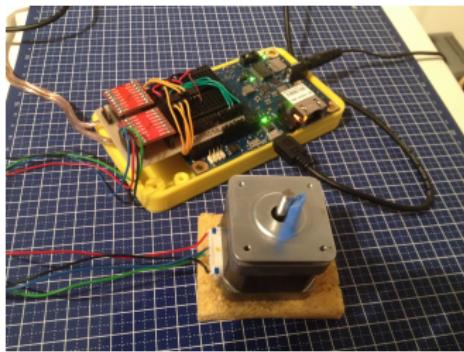
FRAME CONSTRUCTION



3D PRINTED PARTS



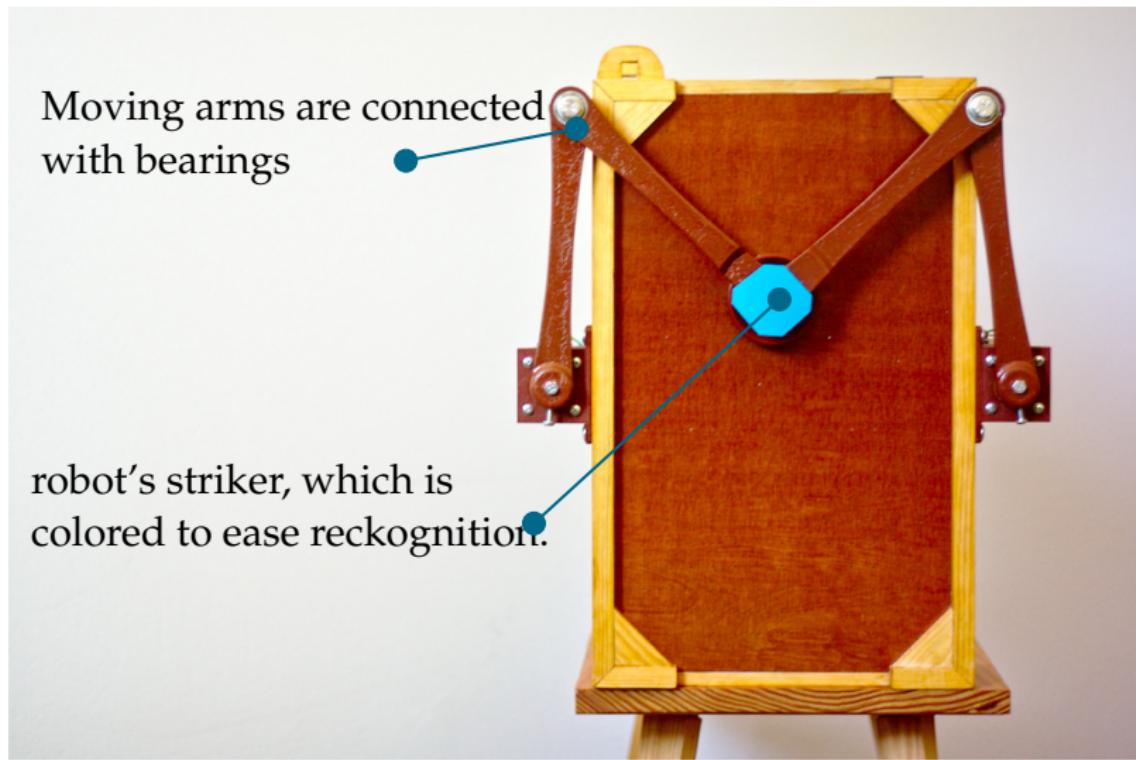
ELECTRONICS



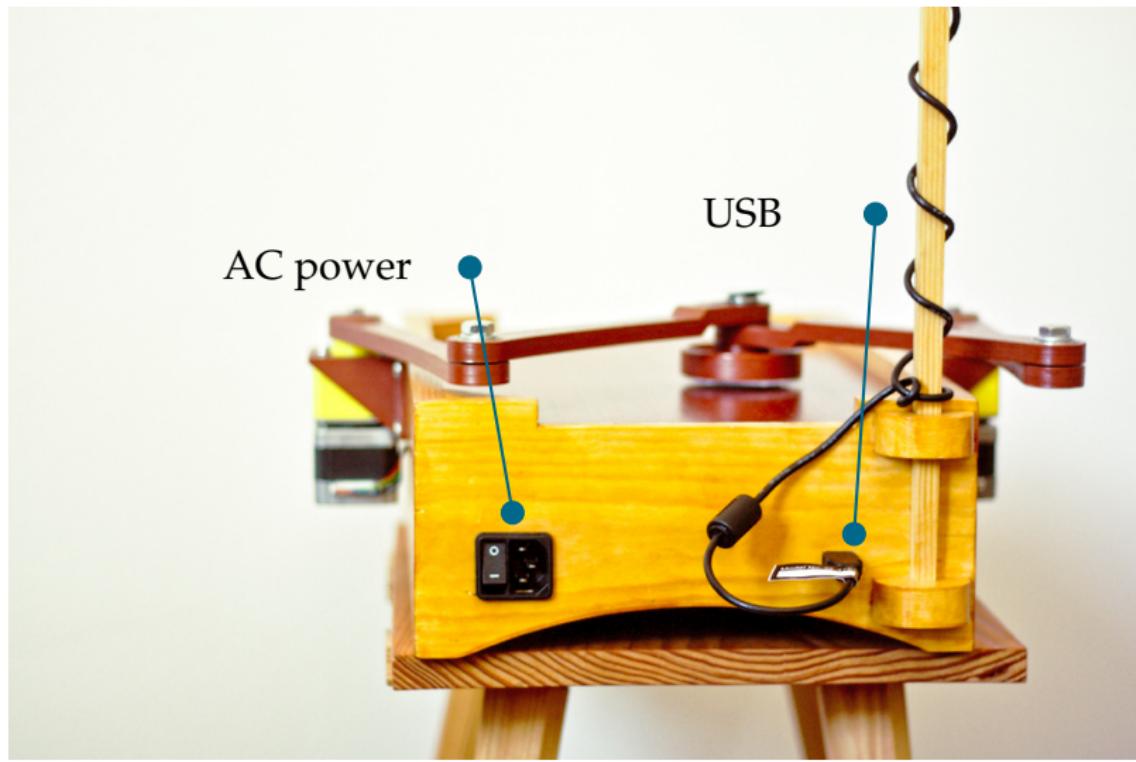
CODE

- ▶ First Galileo provides machine vision: python + opencv
 - ▶ Puck's location and velocity is solved from series of images.
From these the puck's trajectory and the best defense position is figured out.
 - ▶ That coordinate is written to serial.
- ▶ Second Galileo controls the motors
 - ▶ The striker gets moved to coordinate which is read from serial.

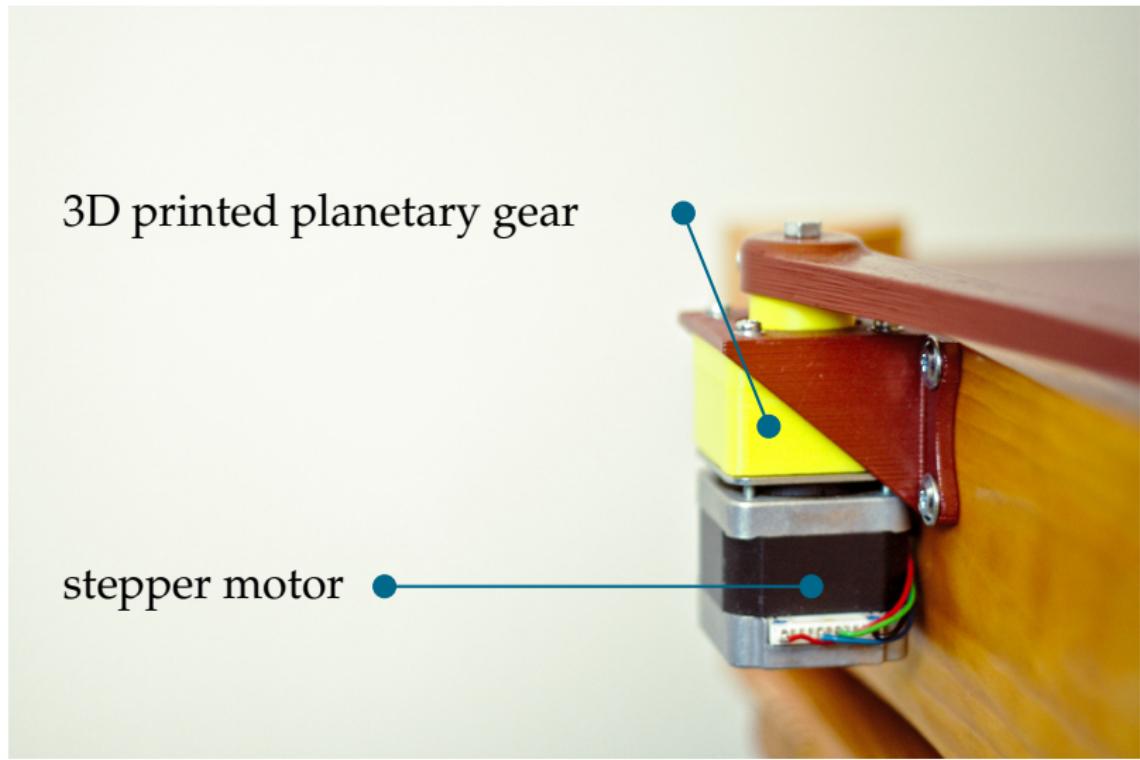
TOP



BACK



SIDE



BOTTOM

