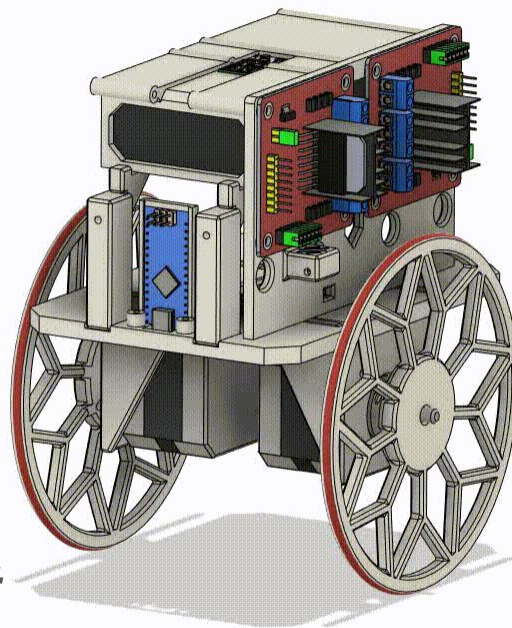


*Last time...*  
**MARCH SPRINT REPORT**

Matevž Zorec  
01-04-2022



# ***Self - Balancing Robit*** ***APRIL SPRINT REPORT***

Robotics Engineering Project (LOTI.05.032)

Matevž Zorec  
22-04-2022

**Design**  
9 cards

**TUTORIALS**  
**REFERENCE DESIGNS**  
Reference EE Designs Study. [3hrs]  
🕒 Apr 22 📧 3/3 🏆 5

**TUTORIALS**  
**REFERENCE DESIGNS**  
**FIRMWARE**  
ESP-32 fw demo from reference [5hrs]  
🕒 Apr 22 📧 5

**ECAD** **TUTORIALS**  
Altium tutorials. [3hrs]  
🕒 Apr 22 🗨 1 📧 2/6 🏆 5

**ECAD** **TUTORIALS**  
**REFERENCE DESIGNS**  
EE DESIGN  
🕒 Jun 30 🗨 27

**CAD**  
flywheel dimensioning [3hrs]  
🗨 2 📧 2 🏆 3

**CAD**  
landing gear dimensioning [3hrs]  
🗨 1 📧 3

**Sprint backlog**  
7 cards

**ECAD** **TUTORIALS**  
Altium Designer 101 [5hrs]  
🕒 Apr 22 🗨 2 🏆 5

**TUTORIALS** **ORG**  
ESP32 board search [3hrs]  
🕒 Apr 22 📧 5/6 🏆 3

**TUTORIALS**  
**REFERENCE DESIGNS**  
**FIRMWARE**  
Arduino Sketch-Refresh [3hrs]  
🕒 Apr 22 📧 3/4 🏆 4

**REFERENCE DESIGNS**  
**FIRMWARE**  
Digital PID 101 [3hrs]  
🕒 Apr 22 🗨 1 📧 2/3 🏆 4

**REFERENCE DESIGNS**  
**FIRMWARE**  
Arduino PID demo [5 hrs]  
🕒 Apr 22 📧 3/5 🏆 5

**TUTORIALS**  
**REFERENCE DESIGNS**  
**FIRMWARE**  
fw v0.0.1 [4hrs]  
🕒 Apr 22 📧 0/4 🏆 0

% progress on all of the cards of the sprint

~50% (but progressed on cards in backlog, design & done; new cards...)

time spent

meeting presentation, modeling, ECAD 101, Fab, printy printy, soldering, testing  
TOTAL ~40hrs

- + ~12 hrs ECAD videos
- + ~10 hrs CAD
- + ~6 hrs printing, tapping FAB
- + ~12 hrs FAB/Assembly

# cards start of sprint

13 + 3 extra added during sprint

# cards each column rn

design 9 | backlog 7 | done 23

# cards matching/over/under time estm.

met: 4

over: 4

under: 0

2 of the best cards:

slot lid | arduino bracket cards

2 of the worst cards:

truss redesign (+3) | assemble robot (+3)

**Done**  
23 cards

**FAB**  
wiring harness 2.0 [3hrs]  
🕒 Apr 22 📧 7/7 🏆 3



**FAB**  
finish assembly [4hrs]  
🕒 Apr 22 🗨 2 📧 6/6 🏆 4

**FAB**  
Assemble Robot [4hrs]  
🕒 Apr 22 🗨 3 📧 6/6 🏆 4



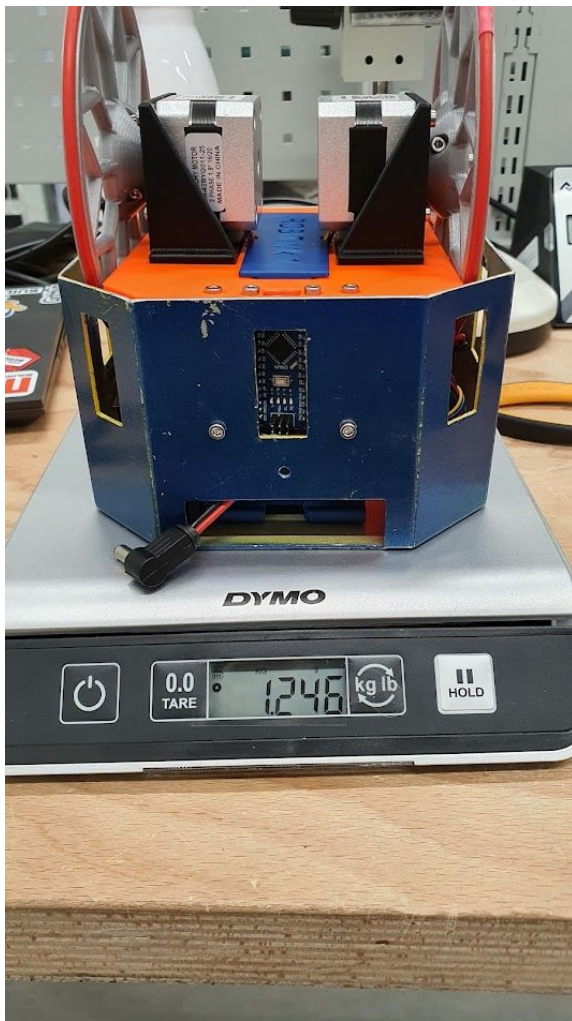


Design  
Study

FAB  
Sprint







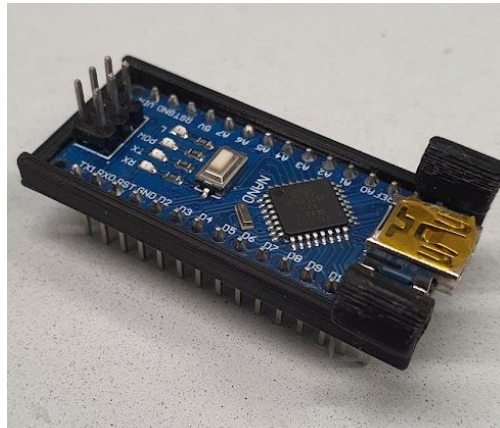
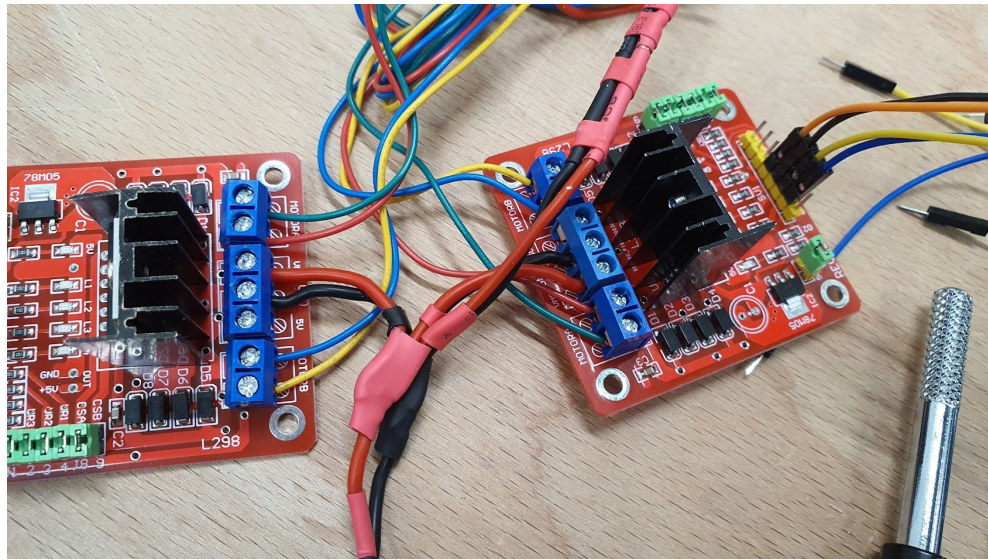
wiring harness

arduino  
bracket

IMU testing

weight:

~1.3kg



# ECAD playlist, EasyEDA & Altium Designer tutorials, Circuit Design Review, EMI

Motor LED Full V Time Nega Lego Marc Tutor Astal "You Grou How From 5V R How Begin EEVb How LED Easy H x +

youtube.com/watch?v=3AVHqV\_xASQ&list=PLiAIBcq079GoiQ3DUKEfEqATSwVlzV83k

YouTube EE IŠči

## Optocouplers

817 Module

2Channel Isolation

0:01 / 18:07 TheEngineeringMindset.com

ECAD 101  
MEGAS - 1/21

Optocoupler Circuit Design 18.07  
How Optocouplers work - opto-isolator solid state relays...  
The Engineering Mindset

LED Circuit Design 21.44  
LED Circuit Design - How to design LED circuits  
The Engineering Mindset

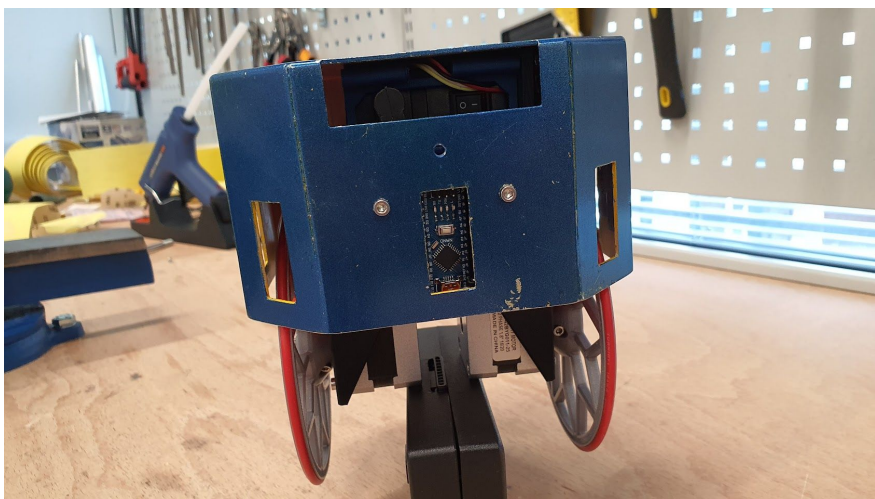
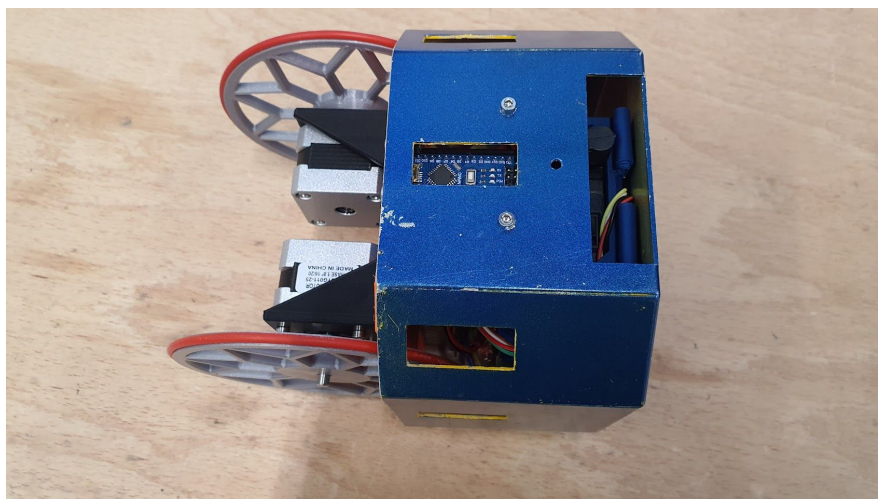
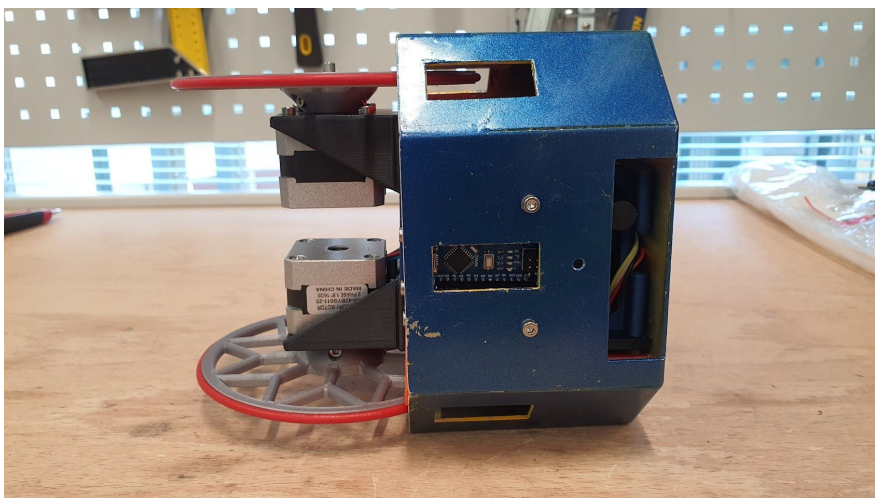
Electric Motor Speed Controller Design 17.33  
Motor speed controller tutorial - PWM how to build  
The Engineering Mindset

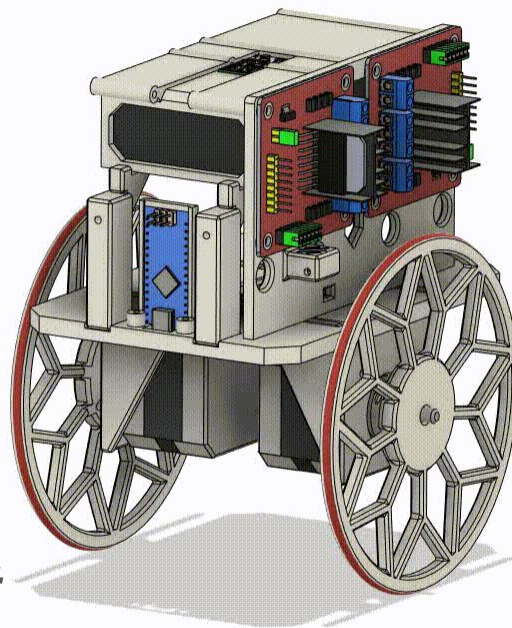
12V LED Brightness Controller Design 15.36  
LED Dimmer controller design - Electronics engineering pulse...  
The Engineering Mindset

Full Wave Bridge Rectifier 18.59  
Full Wave Bridge Rectifier + Capacitor filters + half wave...  
The Engineering Mindset

Time Delay Relays 12.29  
Time Delay Relays Explained - How timing relays work hvac  
The Engineering Mindset







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