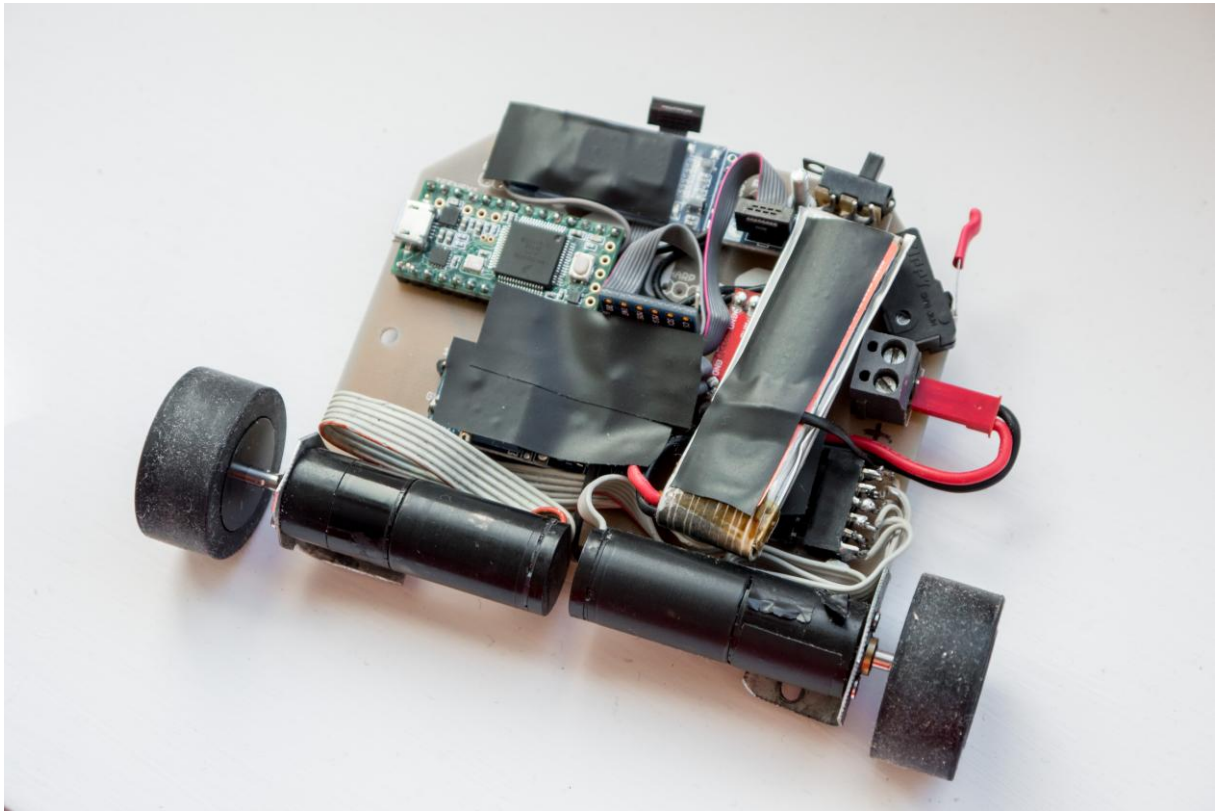# Lenco full description

Photography:

Specification:

- Processor: *Cortex M4, 32-bit, ARM (Teensy 3.2 development board)*
- Frequency: *96 MHz*
- Sensors: *3-axis gyroscopic sensor, 3-axis accelerometer, 3-axis compass, optical linear CCD sensor, 2x magnetic encoders*
- Motors: *2x Faulhaber DC motor 20:1*
- Battery: *1-cell LiPol with DC-DC voltage booster*
- Programming language: *C*

Description:

A small and light segway-balancing robot for the segway category. Uses a 9-axis pose sensor with combined gyroscopic, acceleration and compass sensing for stabilization, quadrature encoders for motor feedback and a linear CCD camera for line sensing. It is based on the Teensy 3.2 USB development board with ARM Cortex M4 based processor and can also use Bluetooth connection.

Schematic:

Compass 3x gyro Acclerometer

Linear sensor

Orientation sensor

Bluetooth
HC-06

RX/TX

CLK, AnalogIn, CS

RX/TX

Mega328p
8MHz

Reset

GND

I2C

Li-po 1S

InterruptIn
Encoder

Cortex M4
96MHz

3,8V

Motor 1

MOSFET

PWM

PWM

11V

InterruptIn
Encoder

DC-DC voltage booster

11 V   Motor 2

MOSFET

GND