

O.Y.T. - The Track Guided Robot

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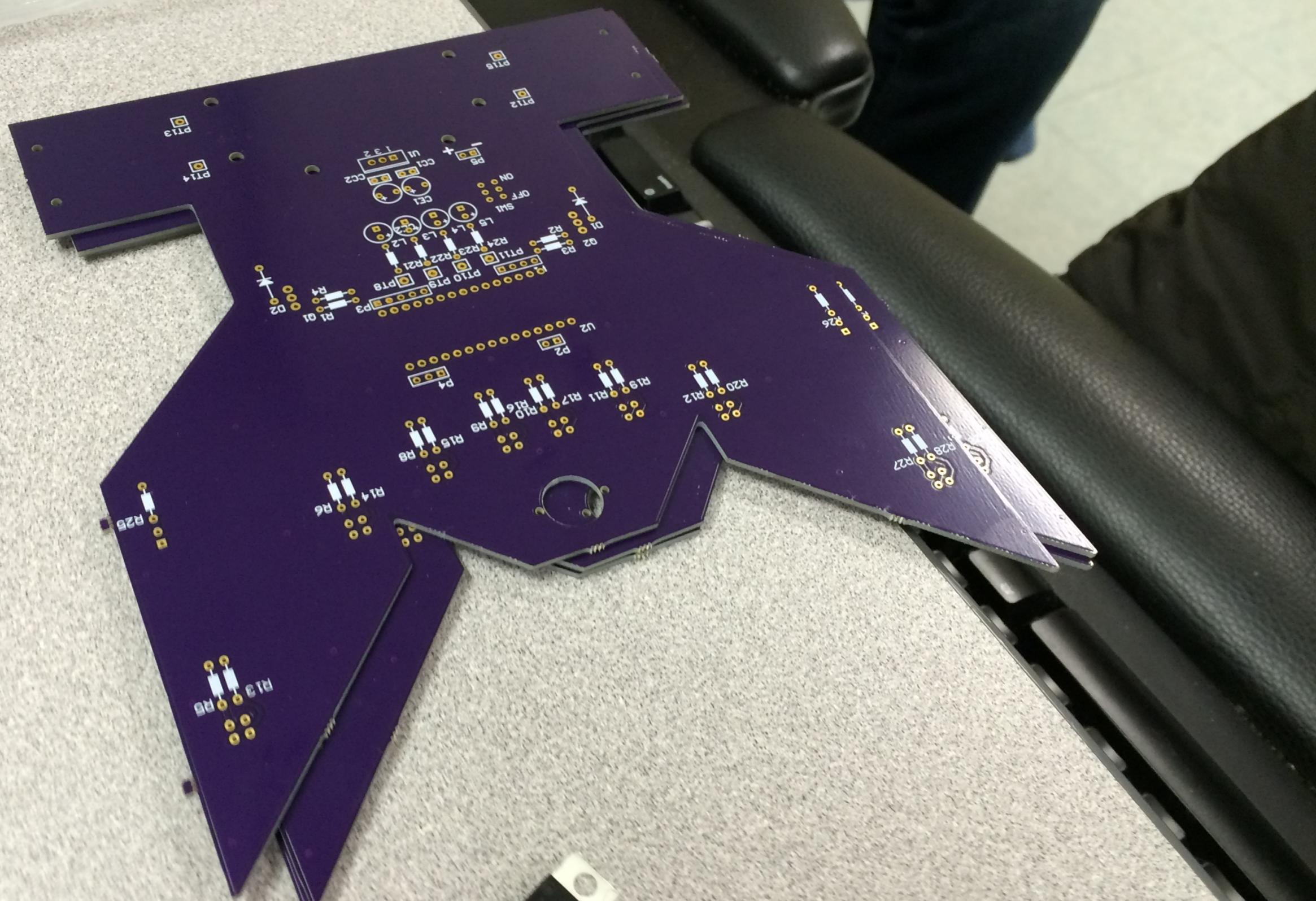
Overview

- Introduction
 - Objective
- Development
 - Hardware
 - Software
 - Applications
 - Demo

History of Tracks

- Wagonways started at 15th century
- Railroads since the First Industrial Revolution.
- Importance for the development of mankind.



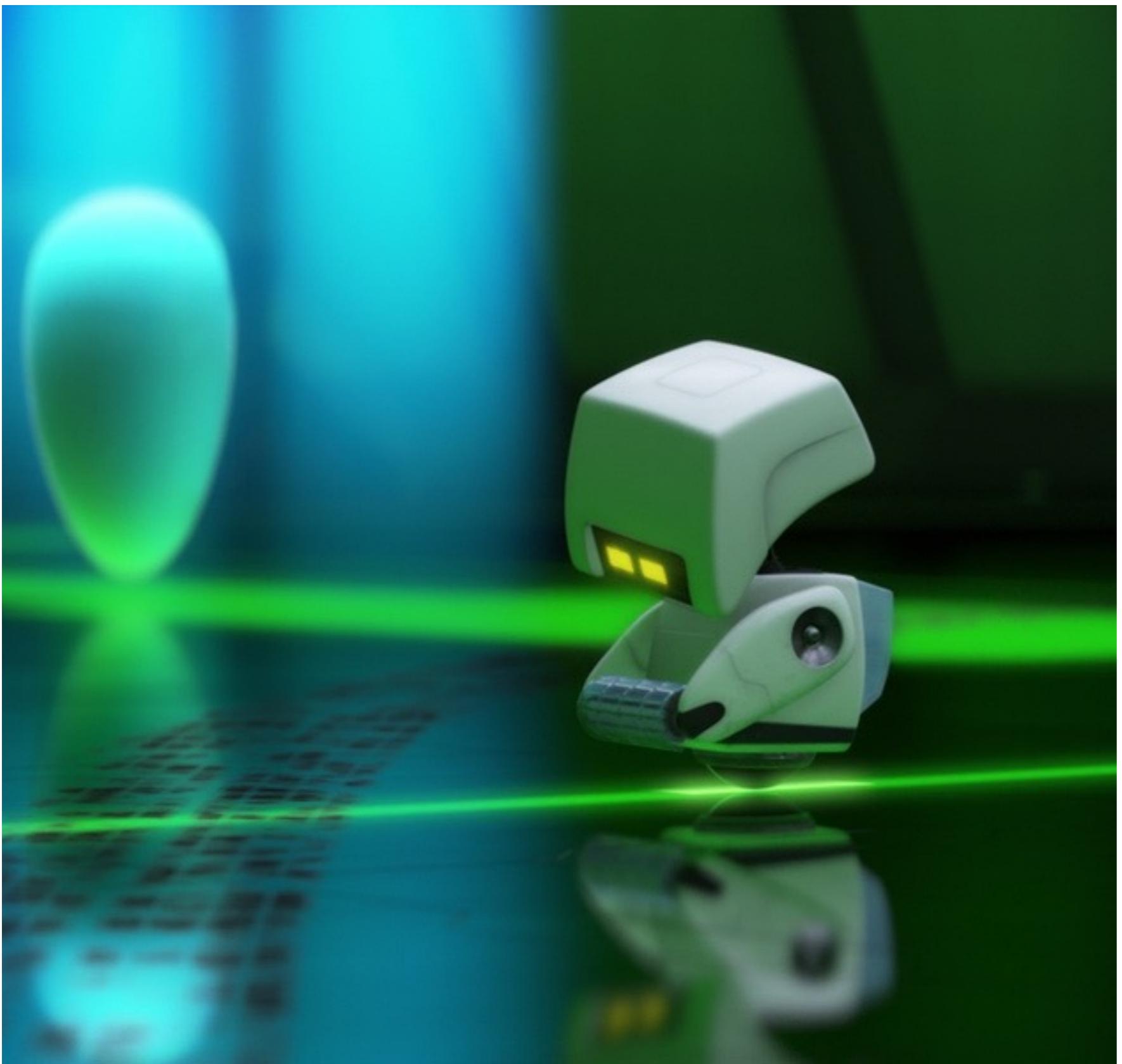


Introduction

What are we trying to do?

Objective

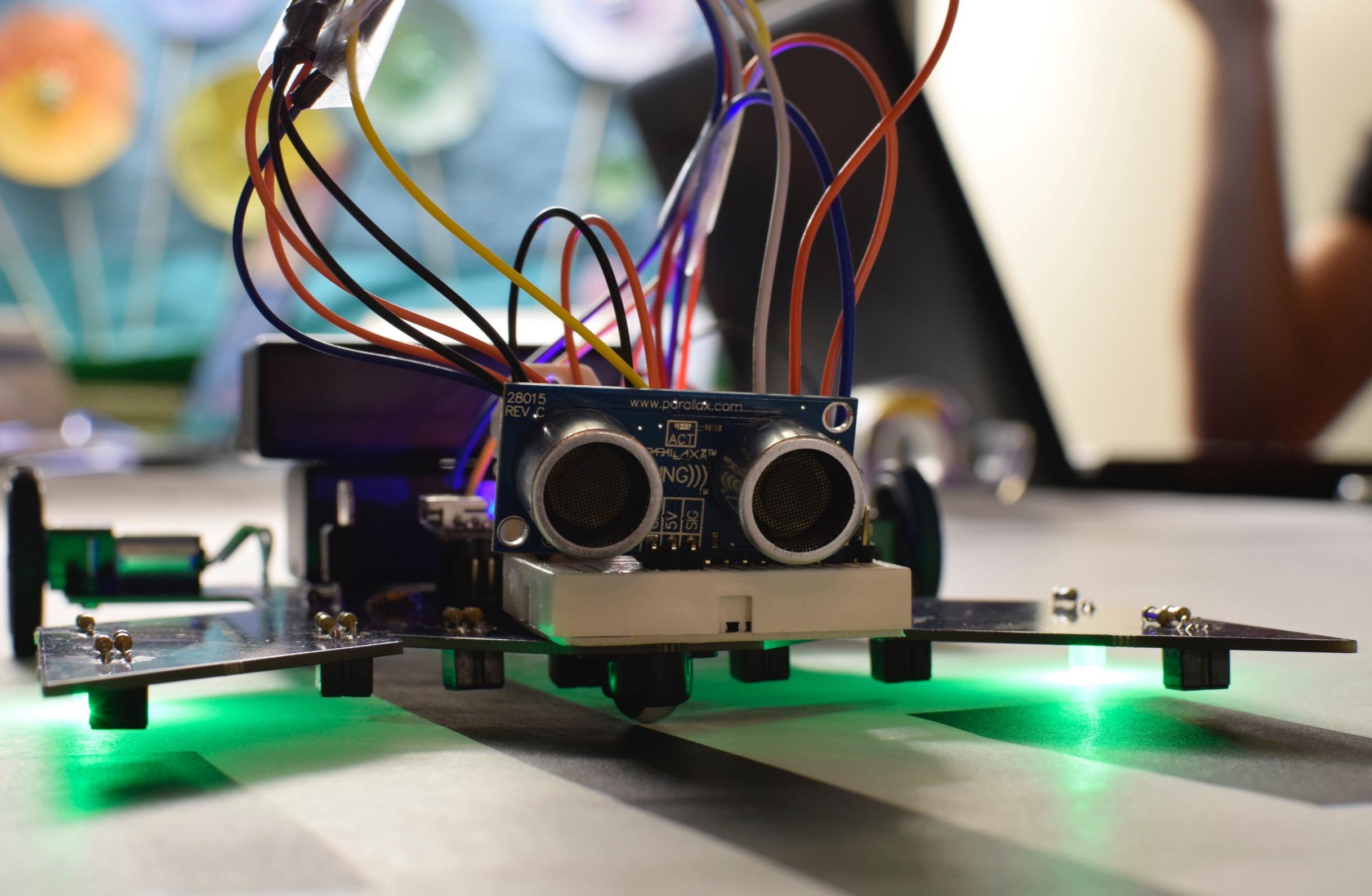
- Create a robot which is able to follow a track and transport items or make measurements.
 - Not expensive.
 - Easy to set up.
 - Reliable.



A robot following a track from Wall-e (2008) in the left.

A repair robot from Star Wars (1977) in the upper-right.

A chair following a track from Wall-e (2008) in the bottom-right.

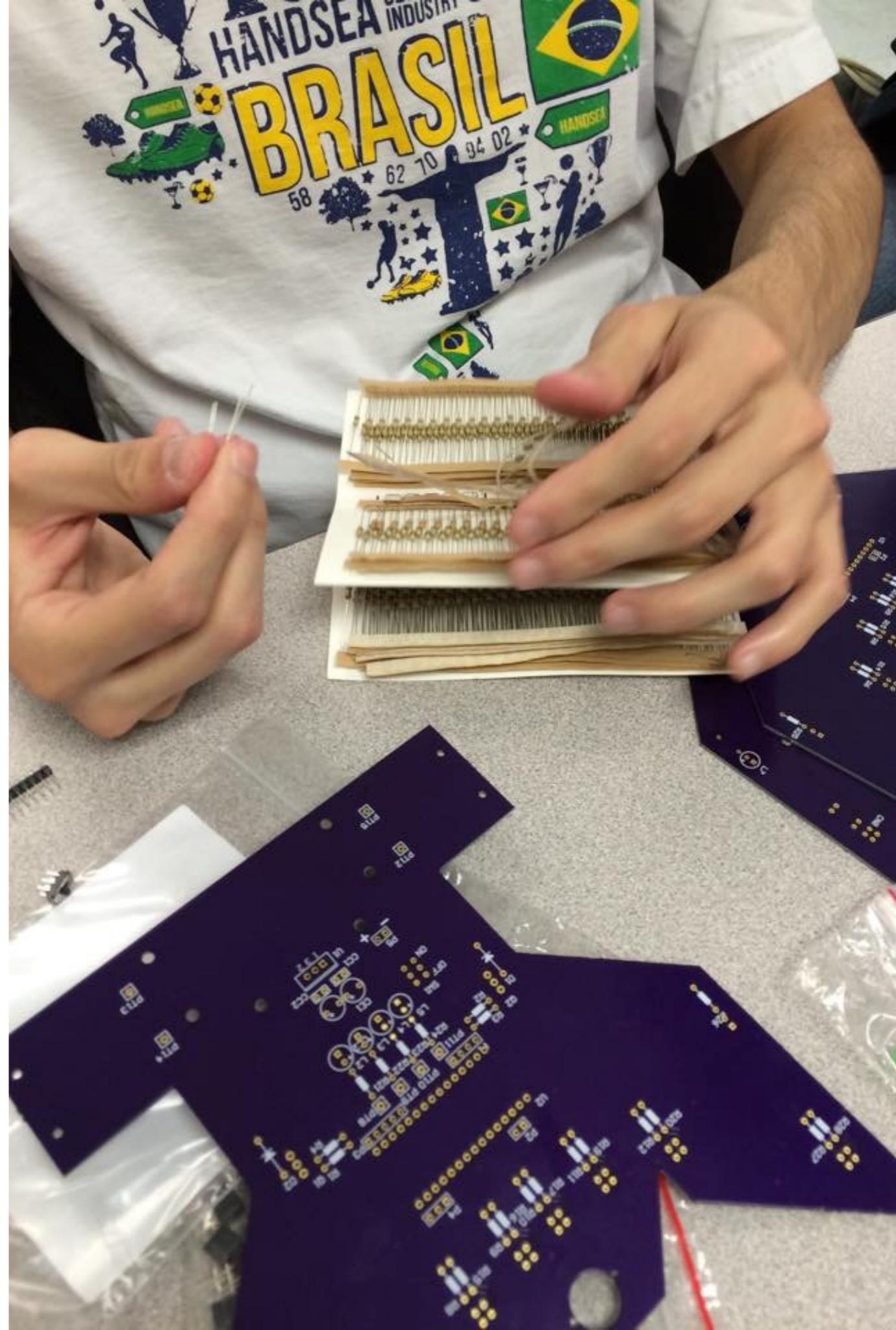


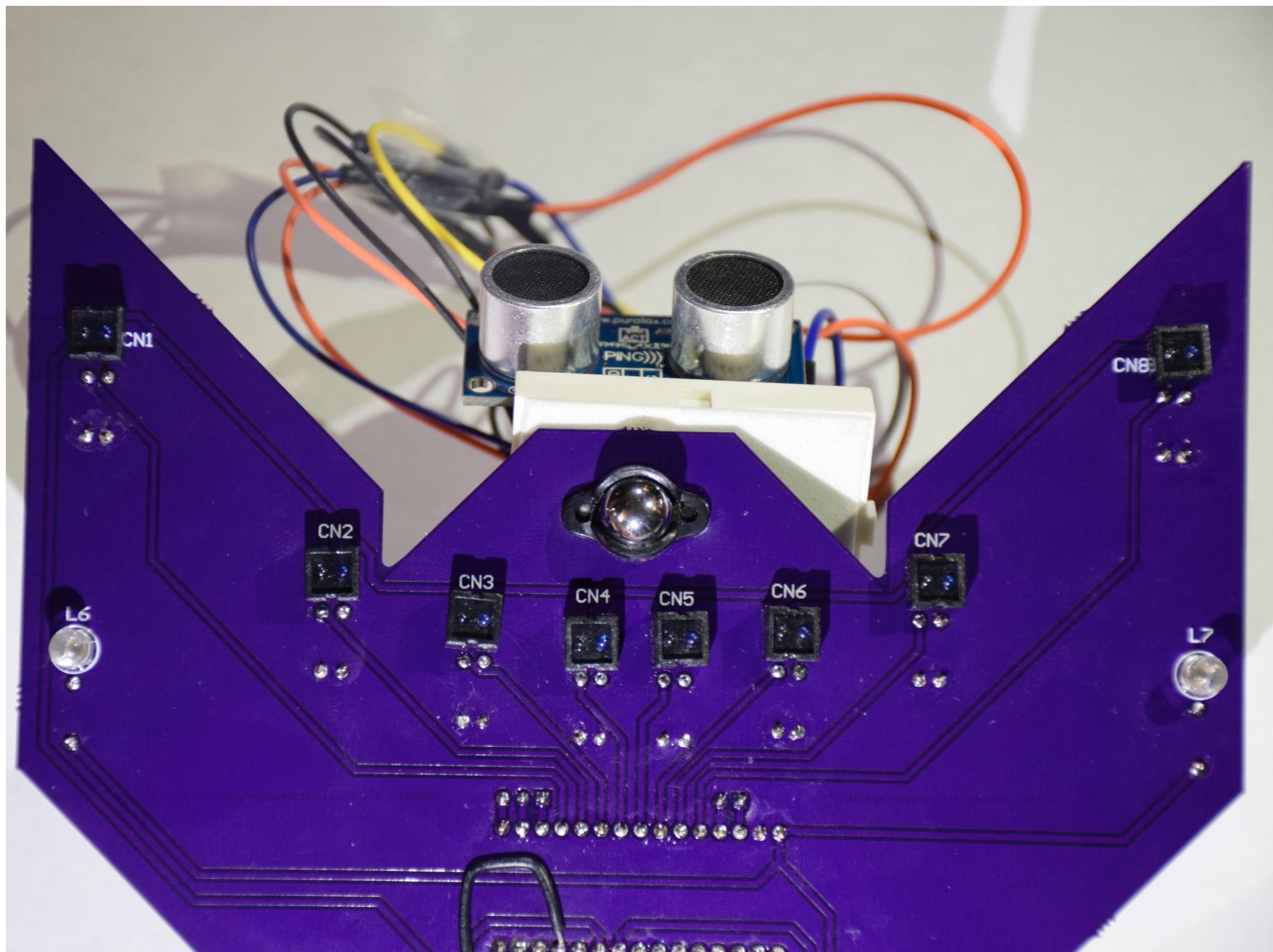
Meet O.Y.T.

On Your Track Robot

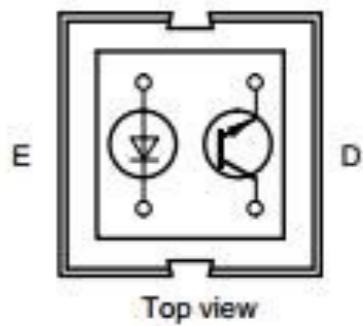
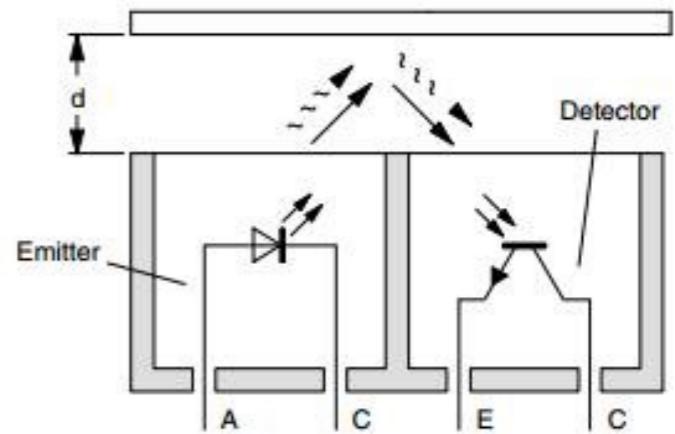
Development

- Hardware
 - Arduino Nano
 - 8 infrared sensors
 - 2 DC motors
 - Ultrasonic sensor
 - Communication using Xbee
 - PCB Design
 - Sensor-based circuit and operation



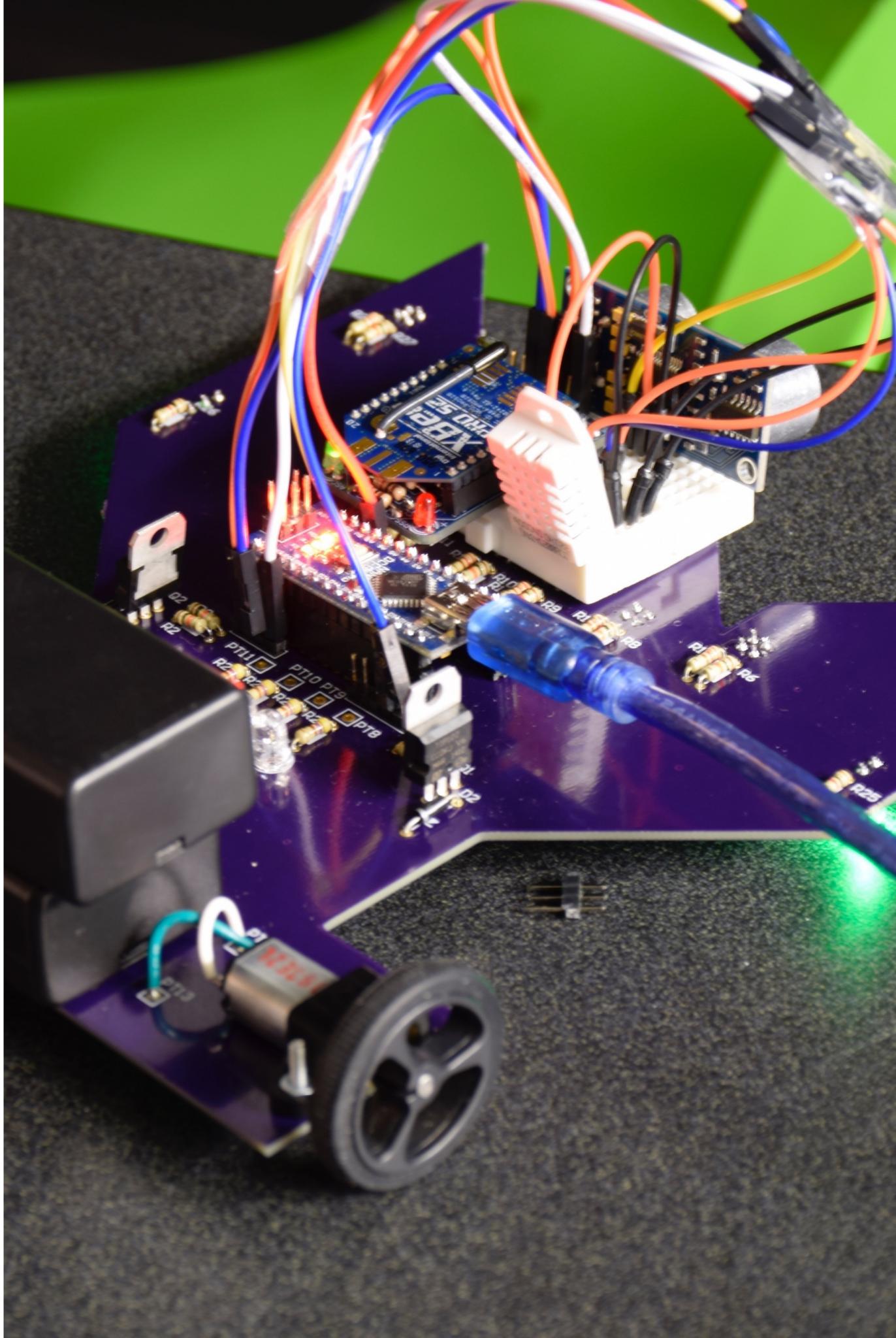


Infrared sensors



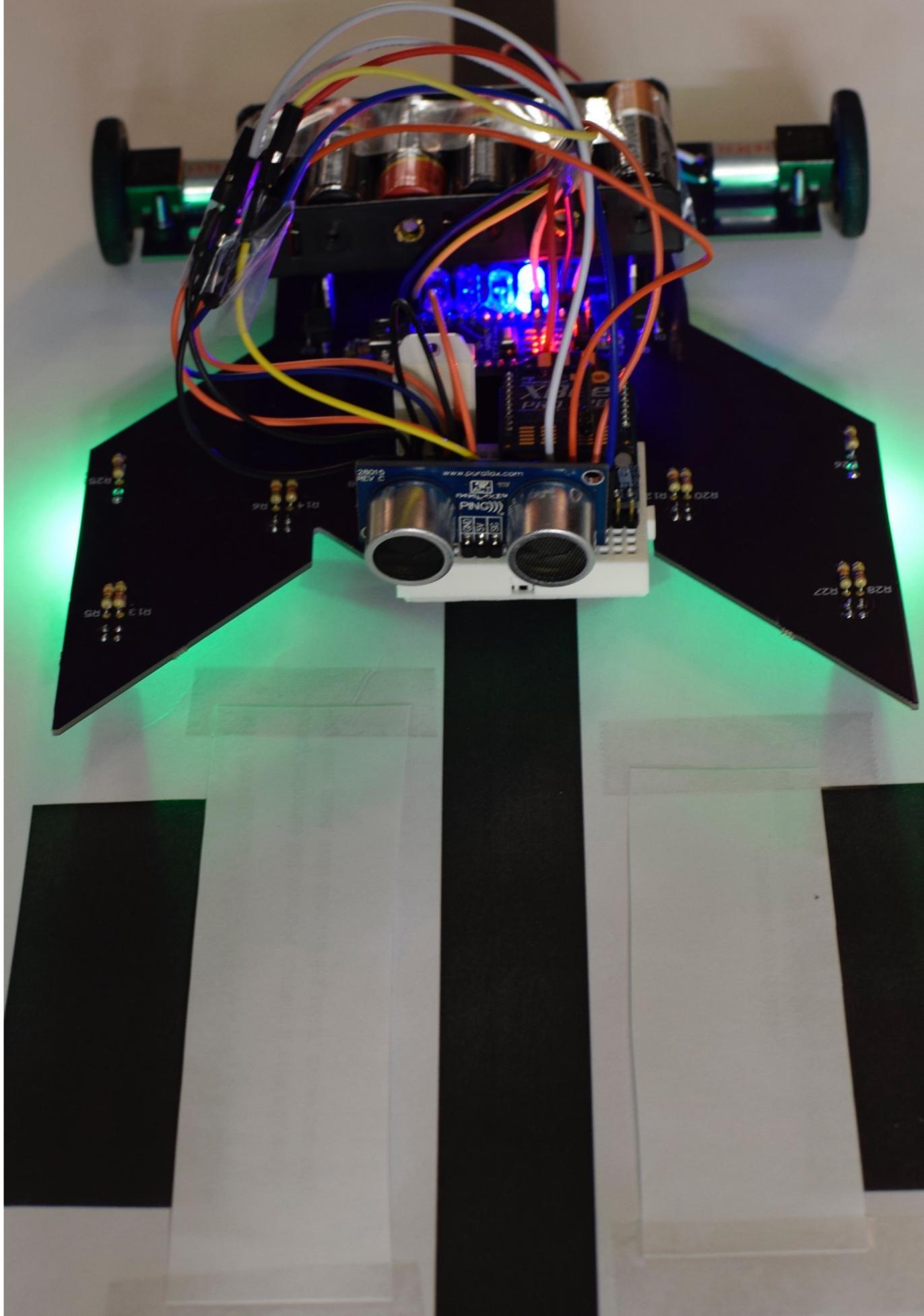
Development

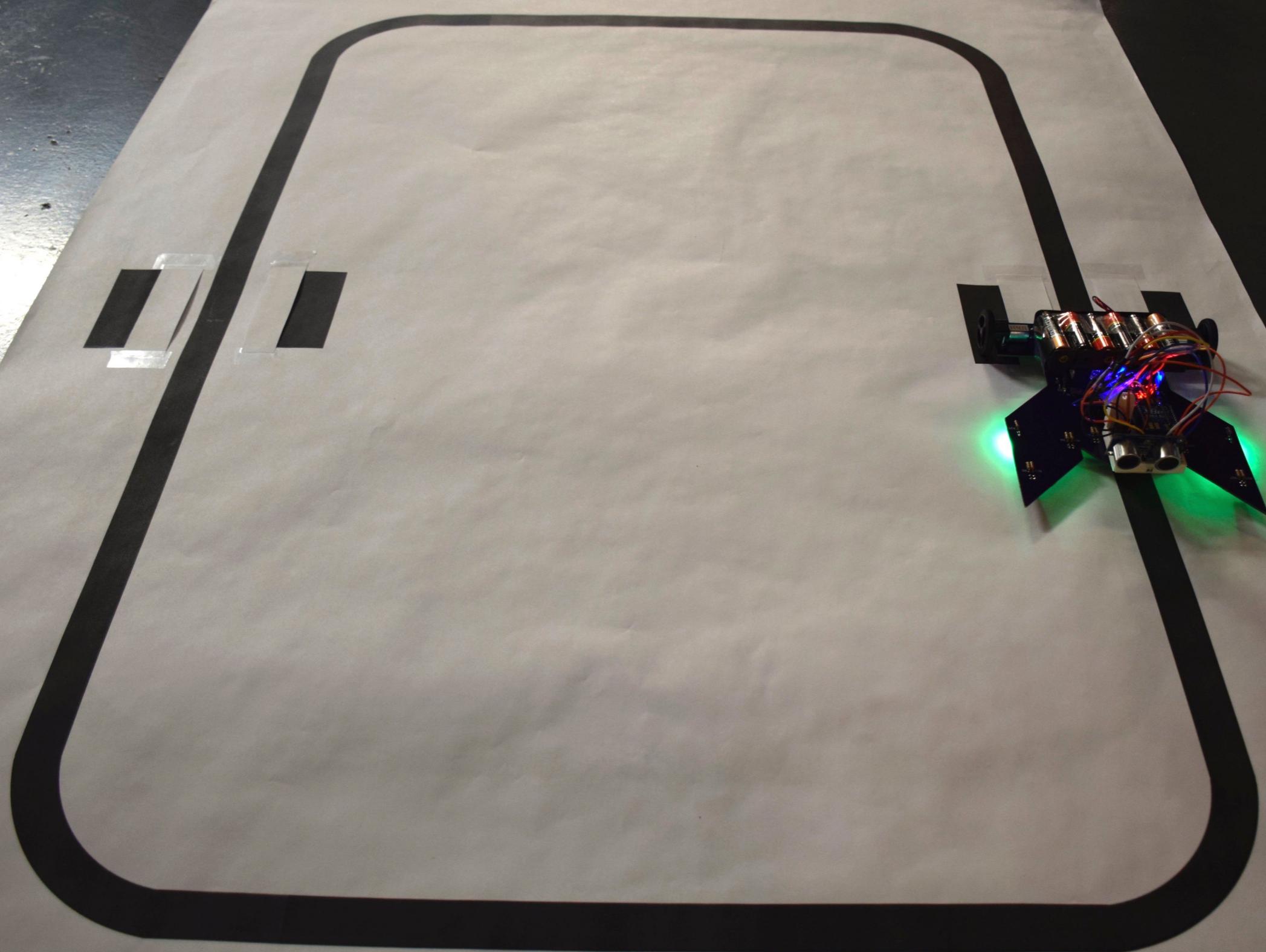
- Software
 - Entirely built on Arduino Platform
 - MATLAB controlled
 - Serial connection through Xbee
 - Retrieve and plot data
 - Notified in case of malfunction



Applications

- Stock replacement
- Delivery by request
- Cargo transportation
- Measurement with sensors
- As many applications as you can think of





Demo

Let's put it to work!

O.Y.T.

- Simple circuit scheme on an affordable PCB construction
- Built with Arduino
- Communication with Xbee
- Common components
- Hours of hard work on architecture, soldering, coding and testing

Thank you!