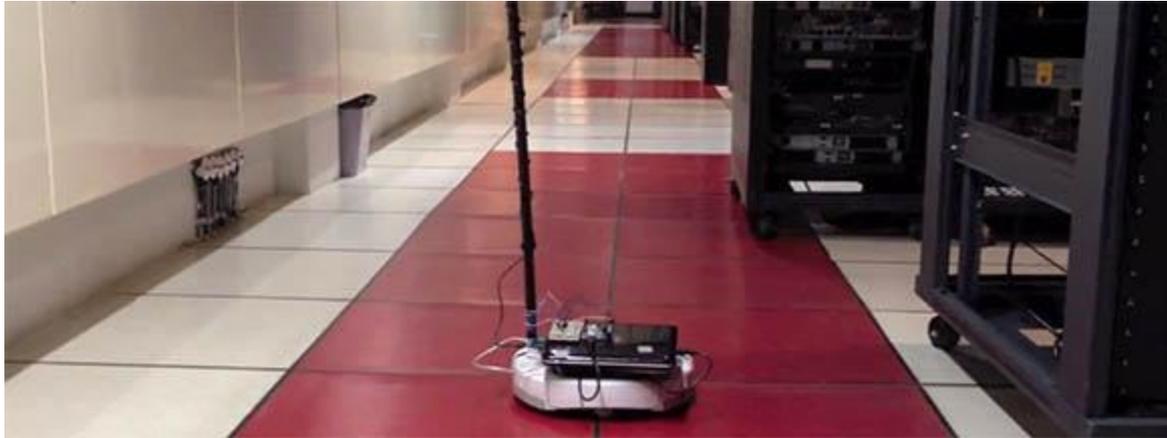

The Little Rover

P542 Spring 2013

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Sajith Sasidharan

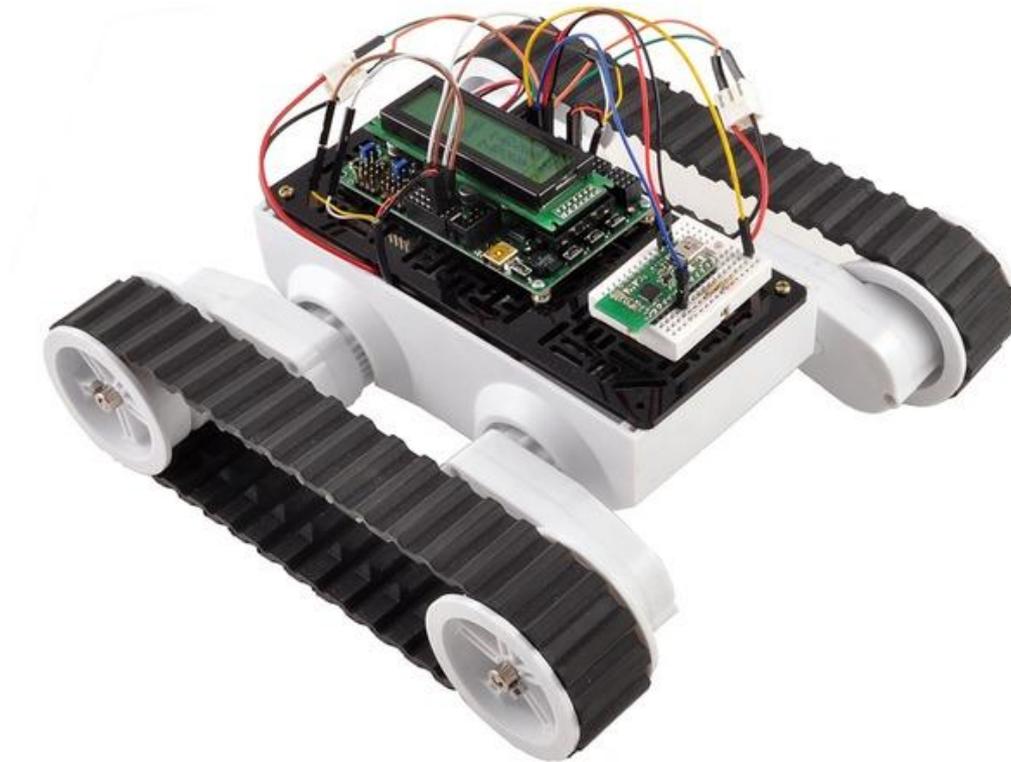
Motivation



"Roomba becomes data center robot"

<http://hackaday.com/2013/02/13/roomba-becomes-data-center-robot/>

An RC rover

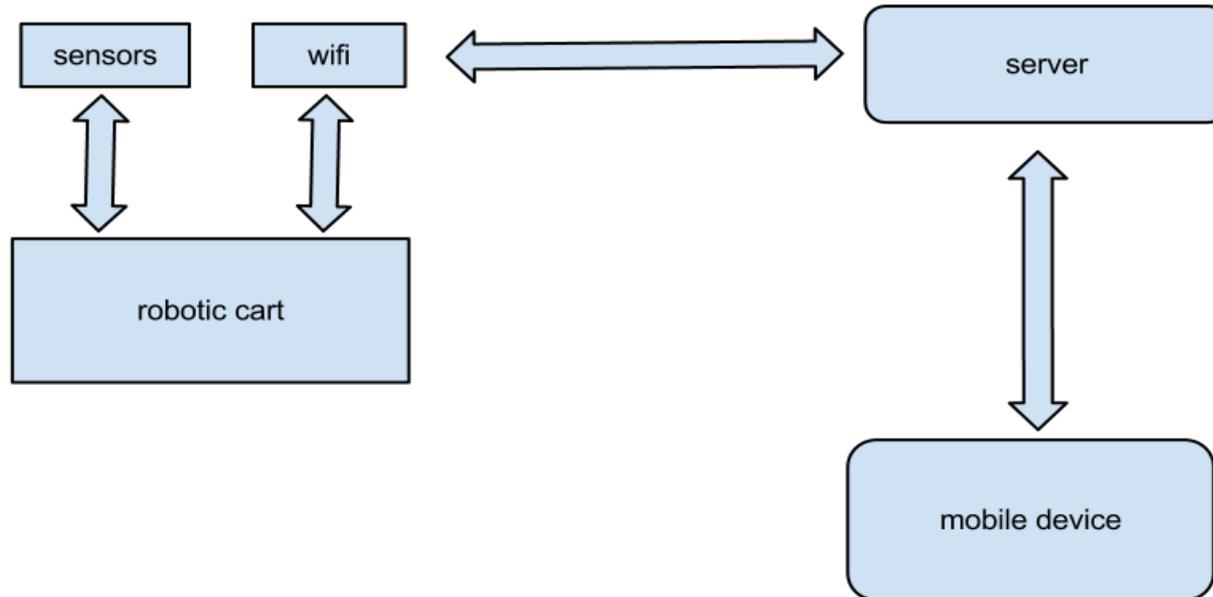


(image from <http://www.pololu.com/catalog/product/1550>)

Application

- "An indoor sentry"
 - that can "walk about" on nights and weekends in facilities such as:
 - data centers
 - campus buildings
 - Sense light/temperature oddities and...
 - Help manage power bill
-

Block diagram



The rover

- Must read ambient conditions
 - We'll just add a light sensor to start with

 - Must detect obstacles (walls, furniture, server racks...)
 - ... and should not bump against these things
 - ... and stop itself before hitting these things
 - We'll use a sonar sensor for this
-

The remote

- An Android application
 - Or a console client
 - Sends control commands to the rover
 - Receives rover status and sensor data
 - Uses wifi
-

The Server

- Mainly to decouple development
 - A "relay" between console client or mobile app and the rover
-

Milestones

Task	Dates
Software	
Mobile Application	03/04 - 03/22
Server Application	03/04 - 03/22
Design Communication Protocol	03/18 - 03/22
Implement Communication Protocol	02/25 - 03/01
Cart Control Algorithm (movements, safe halting)	03/04 - 03/22
Hardware	
Board Prototyping	03/18 - 03/22
Board Design	03/26 - 04/05
Order Components	04/01 - 04/02
Integration	04/08 - 04/19
Testing and Debugging	on going process

Thank you!
