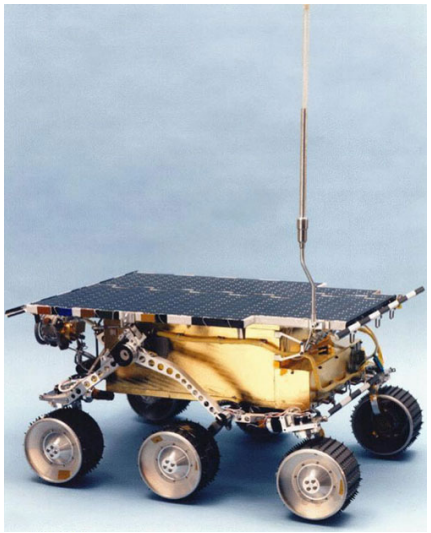
Talking to Robots with Pharo

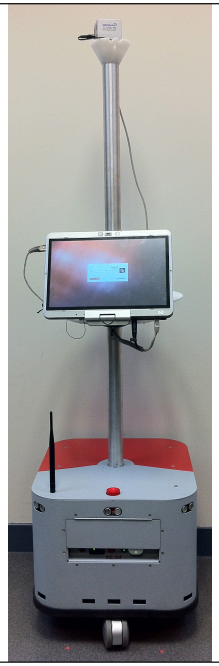
Noury Bouraqadi, Luc Fabresse, Jannik Laval
http://car.mines-douai.fr

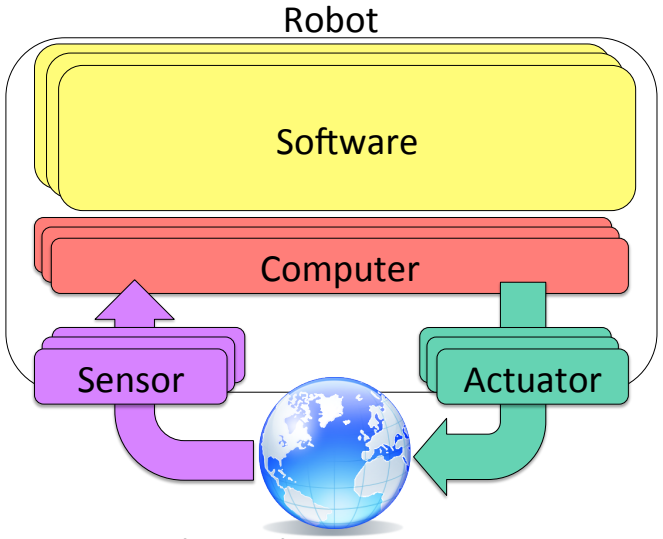
MINES Douai

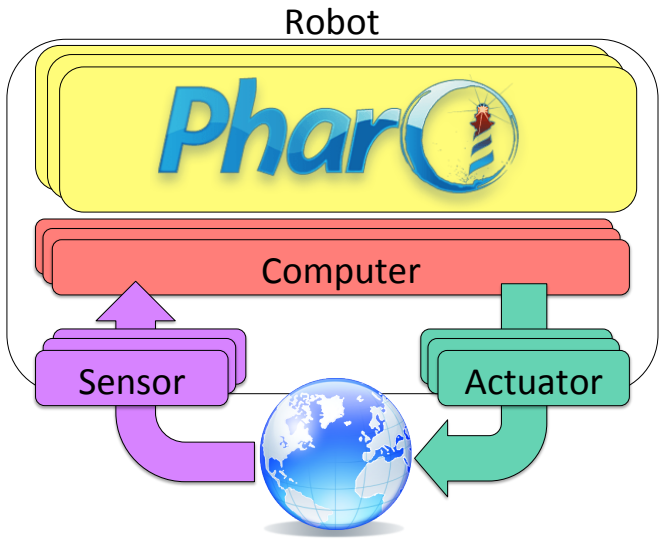
Current Robots



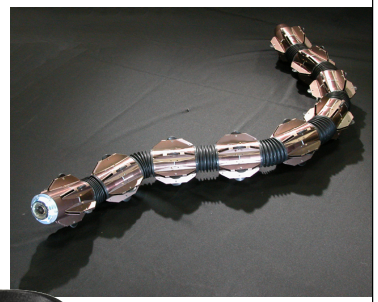
Robots at our lab







Multiple Kinds of Robots



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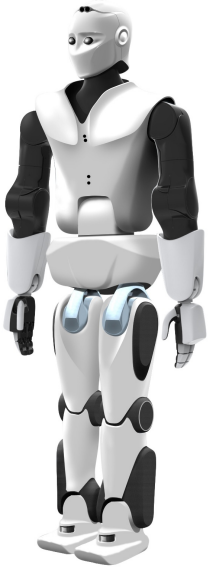


Multiple Kinds of Robots

Heterogeneity Challenge

- Different sensors & actuators
- Different shapes & sizes
- Different computing capabilities

Heterogeneity Challenge

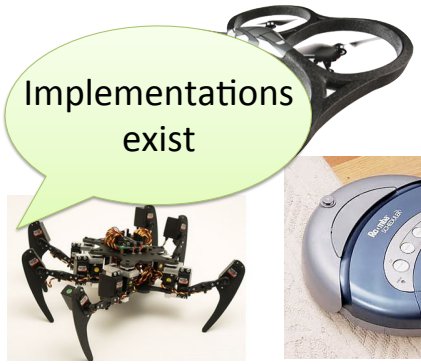
Different Drivers & Protocols

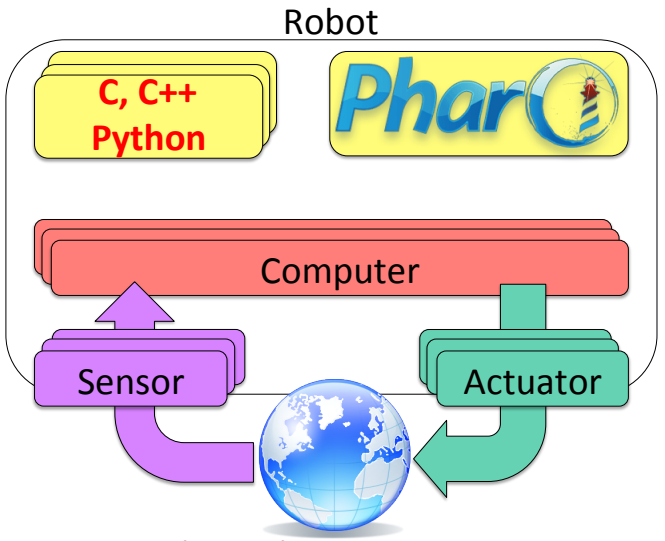
Different low-level algorithms

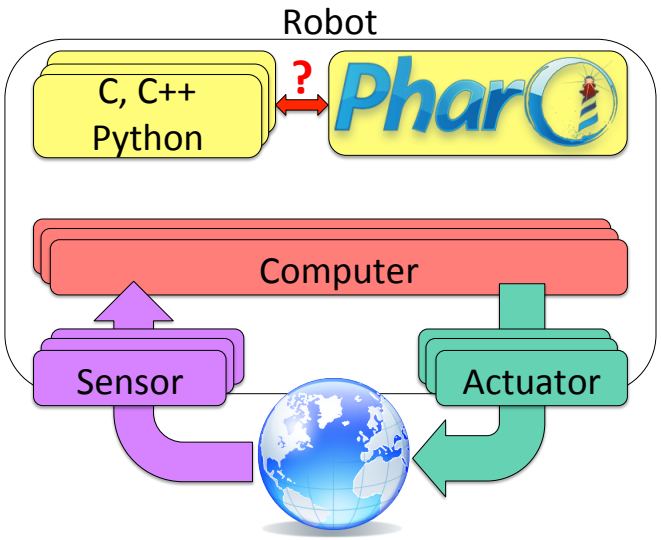
Heterogeneity Challenge

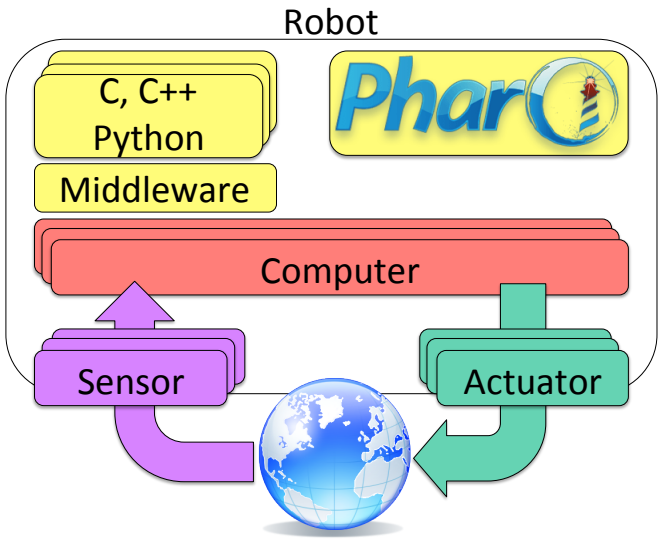
Different Drivers & Protocols

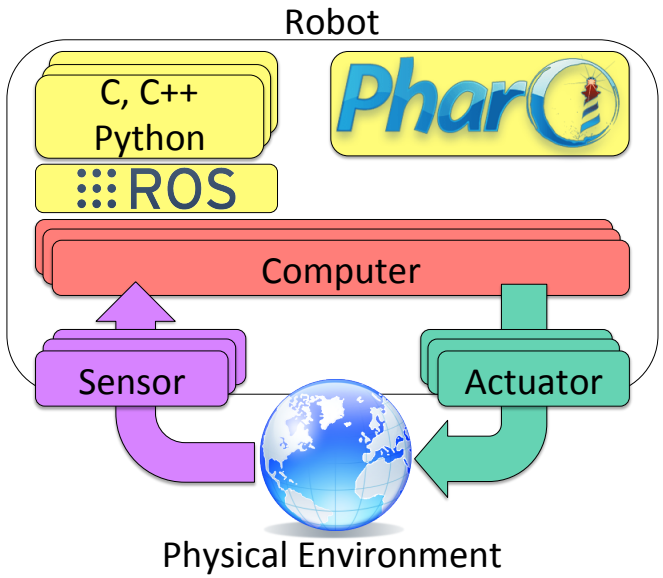
Different low-level algorithms

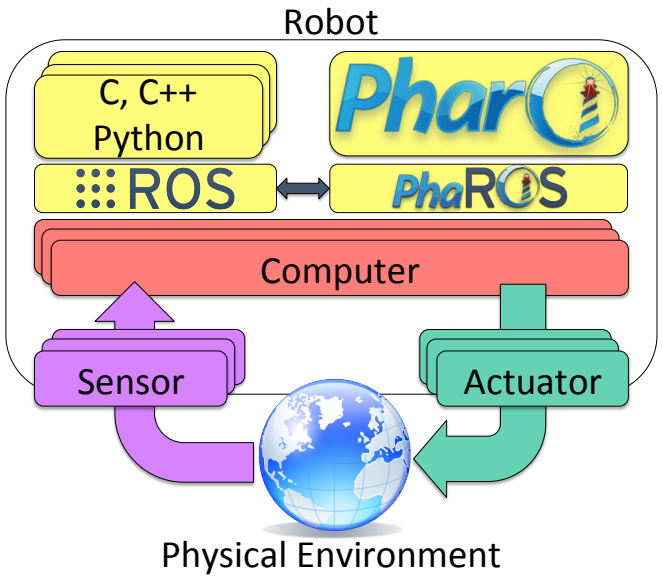












Robot Guide using PhaROS

- Museum
- Hospital
- Shopping Mall
- …

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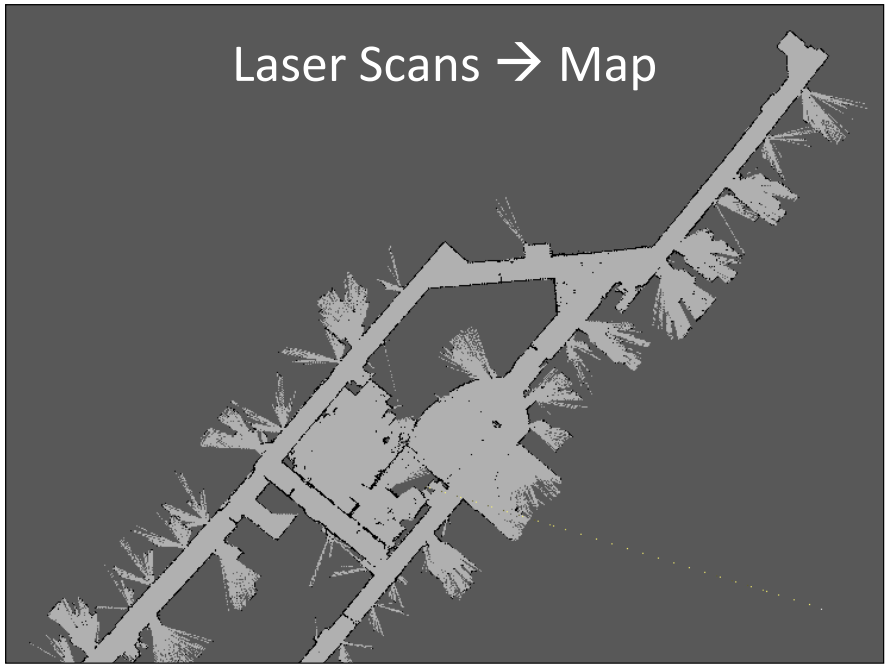
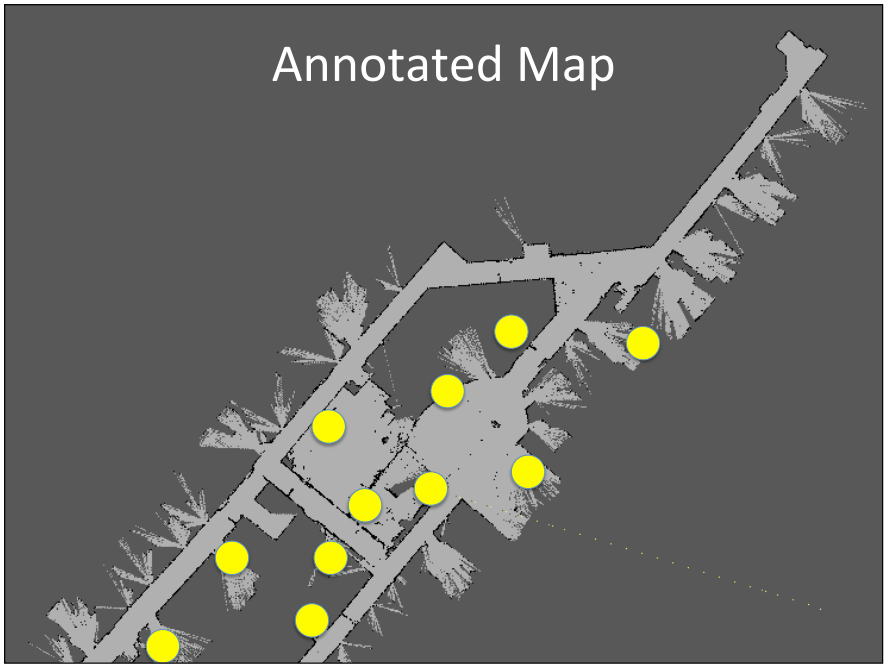
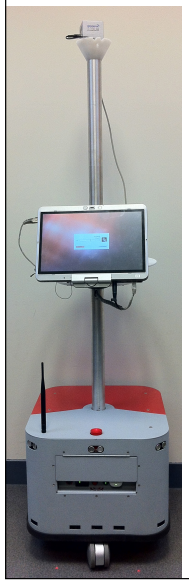




Robot Guide using PhaROS



Proprietary Software

Rangefinder | Odometer | Motor

Robot Guide using PhaROS

Path Planner

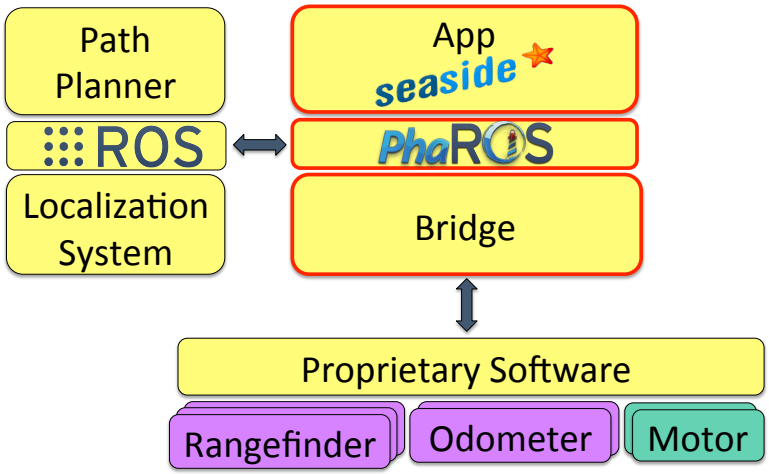
ROS

Localization System

Proprietary Software

Rangefinder | Odometer | Motor

Robot Guide using PhaROS



Talking to

with

Phar

Talking to

with

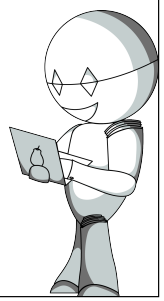
PhaROS

Talking to

with

phratch

(Talk Today)



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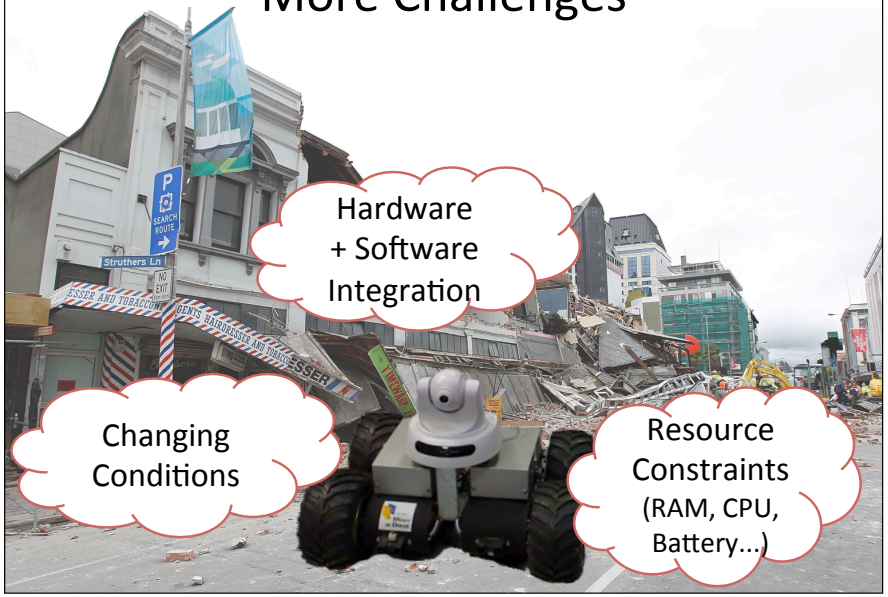
More Challenges

30

More Challenges



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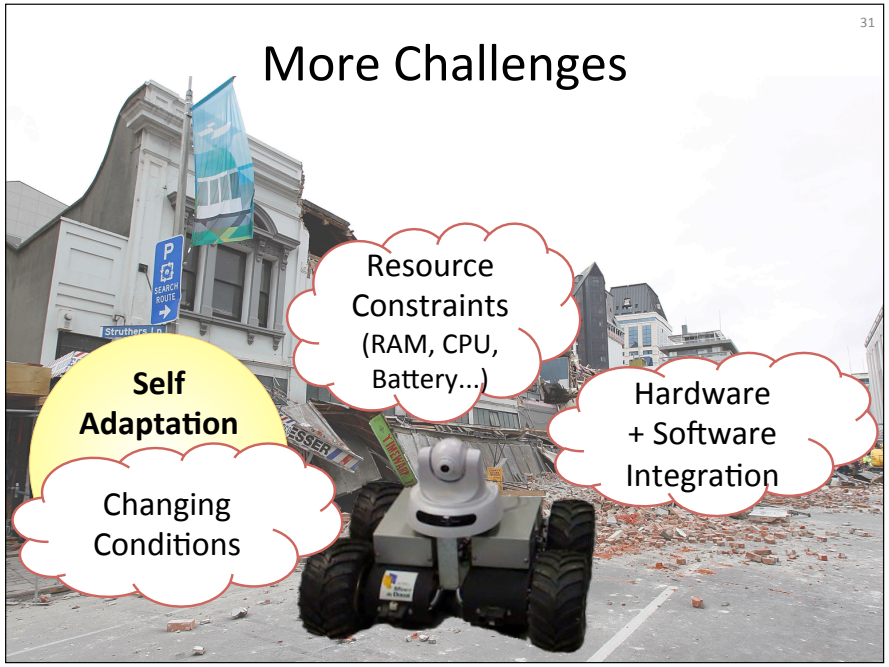
More Challenges



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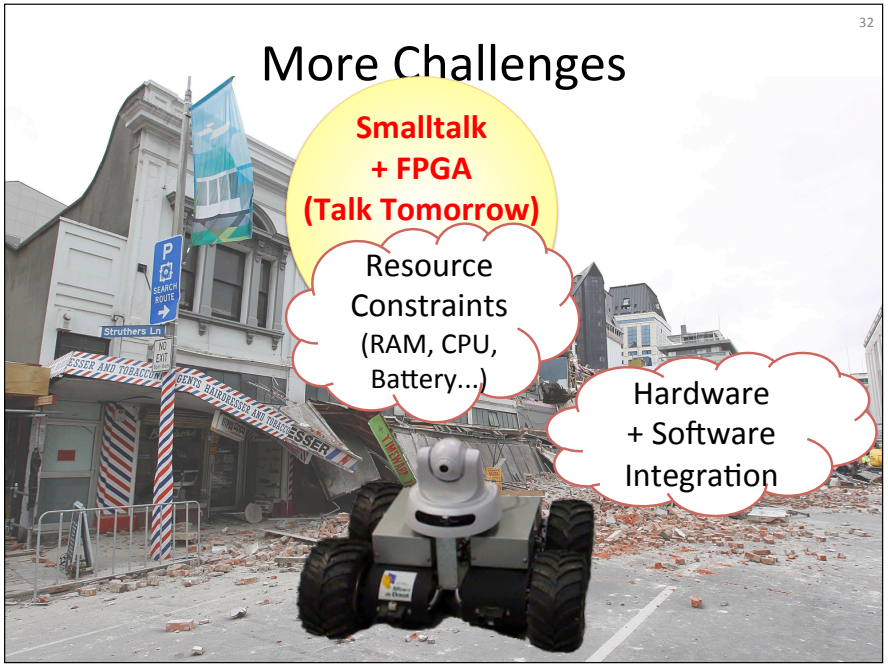

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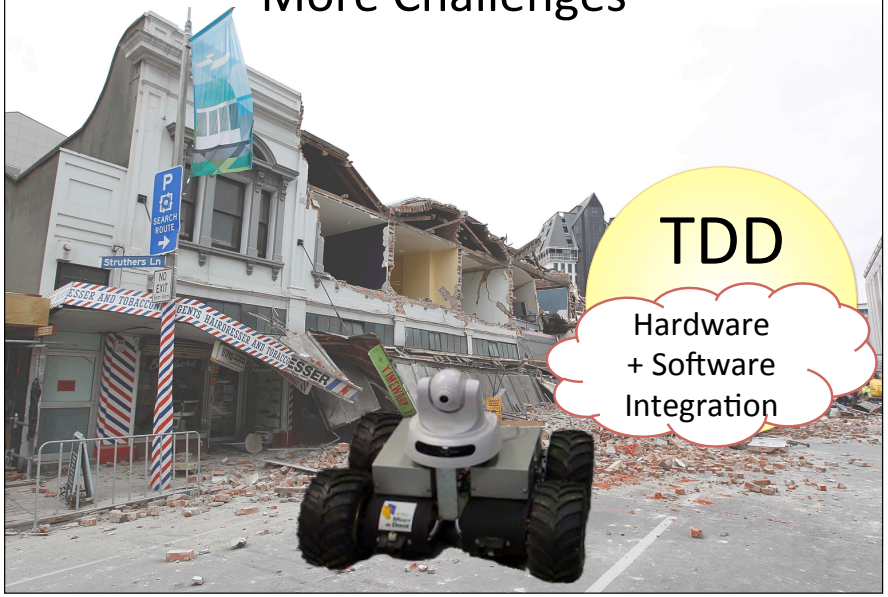

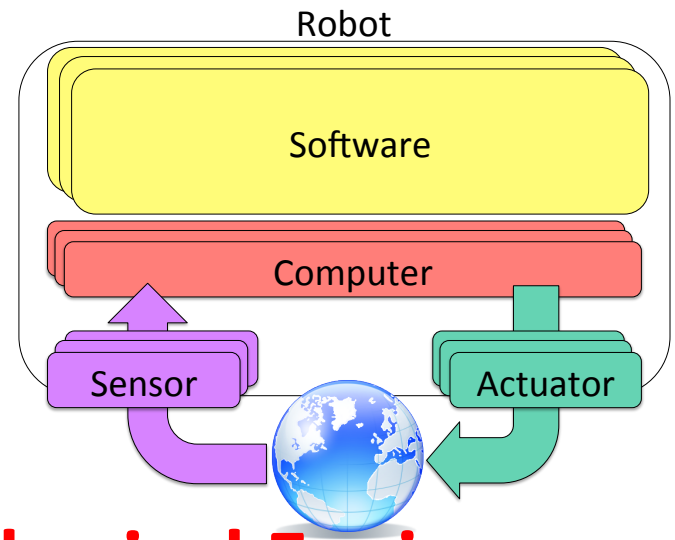

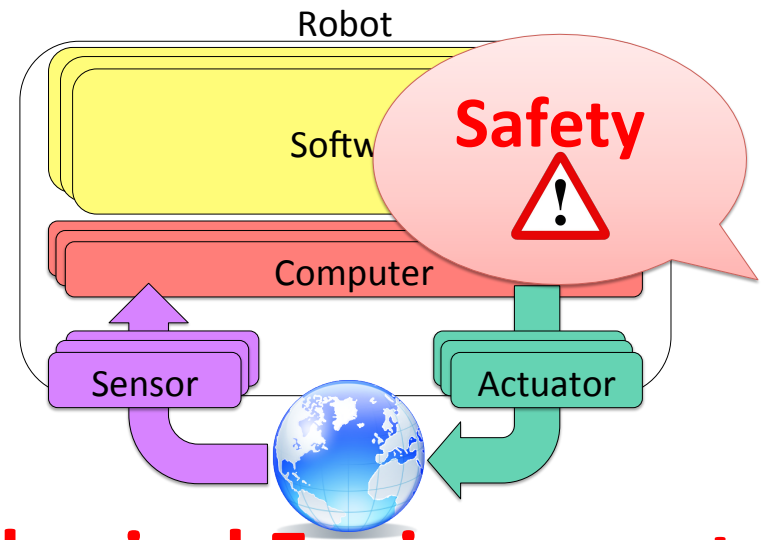

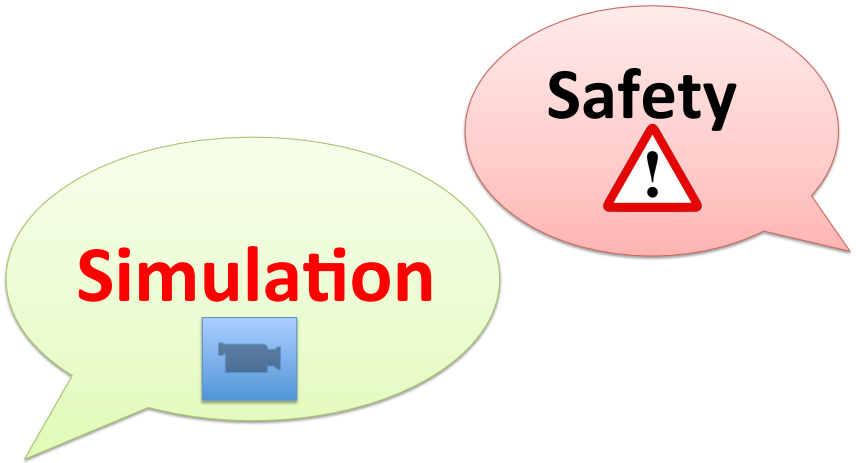

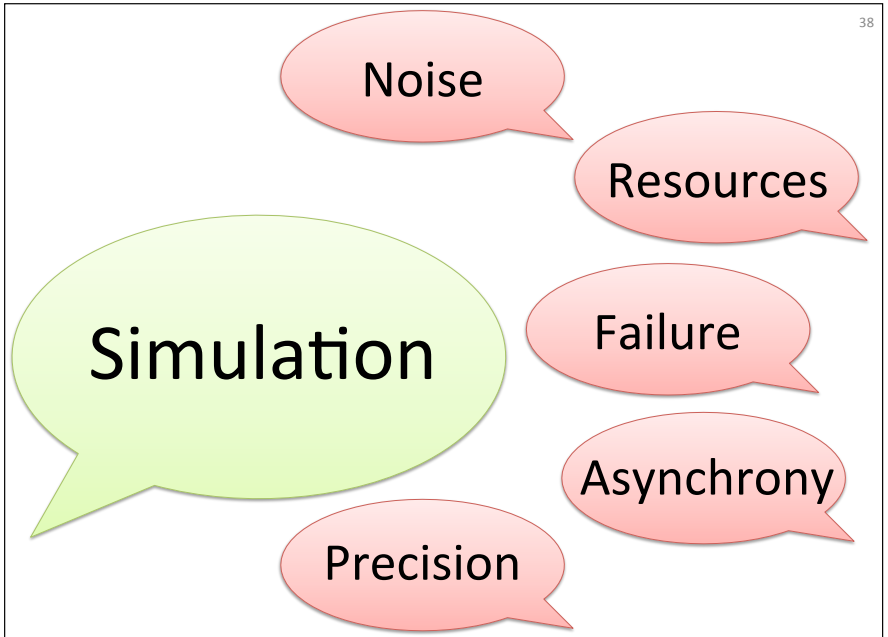

Methodology for Safe TDD

- Ensure emergency stop working!

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- Order tests
  - Sensors before actuators
  - Controlled environments before open ones
  - Static environments before dynamic ones

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BoTest Framework

the

Future

is

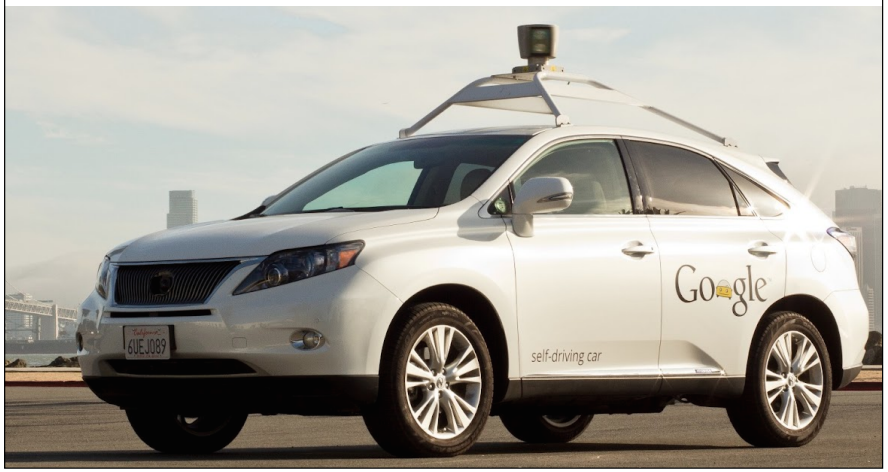
Robotics

Big Players Invest in Robotics

- Amazon Drones for Parcel Delivery

Big Players Invest in Robotics

- Google Self-Driving Car



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Let's make it with

Smalltalk

Talking to

with

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