

# Introduction to Robotics

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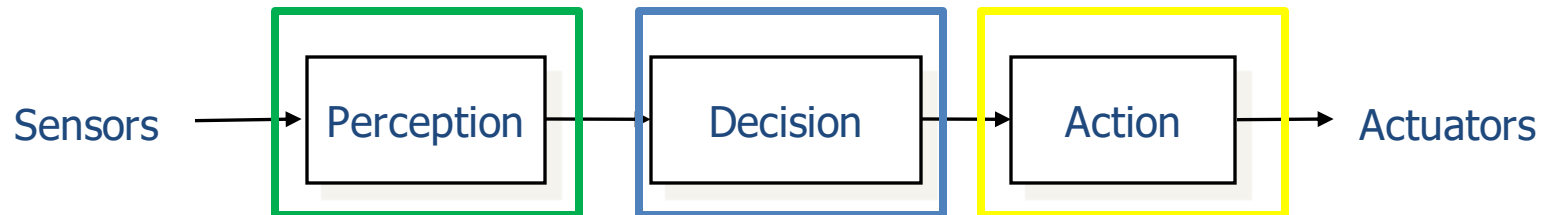
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# What is a robot ?

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**Robot** = mechatronic system with perception, decision and action skills, capable of carrying out *different tasks in the real world, in an autonomous way*.



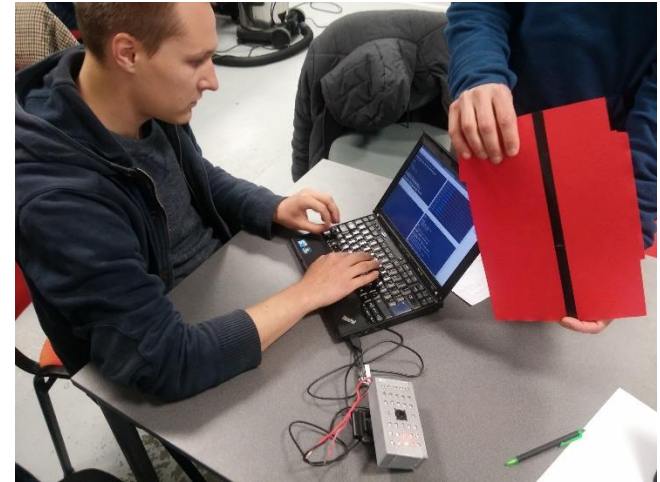
More informations available at:

<https://lig-membres.imag.fr/aycard/html/Enseignement/M1/Robotics/index.html>

# Organization(1/2)

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- 11 sessions:
  1. 4 sessions to introduce basic concepts (1h30 lecture + 1h30 lab);
  2. 2 advanced labs + report;
  3. 5 sessions to apply and « get in depth » these basic concepts on a practical project



- Design, develop and test software(/middleware) for a mobile robot application;
  - Patrol robot, follow me behavior, mobile distributor of coffee
- Customization of projects and robots is possible
- Projects will be done by groups of 4 students MAX
- One pre-configured laptop running ubuntu with ROS, given to each pair of students.

# Organization(2/2)

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- Advantages
  - No final exam
  - An intermediate report + Defense of project + Demo
  - Focus on implementation and test on real mobile robots: C/C++ or python
  - Learning by doing approach/Active approach
- Drawbacks
  - A complex middleware (ROS) to learn, understand and use
  - A basic prototype to implement and test in 4 weeks
  - An advanced prototype to implement and test in 6 weeks
  - A limited number of mobile robots

# Contacts

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