

UNIVERSITÀ  
DEGLI STUDI  
DI PADOVA

パドヴァ大学

# INTELLIGENT ROBOTICS

A.A. 2024-25

prof. Emanuele Menegatti



DIPARTIMENTO  
DI INGEGNERIA  
DELL'INFORMAZIONE

INTELLIGENT AUTONOMOUS SYSTEMS LAB



# What is a robot?



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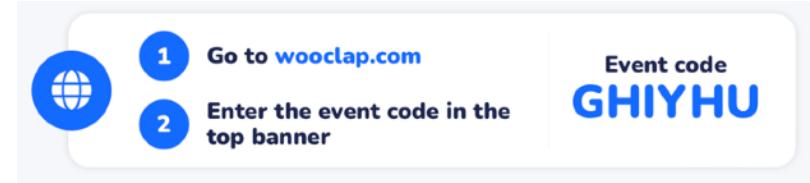
WHAT IS A ROBOT?

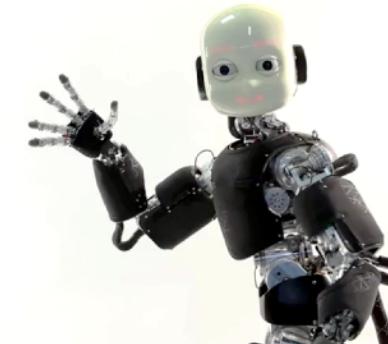
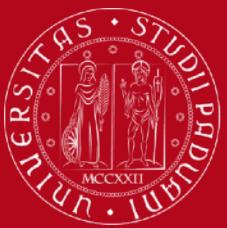
IAS-LAB



Which robots do you know?

How would you define a robot?





The word “robot” comes from the Czech proper name “Robot”, in turn coming from “robita” (hard work), with which the playwright [K. Čapek](#) called the “automatons” (i.e. artificial creatures) working in place of the human workers in his sci-fi theatre play R.U.R. (1920).

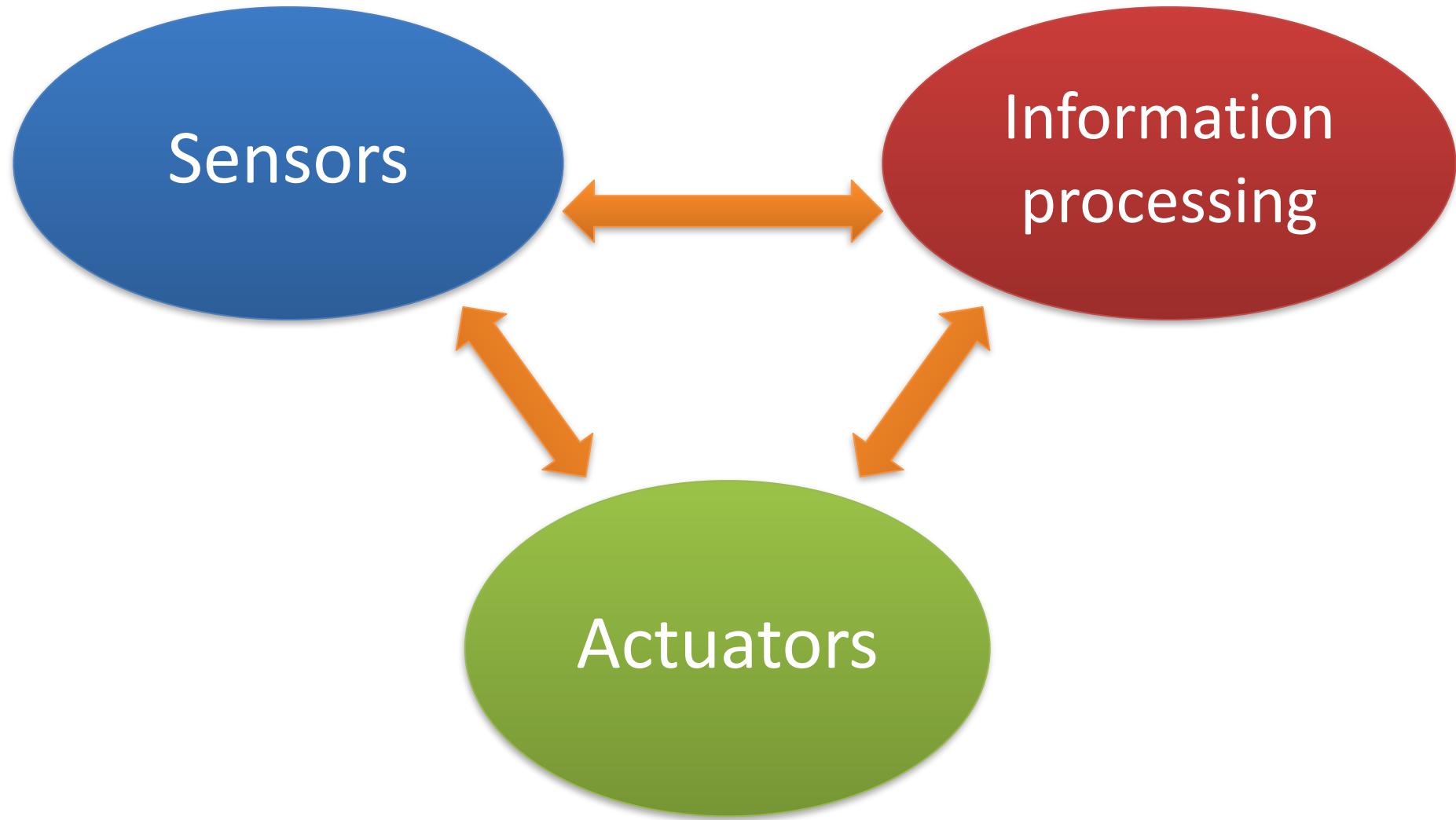


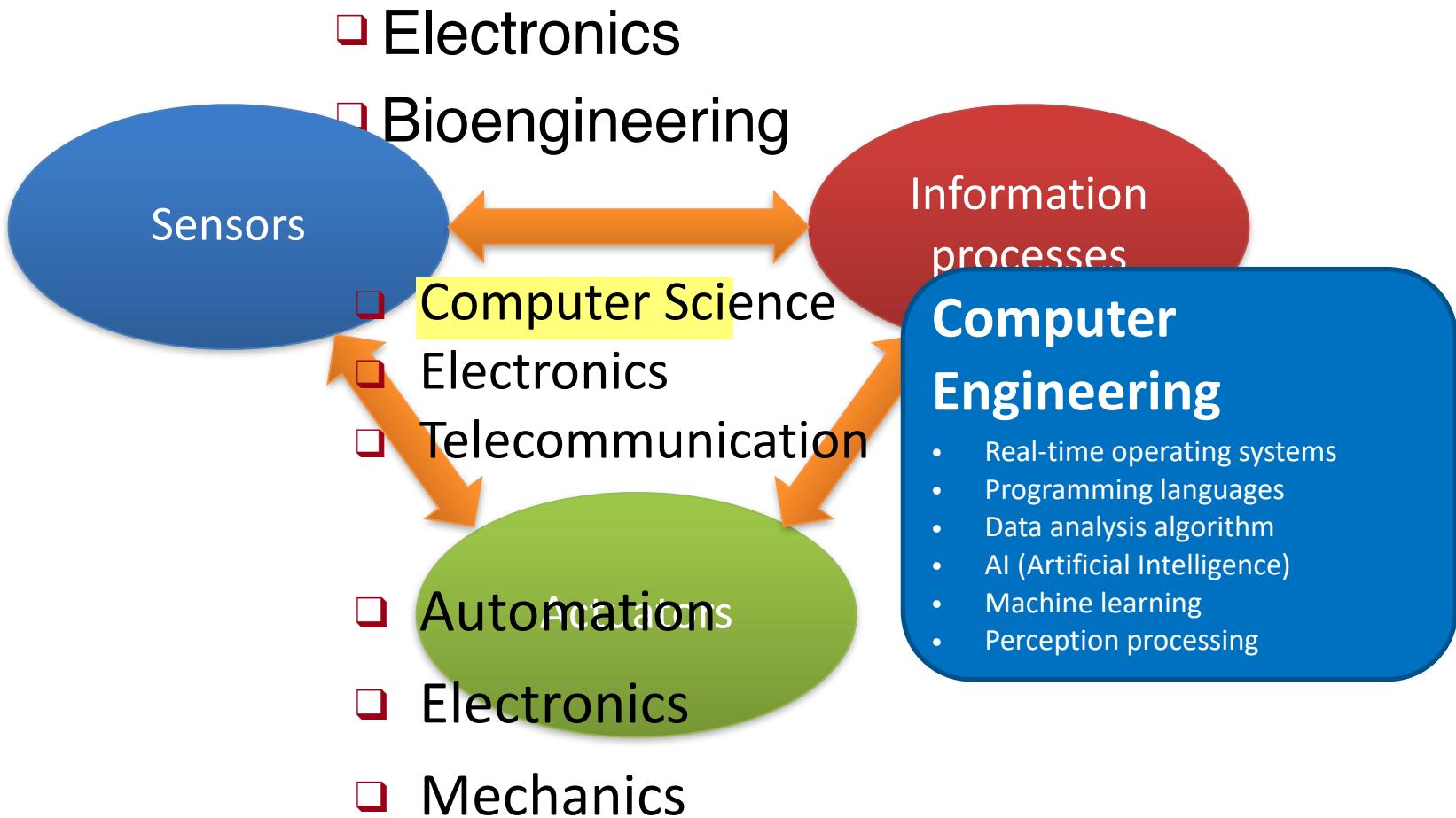
## Standard ISO 8373:2012:

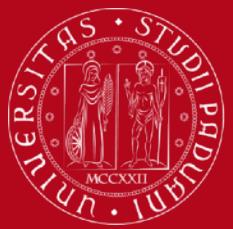
*“A robot is an actuated mechanism programmable in two or more axes with a certain degree of autonomy, moving within its environment, to perform intended tasks.”*

Generally speaking, a robot is an object able to move in space, with at least some actuators and some sensors, capable of being programmed in some way.









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ROBOT TO STUDY AND PLAY

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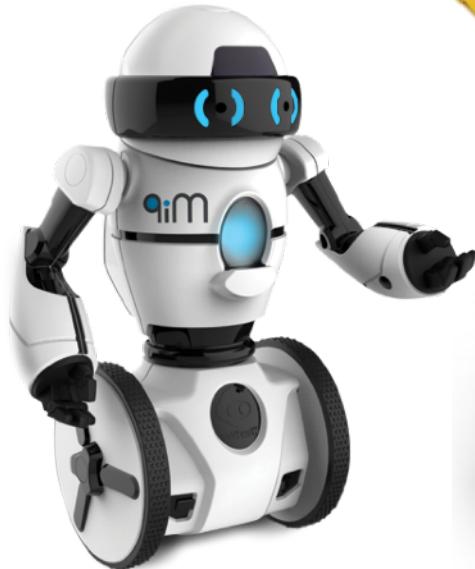
Beebot



Mind

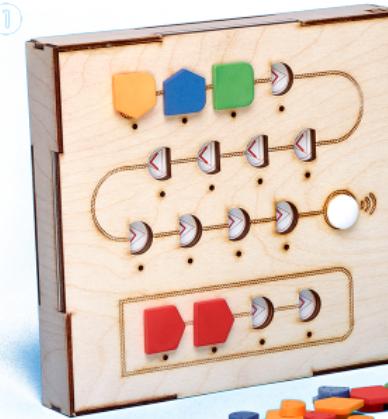


Pro - Bot



ASEBA Thymio 2

①



Cubetto

LEGO EV3





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DOMESTIC ROBOTS

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**Roomba**  
**(40 million pieces!!!)**



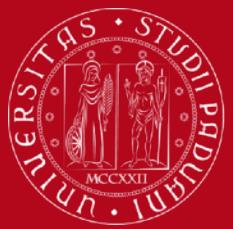
**Looj: the gutter cleaner**



**Pool cleaner**

**Lawn  
mower**





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# PERSONAL ROBOTS



Zembo (Asus)



QRIO (Sony)



AIBO (Sony)



Heart moving phone

# RoBoHoN

Play video on YouTube





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# HUMANOIDS... AND ANDROIDS

Some examples

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Geminoids



For example:  
Transport of humans



Autonomous driving



Esoskeleton



Personal means of  
transportation

