



Robot Autonomy

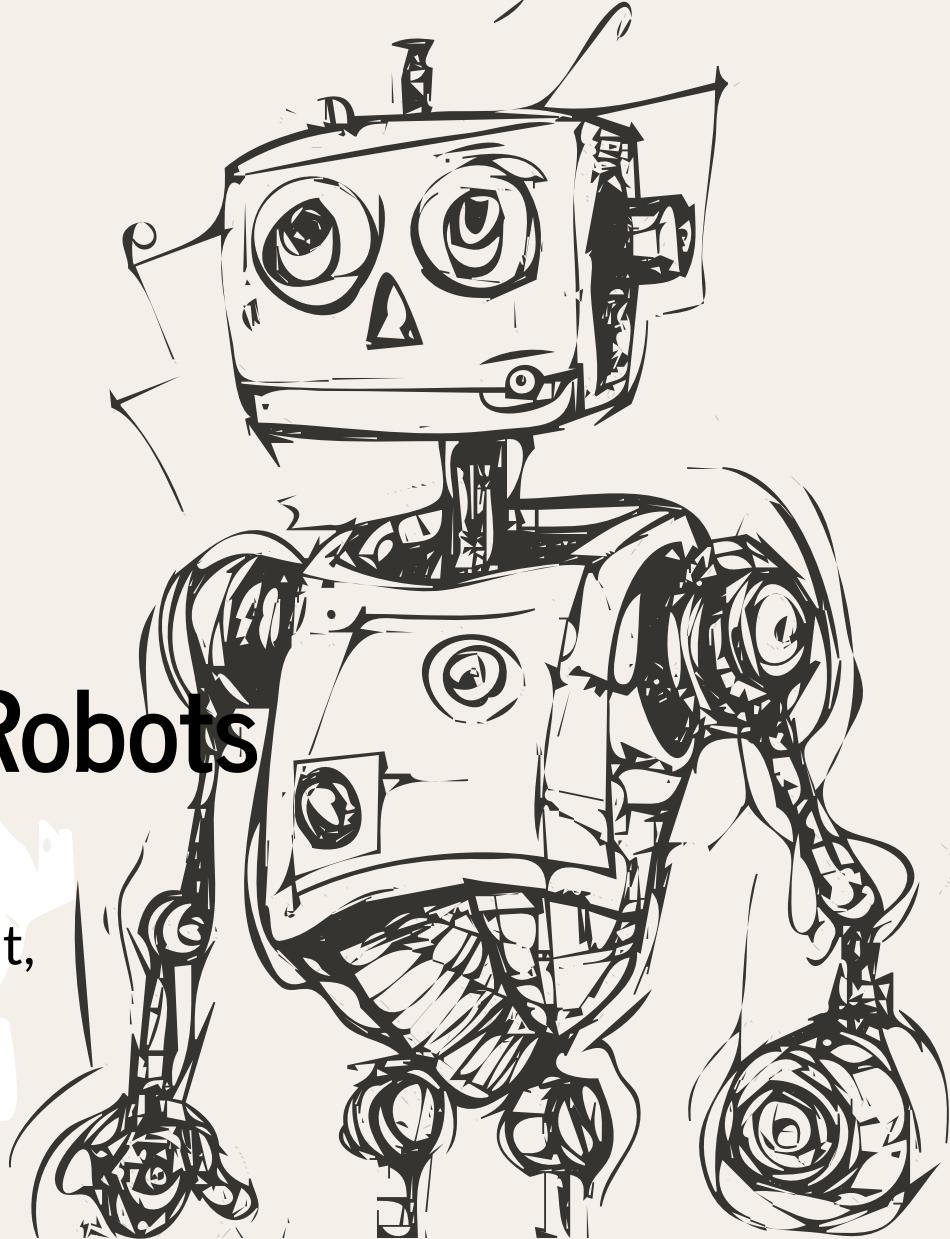
Autonomous and Intelligent Robots

Student: Sergio Jácomo

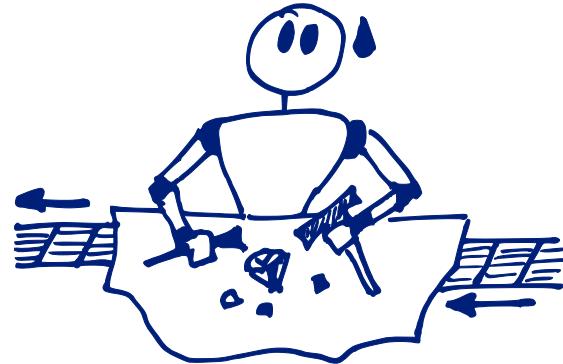
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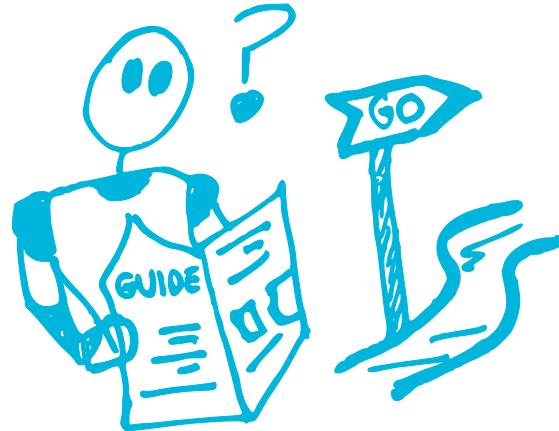
Oct. 8 2024



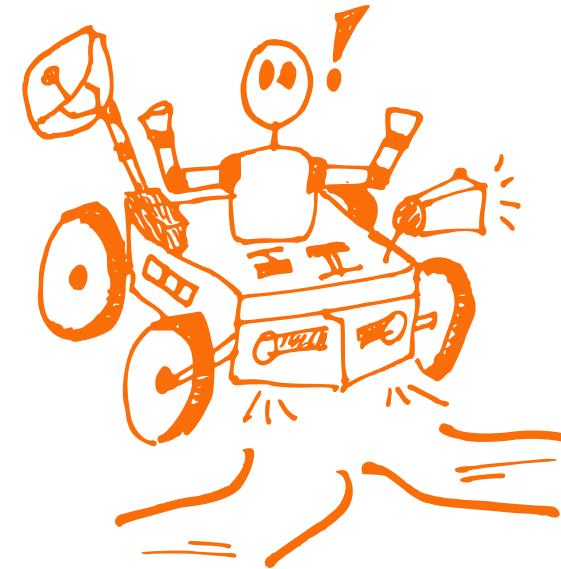
Key ideas



One, two, three ...
again



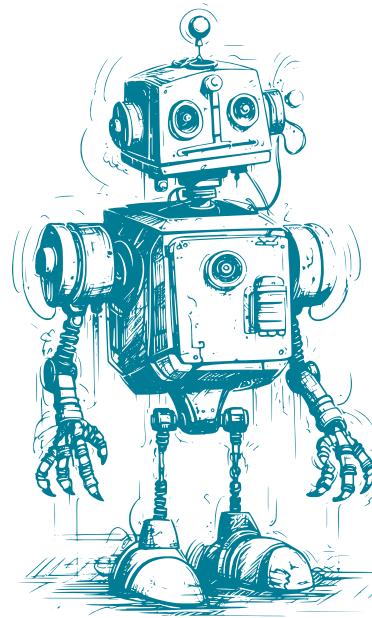
Where should I go?



Is there any life
waiting to be
discovered?

What does autonomy mean in robotics?

A draft meaning



Exploring the surface of an unknown planet

The ability to perform specific tasks without
“human intervention” in a known working
environment.

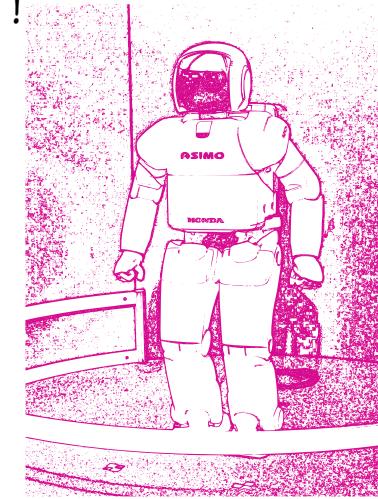
A draw of a robot generated with AI in Freepik

Should a robot be autonomous?

Yes, of course !!!

Why?

- ∴ Minimize workload and maximize productivity.
- 🚫 Perform continuous tasks even without constant human supervision or communication.



ASIMO (2000) at the Expo 2005 from Wikipedia

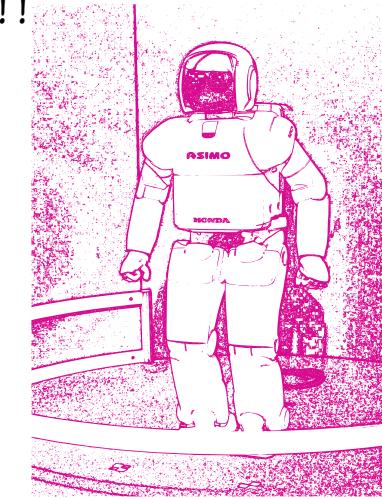
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Yes, of course !!!

Why?

How?

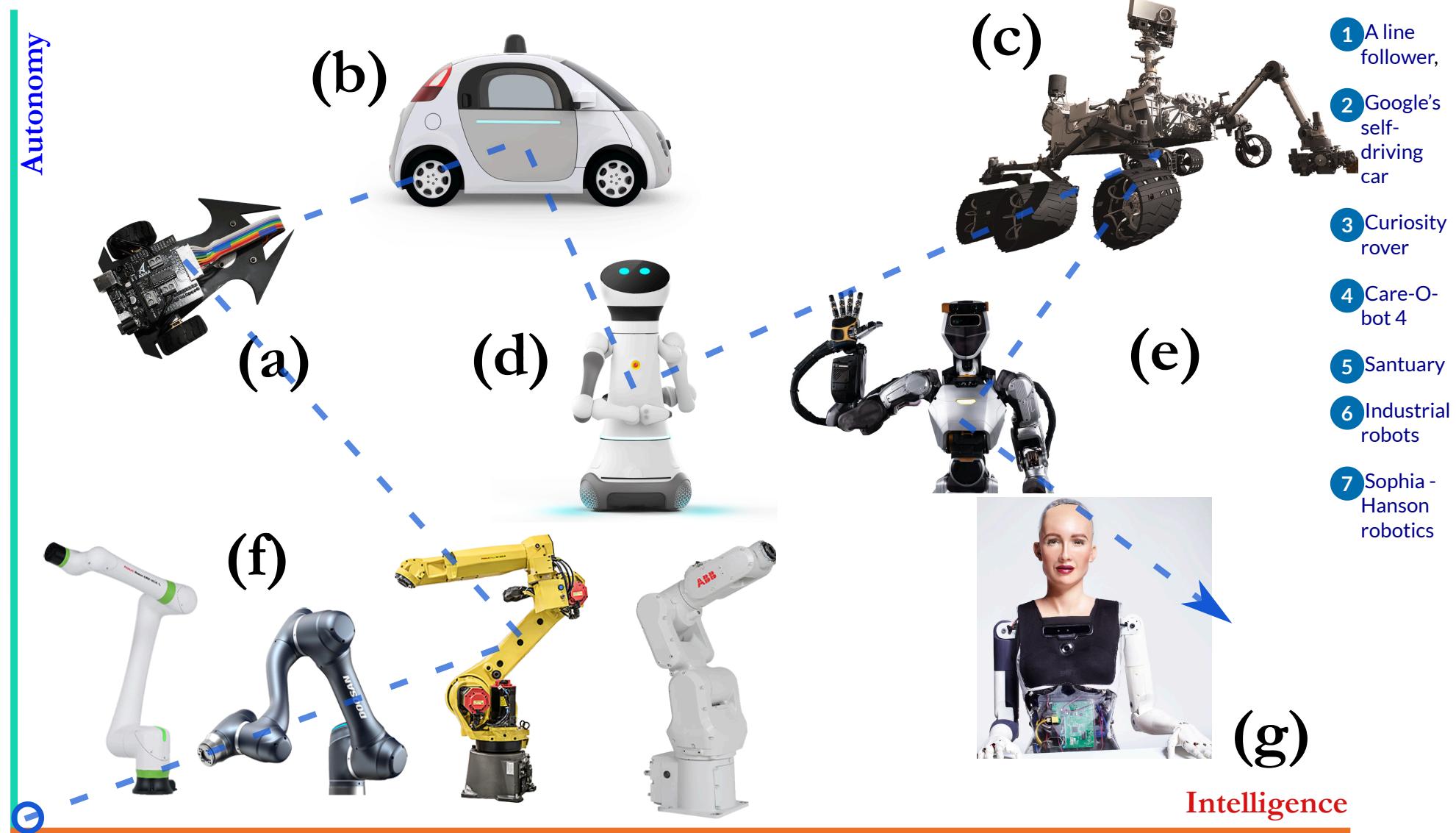
- ⚙️ Ability to make decisions based on sensor data.
- 🤖 Interact with the environment through manipulation or communication.



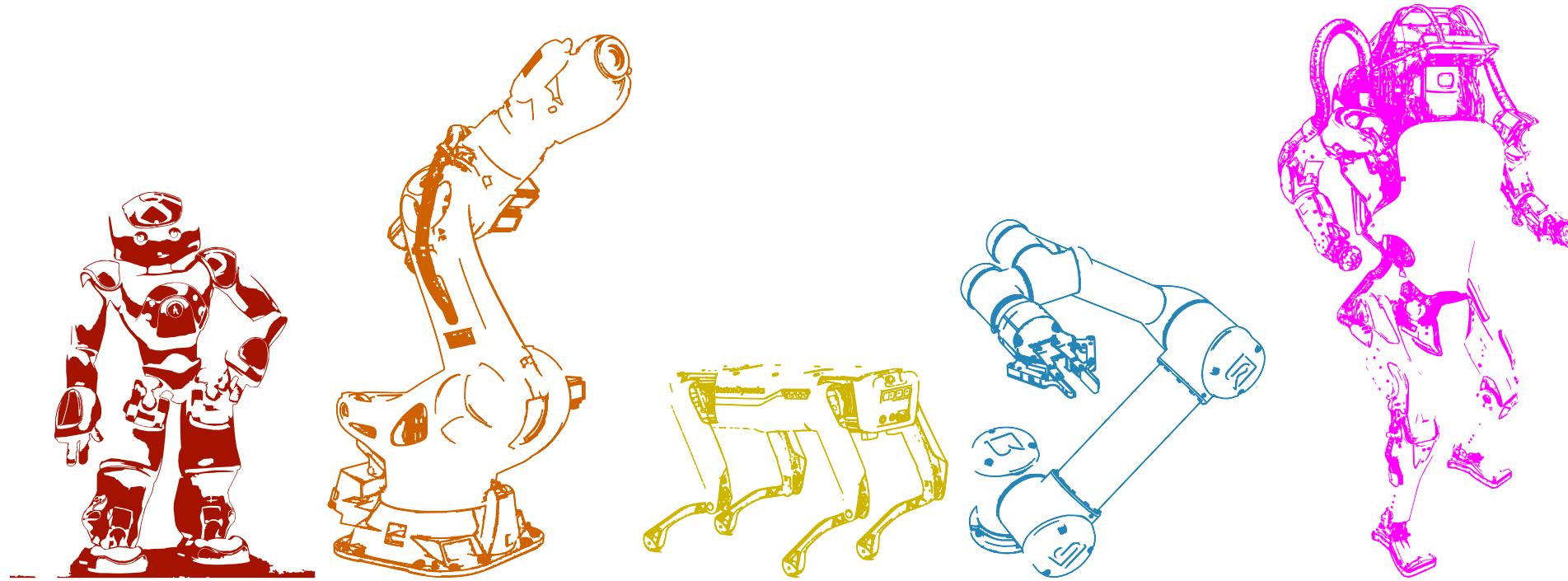
ASIMO (2000) at the Expo 2005 from Wikipedia

What robots exist today?

State of the art



Commercial robots today



Nao robot, Kuka robot arm, Spot mini dog, UR5 Cobot y Atlas robot

Effects of high-level autonomy on society

- Social
 - Changes in human-robot interaction, particularly in customer service.
- Politics
 - Regulation and governance. Preventing tech. from being misused.
- Education
 - Change in required professional skills.
- Industry
 - Increase in efficiency and productivity.
- Ethics
 - Moral responsibility. Decisions without human intervention?

- 🔗 Slides based on emitanaka.org/slides/Ihaka2022/
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