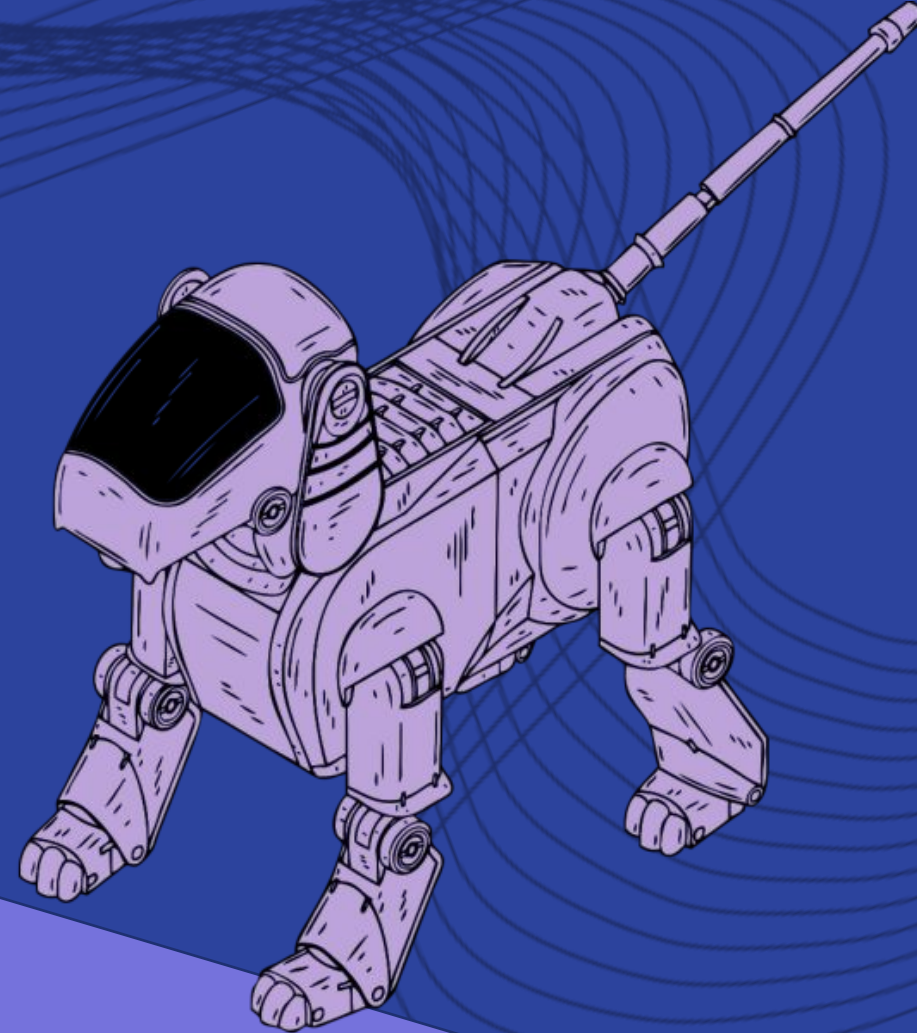


Introduction to Robotics

Level 1 – Robotics



Introduction

What is robotics?

Robotics is a branch of AI and computer science which is composed of electrical engineering, mechanical engineering and programming.

Robotics deals with the design, construction, operation, and use of robots, as well as computer systems for their control, sensory feedback, and information processing.

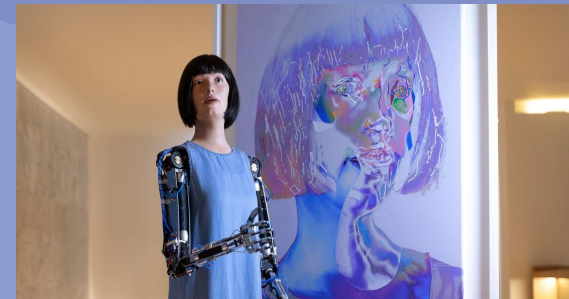
Examples of Robotics

Artificial Intelligence is becoming more and more common in our everyday lives!



Environment

One more recent example of how robotics is helping the environment is in the Team Seas project that some social media influencers started late last year. This robot helps filter rubbish out of rivers and is fully automated using AI and robotics systems (and is powered completely by clean solar energy)



Arts and Creativity

Industrial robots are used globally in manufacturing because it takes the danger out of sometimes hazardous production processes. For example, car welding (or the manufacturing of car parts) is a common example of where these industrial robots can efficiently perform safe repetitive functions and tasks.



At Work

Ai-Da is an example of where robotics is becoming more of an important part of the artistic world. She is a life-size android artist powered by AI, capable of creating her own paintings and sculptures.

Examples of Artificial Intelligence

Artificial Intelligence is becoming more and more common in our everyday lives!



Helping Others

Robotic **prosthesis control** is a method for controlling a prosthesis in such a way that the controlled robotic prosthesis restores a biologically accurate gait to a person with a loss of limb.

Research and advancements in robotics have led to massive stride in prosthetic development, meaning amputees can regain some autonomy.

As we get deeper into the 21st century, it's impossible to talk about technology without mentioning robots for the smart home. And why would we when those robots can help make our homes cleaner, healthier and better for our families? Virtual reality is in our living rooms, health trackers are in our bedrooms, and voice assistants are ... everywhere.

Robots can help assist in daily chores, which is excellent for people with limited mobility or time. For example, Roombas, the automatic vacuum cleaning robots.



At Home

The Advantages of Robotics

- In many situations, robots can increase productivity, efficiency, quality and consistency of products.
 - Unlike humans, robots don't get bored
 - Until they wear out, they can do the same thing again and again
 - They can be very accurate which can be important in the manufacturing of microelectronics
- Robots can work in environments which are unsafe for humans – in the nuclear and chemical industries for example
- Robots don't have the same environmental requirements that humans do – such as lighting, air conditioning or noise protection
- Robots have some sensors/actuators which are more capable than humans

The Future is Robotics!

Where is robotics going?

The robotics industry is expected to grow significantly over the coming years. Estimates suggest that the sector could be worth as much as \$260 billion by 2030.



Conclusion

Learning outcomes

- ✓ Understand what robotics is
- ✓ Understanding the impact of robotics in our everyday lives
- ✓ Explore the future applications of robotics

Congratulations!
You have completed this resource

