

# AI in Robotics

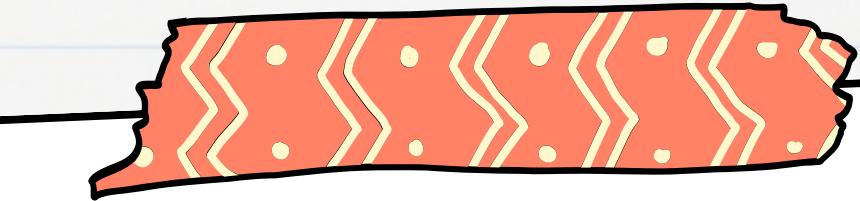
Exploring the Evolution and Impact of  
Artificial Intelligence on Robotics

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# Overview

- Introduction
- What is Artificial Intelligence
- What Are Robotics
- AI and Robotics
- AI Techniques In Robotics
- Application
- Conclusions





# Introduction

## General concepts

- Artificial Intelligence (AI) and Robotics represent two dynamic fields at the forefront of technological advancement.
- As AI continues to evolve, its integration with robotics has led to groundbreaking innovations, empowering machines with the ability to perceive, learn, and adapt to their environments.



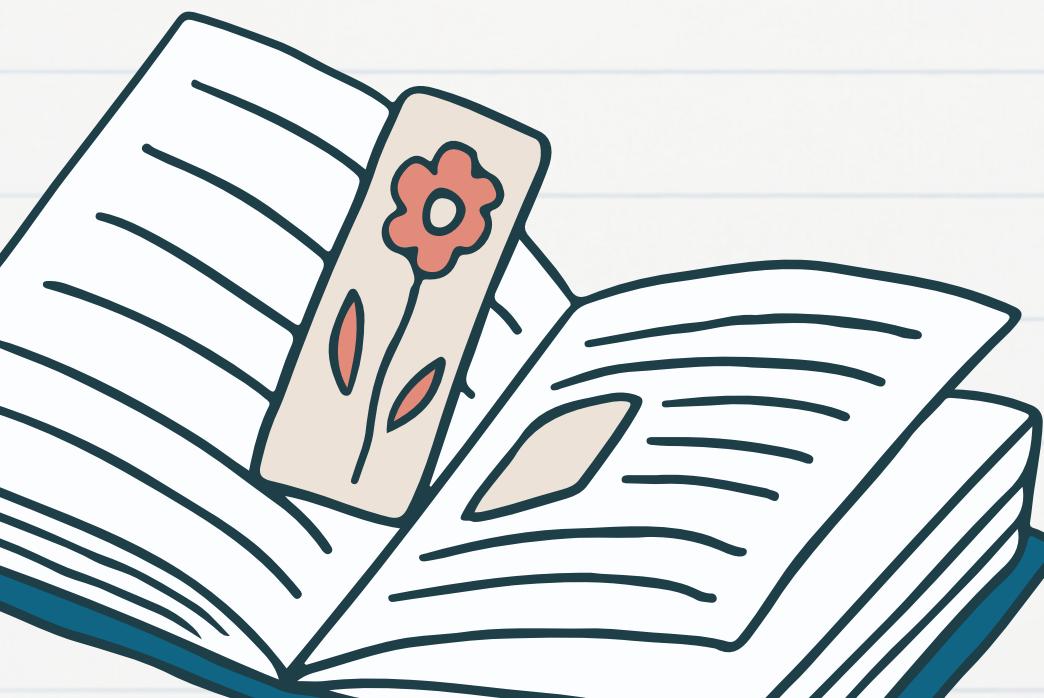
# Artificial Intelligence?

- Computers simulating human intelligence
- AI enhances human abilities
- AI automates tasks, enabling independence
- AI learns and evolves continually



# Robotics?

- Machines performing tasks autonomously
- Field of engineering involving robots
- Creation and study of autonomous machines
- Interdisciplinary field merging mechanics, electronics, and software



# AI & Robotics

- AI and Robotics merge advanced algorithms with mechanical systems
- Robots empowered with cognitive abilities through AI
- Revolutionizing industries like manufacturing and healthcare
- Key AI technologies enhance robotic perception and autonomy
- Future promises advancements in human-robot collaboration
- AI-Robotics synergy boosts efficiency and safety



# AI Techniques In Robotics

**Machine Learning**  
Algorithms enable robots to learn from data and improve performance without explicit programming.

## Computer Vision

Vision systems allow robots to perceive and understand their environment through image processing and analysis.

## NLP

Enables robots to understand and respond to human language, facilitating interaction and communication

# Application

## Industrial Automation

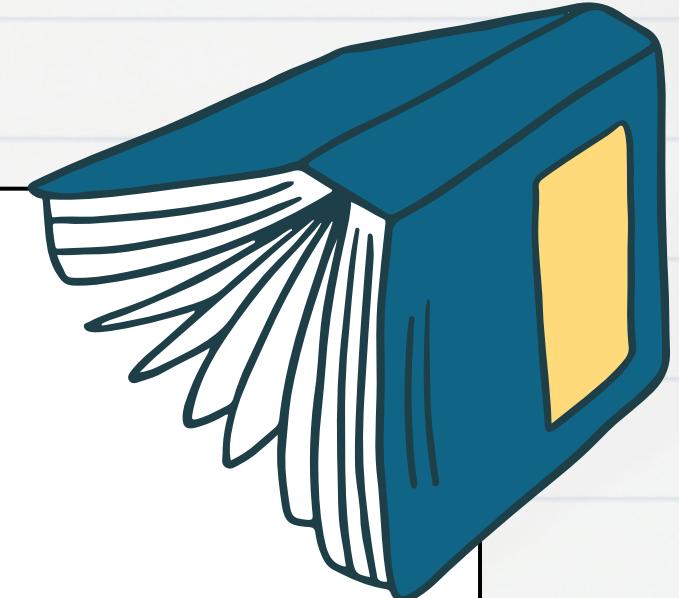
AI-powered robots perform tasks such as assembly, welding, and packaging in manufacturing facilities, improving efficiency and precision.

## Health care Robotics

Robots assist with tasks like surgery, patient care, and rehabilitation, enhancing medical outcomes and reducing human error.

## Agriculture Robotics

AI-driven robots automate tasks such as planting, harvesting, and monitoring crops, optimizing agricultural processes and increasing yield.



# Conclusions



The integration of AI in robotics promises transformative advancements across various industries, enhancing efficiency, safety, and human-machine collaboration.

As we continue to explore the intersection of AI and robotics, it becomes evident that intelligent machines have the potential to revolutionize our daily lives and redefine the future of work and technology.



With ongoing research and innovation, the synergy between AI and robotics holds great promise for addressing complex challenges and creating opportunities for a more connected and intelligent world.

# Thank You

