

Machine Learning

Machine Learning is a method that allows computer systems to learn patterns from data.

Instead of programming explicit rules, models learn relationships between inputs and outputs.

Example:

Machine sensor data → Machine Learning model → Failure prediction.

Computer Vision

Computer Vision refers to technologies that allow computers to interpret images and videos.

Industrial applications include:

- automated quality inspection
- object detection
- robot navigation

AI in Industrial Robotics

AI enables robots to operate more flexibly in dynamic environments.

Collaborative robots can safely interact with human workers.

Examples:

- assembly assistance
- packaging operations
- material transport

AI Pipeline

The development of an AI system typically involves several stages.

1 Data collection

2 Data preparation

3 Model training

4 Model deployment

5 Continuous monitoring

Importance of Data

High-quality data is essential for reliable AI models.

Important factors include:

- sufficient data volume
- accurate labels
- consistent data collection