

Artificial Intelligence (AI) Overview

Definition: Artificial Intelligence (AI) refers to computer systems that perform tasks requiring human-like intelligence — including learning, reasoning, perception, and decision-making.

Pillars of AI

Machine Learning	Algorithms that learn from data and make predictions or decisions.
Deep Learning	A subset of machine learning using artificial neural networks.
Natural Language Processing	The ability for machines to understand and generate human language.
Computer Vision	Enabling machines to interpret and analyze visual information.
Robotics	The design and use of intelligent, autonomous systems.

Strengths

- Speed and scale of data processing
- Consistency and precision
- Continuous learning and improvement
- 24/7 availability
- Enhanced decision-making support
- Automation of complex or repetitive tasks

Weaknesses

- Dependence on data quality and quantity
- Lack of true understanding or common sense
- Limited generalization (narrow AI focus)
- Ethical and privacy concerns
- High computational and energy requirements
- Potential for job displacement

Summary: Artificial Intelligence enables machines to replicate aspects of human intelligence through data-driven algorithms. Its power lies in speed, precision, and automation — but it remains limited by data dependence, ethics, and a lack of genuine comprehension.