

1.2 History and applications of AI

History of Artificial Intelligence

The development of AI happened over several key phases:

1.Early Foundations (1940s–1950s)

AI ideas began with mathematicians and scientists.

Alan Turing proposed the Turing Test (1950) to check machine intelligence.

First computers were developed, laying the foundation for AI.

2.Birth of AI (1956)

The term Artificial Intelligence was coined at the Dartmouth Conference by John McCarthy.

AI officially became a research field.

Early programs could solve math problems and play simple games.

3.Early Success and High Expectations (1956–1970)

Researchers built programs for logic, reasoning, and game playing.

Example: ELIZA, one of the first chatbots (1960s).

4.AI Winter (1970s–1980s)

Progress slowed due to limited computing power and high costs.

Funding and interest reduced.

5.Expert Systems Boom (1980s)

Rule-based systems became popular in industries.

Example: XCON used by DEC for configuring computer systems.

6.Rise of Machine Learning (1990s–2000s)

Algorithms like neural networks and data-driven learning improved.

AI started performing better at speech and image recognition.

7.Modern AI Era (2010s–Present)

Deep learning, big data, and powerful GPUs transformed AI.

AI achieved human-level performance in many tasks like image recognition, translation, and strategy games (e.g., AlphaGo).

Applications of Artificial Intelligence

AI is used almost everywhere today. Major application areas:

1.Healthcare

Disease prediction

Medical image analysis

AI-assisted surgeries

Drug discovery

2.Education

Personalized learning

Automated grading

Virtual tutors

3.Finance

Fraud detection

Stock market prediction

Automated customer service

Credit scoring

4.Transportation

Self-driving cars

Traffic prediction and control

Route optimization

5.Manufacturing

Industrial robots

Quality control

Predictive maintenance

6.Agriculture

Crop monitoring using drones

Soil analysis

Smart irrigation

7.Retail & E-Commerce

Recommendation systems

Chatbots

Inventory management

8.Security & Surveillance

Face recognition

Automatic threat detection

Cybersecurity systems

9.Entertainment

Video game AI

Streaming recommendations

Content generation

10.Daily Life Applications

Smart assistants (Alexa, Siri, Google Assistant)

Smart home devices

Voice-to-text applications