# The Evolution of Artificial Intelligence

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## What is Artificial Intelligence?

AI refers to the simulation of human intelligence in machines.
Enables machines to think, learn, and perform tasks like humans.
Used in healthcare, finance, education, and entertainment.

## Early History of AI (1940s–1950s)

Alan Turing proposed the concept of a thinking machine.
1950: Turing Test to measure machine intelligence.
1956: Dartmouth Conference — term 'Artificial Intelligence' coined.

## Rule-Based AI and Expert Systems (1960s–1980s)

Focus on symbolic reasoning and logic.
Development of Expert Systems like MYCIN.
AI mainly used in narrow, predefined tasks.

## Machine Learning Era (1990s–2010s)

Shift from rule-based to data-driven models.
Algorithms learn patterns from data.
1997: IBM’s Deep Blue defeats Garry Kasparov in chess.

## Rise of Deep Learning (2012 onwards)

Neural networks become mainstream.
2012: AlexNet wins ImageNet competition — a breakthrough.
Enabled speech recognition, image classification, and NLP.

## Generative AI & Transformers

2017: Google introduces Transformer architecture.
OpenAI launches GPT-2 and GPT-3.
Capable of generating human-like text.

## From GPT to Agentic AI (2023–2025)

AI models become more autonomous and proactive.
Tools like AutoGPT and BabyAGI.
AI agents that plan tasks and take actions independently.

## Major Paradigm Shifts

Symbolic AI → Machine Learning → Deep Learning → Agentic AI.
Increasing autonomy and reasoning in AI systems.
Multi-modal and context-aware agents.

## Future of AI

More ethical and responsible AI systems.
Human-AI collaboration.
AGI (Artificial General Intelligence) — long-term goal.
Regulation and safety concerns.

## References

OpenAI Research
Google AI Blog
Stanford AI Timeline
GitHub: Learn Agentic AI Repository