

AI is just starting to take off because recent breakthroughs in computing power, big data, and advanced algorithms have made it more capable than ever. While AI has been researched since the 1950s, it's only in the past decade that deep learning and generative models unlocked its ability to create text, images, and even code. Tools like ChatGPT and DALL-E brought AI into everyday use, showing how it can boost productivity and creativity. With rapid adoption across industries, we're only at the beginning of seeing its full impact.

What is Artificial Intelligence?

Artificial intelligence (AI) has many different definitions; some see it as the created technology that allows computers and machines to function intelligently. Some see it as the machine that replaces human labor to work for men a more effective and speedier result. Others see it as “a system” with the ability to correctly interpret external data, to learn from such data, and to use those learnings to achieve specific goals and tasks through flexible adaptation [1].

Foundational Terms

Artificial Intelligence (AI): A field of computer science focused on building systems capable of performing tasks that require human intelligence, such as learning, reasoning, perception, and language understanding.

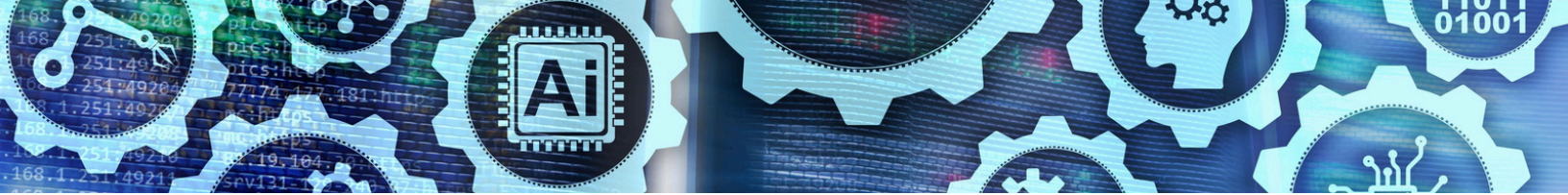
Machine Learning (ML): A subset of AI where algorithms learn from data and improve their performance over time without being explicitly programmed.

Deep Learning: An advanced form of machine learning that uses multi-layered neural networks to recognize complex patterns in large datasets.

Large Language Model (LLM): A type of AI model trained on massive text datasets to generate, interpret, and manipulate human-like language.

Large Reasoning Model (LRM): An extended LLM that incorporates structured reasoning to break down complex models. They're trained to think, theorize, and question themselves to improve reliability and accuracy.

Natural Language Processing (NLP): AI techniques that enable machines to understand, interpret, and respond to human language.



Generative AI: AI systems that create new content (text, images, code, video, audio) by learning patterns from existing data.

Agentic AI: AI systems that exhibit autonomy by proactively performing complex, multi-step tasks, reasoning, and making decisions with minimal human oversight.

Automation: Using AI and software to perform tasks with little to no human intervention, increasing efficiency and scalability.

Augmentation: AI systems that enhance human capabilities rather than replacing them, supporting decision-making, creativity, and productivity.

Prompt Engineering: The practice of crafting and refining inputs (prompts) to guide AI systems toward producing desired outputs.

Training Data: The dataset used to “teach” AI systems how to recognize patterns, make predictions, or generate content. (teaching your AI to act within your company standards)

Reinforcement Learning: A learning method where AI systems improve through trial and error, receiving rewards or penalties for actions.

Foundation Model: A large-scale pre-trained model that can be adapted for multiple downstream applications.

Human-in-the-Loop (HITL): An AI development approach where human oversight remains central to ensure ethical, accurate outcomes.

General Intelligence: The broad ability to reason, solve problems, learn, and adapt across many tasks and situations.

Risks & Challenges

AI Bias: Unfair or discriminatory outcomes in AI systems caused by biased training data or flawed model design.

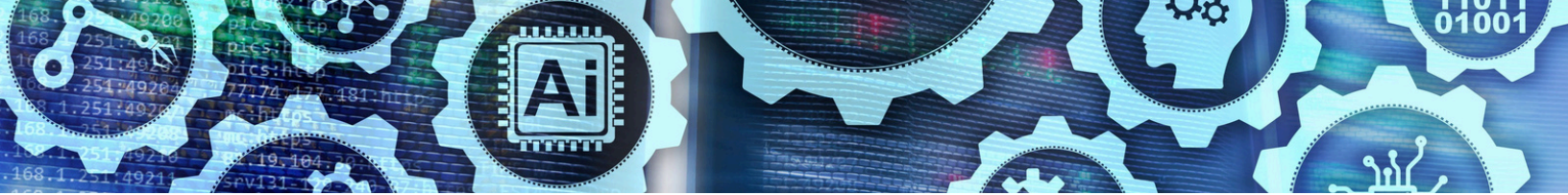
Hallucination (AI Hallucination): When an AI system generates outputs that are convincing but factually incorrect or nonsensical.

Black Box Problem: The challenge of AI systems making decisions that are difficult for humans to understand or explain.

Data Privacy: Risks associated with AI systems that rely on personal or sensitive data, raising compliance and ethical concerns.

Security Risks: AI models can be vulnerable to hacking, adversarial attacks, or misuse (e.g., deepfakes, fraud).

Ethical AI: A principle that emphasizes fairness, accountability, inclusivity, and transparency in AI design and deployment.



Laws and Regulations

EU AI Act (2024): The world's first comprehensive AI regulation, classifying AI by risk levels and setting obligations for high-risk systems. <https://artificialintelligenceact.eu/>

NIST AI Risk Management Framework (U.S.): A voluntary framework providing guidance on building trustworthy and safe AI systems. <https://www.nist.gov/itl/ai-risk-management-framework>

OECD AI Principles: International guidelines advocating for transparent, human-centered, and accountable AI. <https://oecd.ai/en/ai-principles> <https://www.oecd.org/en/topics/sub-issues/ai-principles.html>

UNESCO AI Ethics Framework (2021): A global framework promoting fairness, inclusivity, and sustainability in AI deployment. <https://www.unesco.org/en/artificial-intelligence/recommendation-ethics>

Data Protection Regulations (GDPR, CCPA): Laws requiring companies to handle data responsibly, directly impacting AI systems reliant on personal data. <https://www.entrust.com/resources/learn/ccpa-vs-gdpr>

AI Liability Directive (EU, proposed): Establishes legal accountability for harm caused by AI systems. <https://www.ai-liability-directive.com/>

Global Partnership on AI (GPAI): An international initiative fostering collaboration on AI policy, research, and development. <https://www.oecd.org/en/about/programmes/global-partnership-on-artificial-intelligence.html>

Investment & Strategy Tools

AI Readiness Assessment: An evaluation of an organization's infrastructure, workforce, and governance to adopt AI responsibly. https://www.cisco.com/c/m/en_us/solutions/ai/readiness-index/assessment-tool.html

AI Risk Scenario Analysis: A strategic tool for evaluating potential risks from AI misuse, bias, or disruption. https://www.ibm.com/products/watsonx-governance?utm_content=SRCWW&p1=Search&p4=454160013770&p5=p&p9=178846274873&gclid=aw.ds&gad_source=1&gad_campaignid=20511459490&gbraid=0AAAAAD-QsRhpZ2a_WKbv1beKhM6f4Kdi&gclid=Cj0KCQjwuKnGBhD5ARIsAD19RsYpqCalGRddVpfzxLnJ1SfLX_fNHcxafHmenUylMRGoM5A07J00jl8aArY7EALw_wcB

AI Proposition: The unique value a company offers by integrating AI responsibly into its products, services, and brand.

AI Profile: A snapshot of a company's AI maturity, ethical safeguards, and adoption progress.