Original text:

In [computer science](https://en.wikipedia.org/wiki/Computer_science), **Artificial intelligence** (**AI**), sometimes called **machine intelligence**, is [intelligence](https://en.wikipedia.org/wiki/Intelligence) demonstrated by [machines](https://en.wikipedia.org/wiki/Machine), in contrast to the **natural intelligence**displayed by humans and other animals. Computer science defines AI research as the study of "[intelligent agents](https://en.wikipedia.org/wiki/Intelligent_agent)": any device that perceives its environment and takes actions that maximize its chance of successfully achieving its goals. More in detail, [Kaplan](https://en.wikipedia.org/wiki/Andreas_Kaplan) and Haenlein define AI as “a system’s 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”. Colloquially, the term "artificial intelligence" is applied when a machine mimics "cognitive" functions that humans associate with other [human minds](https://en.wikipedia.org/wiki/Human_mind), such as "learning" and "problem solving". The scope of AI is disputed: as machines become increasingly capable, tasks considered as requiring "intelligence" are often removed from the definition, a phenomenon known as the [AI effect](https://en.wikipedia.org/wiki/AI_effect), leading to the quip in Tesler's Theorem, "AI is whatever hasn't been done yet.” For instance, [optical character recognition](https://en.wikipedia.org/wiki/Optical_character_recognition) is frequently excluded from "artificial intelligence", having become a routine technology. Modern machine capabilities generally classified as AI include successfully [understanding human speech](https://en.wikipedia.org/wiki/Natural_language_understanding),[[6]](https://en.wikipedia.org/wiki/Artificial_intelligence#cite_note-FOOTNOTERussellNorvig2009-6)competing at the highest level in [strategic game](https://en.wikipedia.org/wiki/Strategic_game) systems (such as [chess](https://en.wikipedia.org/wiki/Chess) and [Go](https://en.wikipedia.org/wiki/Go_(game))),[[7]](https://en.wikipedia.org/wiki/Artificial_intelligence#cite_note-bbc-alphago-7) [autonomously operating cars](https://en.wikipedia.org/wiki/Autonomous_car), and intelligent routing in [content delivery networks](https://en.wikipedia.org/wiki/Content_delivery_network) and [military simulations](https://en.wikipedia.org/wiki/Military_simulations). Borrowing from the [management](https://en.wikipedia.org/wiki/Management) literature, [Kaplan](https://en.wikipedia.org/wiki/Andreas_Kaplan) and Haenlein classify artificial intelligence into three different types of AI systems: analytical, human-inspired, and humanized artificial intelligence.[[8]](https://en.wikipedia.org/wiki/Artificial_intelligence#cite_note-8) Analytical AI has only characteristics consistent with [cognitive intelligence](https://en.wikipedia.org/wiki/Cognition) generating cognitive representation of the world and using learning based on past experience to inform future decisions. Human-inspired AI has elements from cognitive as well as [emotional intelligence](https://en.wikipedia.org/wiki/Emotional_intelligence), understanding, in addition to cognitive elements, also human emotions considering them in their [decision making](https://en.wikipedia.org/wiki/Decision_making). Humanized AI shows characteristics of all types of competencies (i.e., cognitive, emotional, and [social intelligence](https://en.wikipedia.org/wiki/Social_intelligence)), able to be [self-conscious](https://en.wikipedia.org/wiki/Self-consciousness) and [self-aware](https://en.wikipedia.org/wiki/Self-awareness) in interactions with others. Artificial intelligence was founded as an academic discipline in 1956, and in the years since has experienced several waves of optimism,[[9]](https://en.wikipedia.org/wiki/Artificial_intelligence#cite_note-Optimism_of_early_AI-9)[[10]](https://en.wikipedia.org/wiki/Artificial_intelligence#cite_note-AI_in_the_80s-10) followed by disappointment and the loss of funding (known as an "[AI winter](https://en.wikipedia.org/wiki/AI_winter)"),[[11]](https://en.wikipedia.org/wiki/Artificial_intelligence#cite_note-First_AI_winter-11)[[12]](https://en.wikipedia.org/wiki/Artificial_intelligence#cite_note-Second_AI_winter-12) followed by new approaches, success and renewed funding.[[10]](https://en.wikipedia.org/wiki/Artificial_intelligence#cite_note-AI_in_the_80s-10)[[13]](https://en.wikipedia.org/wiki/Artificial_intelligence#cite_note-AI_in_2000s-13) For most of its history, AI research has been divided into subfields that often fail to communicate with each other.[[14]](https://en.wikipedia.org/wiki/Artificial_intelligence#cite_note-Fragmentation_of_AI-14) These sub-fields are based on technical considerations, such as particular goals (e.g. "[robotics](https://en.wikipedia.org/wiki/Robotics)" or "machine learning"),[[15]](https://en.wikipedia.org/wiki/Artificial_intelligence#cite_note-Problems_of_AI-15) the use of particular tools ("logic" or [artificial neural networks](https://en.wikipedia.org/wiki/Artificial_neural_network)), or deep philosophical differences.[[16]](https://en.wikipedia.org/wiki/Artificial_intelligence#cite_note-Biological_intelligence_vs._intelligence_in_general-16)[[17]](https://en.wikipedia.org/wiki/Artificial_intelligence#cite_note-Neats_vs._scruffies-17)[[18]](https://en.wikipedia.org/wiki/Artificial_intelligence#cite_note-Symbolic_vs._sub-symbolic-18) Subfields have also been based on social factors (particular institutions or the work of particular researchers).[[14]](https://en.wikipedia.org/wiki/Artificial_intelligence#cite_note-Fragmentation_of_AI-14) The traditional problems (or goals) of AI research include [reasoning](https://en.wikipedia.org/wiki/Automated_reasoning), [knowledge representation](https://en.wikipedia.org/wiki/Knowledge_representation), [planning](https://en.wikipedia.org/wiki/Automated_planning_and_scheduling), [learning](https://en.wikipedia.org/wiki/Machine_learning), [natural language processing](https://en.wikipedia.org/wiki/Natural_language_processing), [perception](https://en.wikipedia.org/wiki/Machine_perception) and the ability to move and manipulate objects.[[15]](https://en.wikipedia.org/wiki/Artificial_intelligence#cite_note-Problems_of_AI-15) [General intelligence](https://en.wikipedia.org/wiki/Artificial_general_intelligence) is among the field's long-term goals.[[19]](https://en.wikipedia.org/wiki/Artificial_intelligence#cite_note-General_intelligence-19) Approaches include [statistical methods](https://en.wikipedia.org/wiki/Artificial_intelligence#Statistical), [computational intelligence](https://en.wikipedia.org/wiki/Artificial_intelligence#Sub-symbolic), and [traditional symbolic AI](https://en.wikipedia.org/wiki/Artificial_intelligence#Symbolic). Many tools are used in AI, including versions of [search and mathematical optimization](https://en.wikipedia.org/wiki/Artificial_intelligence#Search_and_optimization), [artificial neural networks](https://en.wikipedia.org/wiki/Artificial_neural_network), and [methods based on statistics, probability and economics](https://en.wikipedia.org/wiki/Artificial_intelligence#Probabilistic_methods_for_uncertain_reasoning). The AI field draws upon [computer science](https://en.wikipedia.org/wiki/Computer_science), [information engineering](https://en.wikipedia.org/wiki/Information_engineering_(field)), [mathematics](https://en.wikipedia.org/wiki/Mathematics), [psychology](https://en.wikipedia.org/wiki/Psychology), [linguistics](https://en.wikipedia.org/wiki/Linguistics), [philosophy](https://en.wikipedia.org/wiki/Philosophy), and many others. The field was founded on the claim that [human intelligence](https://en.wikipedia.org/wiki/Human_intelligence) "can be so precisely described that a machine can be made to simulate it".[[20]](https://en.wikipedia.org/wiki/Artificial_intelligence#cite_note-20) This raises philosophical arguments about the nature of the [mind](https://en.wikipedia.org/wiki/Mind) and the ethics of creating artificial beings endowed with human-like intelligence which are issues that have been explored by [myth](https://en.wikipedia.org/wiki/History_of_AI#AI_in_myth,_fiction_and_speculation), [fiction](https://en.wikipedia.org/wiki/Artificial_intelligence_in_fiction) and [philosophy](https://en.wikipedia.org/wiki/Philosophy_of_AI) since [antiquity](https://en.wikipedia.org/wiki/Ancient_history).[[21]](https://en.wikipedia.org/wiki/Artificial_intelligence#cite_note-McCorduck's_thesis-21) Some people also consider AI to be [a danger to humanity](https://en.wikipedia.org/wiki/Technological_singularity) if it progresses unabated.[[22]](https://en.wikipedia.org/wiki/Artificial_intelligence#cite_note-22) Others believe that AI, unlike previous technological revolutions, will create a [risk of mass unemployment](https://en.wikipedia.org/wiki/Technological_unemployment#21st_century).

general, :

['Computer science defines AI research as the study of "intelligent agents": any device that perceives its environment and takes actions that maximize its chance of successfully achieving its goals.', '[1] More in detail, Kaplan and Haenlein define AI as “a system’s 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”.', '[2] Colloquially, the term "artificial intelligence" is applied when a machine mimics "cognitive" functions that humans associate with other human minds, such as "learning" and "problem solving".', '[3] The scope of AI is disputed: as machines become increasingly capable, tasks considered as requiring "intelligence" are often removed from the definition, a phenomenon known as the AI effect, leading to the quip in Tesler\'s Theorem, "AI is whatever hasn\'t been done yet.', '"[4] For instance, optical character recognition is frequently excluded from "artificial intelligence", having become a routine technology.', '[5] Modern machine capabilities generally classified as AI include successfully understanding human speech,[6]competing at the highest level in strategic game systems (such as chess and Go),[7] autonomously operating cars, and intelligent routing in content delivery networks and military simulations.', 'Borrowing from the management literature, Kaplan and Haenlein classify artificial intelligence into three different types of AI systems: analytical, human-inspired, and humanized artificial intelligence.', '[8] Analytical AI has only characteristics consistent with cognitive intelligence generating cognitive representation of the world and using learning based on past experience to inform future decisions.', '"robotics" or "machine learning"),[15] the use of particular tools ("logic" or artificial neural networks), or deep philosophical differences.', '[16][17][18] Subfields have also been based on social factors (particular institutions or the work of particular researchers).', '[14] The traditional problems (or goals) of AI research include reasoning, knowledge representation, planning, learning, natural language processing, perception and the ability to move and manipulate objects.', "[15] General intelligence is among the field's long-term goals.", '[19] Approaches include statistical methods, computational intelligence, and traditional symbolic AI.']

Machine:

['In computer science, Artificial intelligence (AI), sometimes called machine intelligence, is intelligence demonstrated by machines, in contrast to the natural intelligencedisplayed by humans and other animals.', 'In computer science, Artificial intelligence (AI), sometimes called machine intelligence, is intelligence demonstrated by machines, in contrast to the natural intelligencedisplayed by humans and other animals.', 'Computer science defines AI research as the study of "intelligent agents": any device that perceives its environment and takes actions that maximize its chance of successfully achieving its goals.', '[1] More in detail, Kaplan and Haenlein define AI as “a system’s 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”.', '[2] Colloquially, the term "artificial intelligence" is applied when a machine mimics "cognitive" functions that humans associate with other human minds, such as "learning" and "problem solving".', '[3] The scope of AI is disputed: as machines become increasingly capable, tasks considered as requiring "intelligence" are often removed from the definition, a phenomenon known as the AI effect, leading to the quip in Tesler\'s Theorem, "AI is whatever hasn\'t been done yet.', '"[4] For instance, optical character recognition is frequently excluded from "artificial intelligence", having become a routine technology.', '[5] Modern machine capabilities generally classified as AI include successfully understanding human speech,[6]competing at the highest level in strategic game systems (such as chess and Go),[7] autonomously operating cars, and intelligent routing in content delivery networks and military simulations.', 'Borrowing from the management literature, Kaplan and Haenlein classify artificial intelligence into three different types of AI systems: analytical, human-inspired, and humanized artificial intelligence.', '[8] Analytical AI has only characteristics consistent with cognitive intelligence generating cognitive representation of the world and using learning based on past experience to inform future decisions.', '"robotics" or "machine learning"),[15] the use of particular tools ("logic" or artificial neural networks), or deep philosophical differences.', '[16][17][18] Subfields have also been based on social factors (particular institutions or the work of particular researchers).', '[14] The traditional problems (or goals) of AI research include reasoning, knowledge representation, planning, learning, natural language processing, perception and the ability to move and manipulate objects.', "[15] General intelligence is among the field's long-term goals.", '[19] Approaches include statistical methods, computational intelligence, and traditional symbolic AI.']

Machine , problem solving :

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