**Artificial Intelligence**

Artificial intelligence (AI) is the [intelligence](http://en.wikipedia.org/wiki/Intelligence) of machines and the branch of [computer science](http://en.wikipedia.org/wiki/Computer_science) that aims to create it. AI textbooks define the field as "the study and design of intelligent agents"where an [intelligent agent](http://en.wikipedia.org/wiki/Intelligent_agent) is a system that perceives its environment and takes actions that maximize its chances of success.  [John McCarthy](http://en.wikipedia.org/wiki/John_McCarthy_(computer_scientist)), who coined the term in 1955, defines it as "the science and engineering of making intelligent machines."

AI research is highly technical and specialized, deeply divided into subfields that often fail to communicate with each other. Some of the division is due to social and cultural factors: subfields have grown up around particular institutions and the work of individual researchers. AI research is also divided by several technical issues. There are subfields which are focused on the solution of specific [problems](http://en.wikipedia.org/wiki/Artificial_intelligence#Problems), on one of several possible [approaches](http://en.wikipedia.org/wiki/Artificial_intelligence#Approaches), on the use of widely differing [tools](http://en.wikipedia.org/wiki/Artificial_intelligence#Tools) and towards the accomplishment of particular [applications](http://en.wikipedia.org/wiki/Artificial_intelligence#Applications). The central problems of AI include such traits as reasoning, knowledge, planning, learning, communication, perception and the ability to move and manipulate objects. General intelligence (or "[strong AI](http://en.wikipedia.org/wiki/Strong_AI)") is still among the field's long term goals. Currently popular approaches include [statistical methods](http://en.wikipedia.org/wiki/Artificial_intelligence#Statistical), [computational intelligence](http://en.wikipedia.org/wiki/Artificial_intelligence#Sub-symbolic) and [traditional symbolic AI](http://en.wikipedia.org/wiki/Artificial_intelligence#Symbolic). There are an enormous number of tools used in AI, including versions of [search and mathematical optimization](http://en.wikipedia.org/wiki/Artificial_intelligence#Search_and_optimization), [logic](http://en.wikipedia.org/wiki/Artificial_intelligence#Logic), [methods based on probability and economics](http://en.wikipedia.org/wiki/Artificial_intelligence#Probabilistic_methods_for_uncertain_reasoning), and many others.

The field was founded on the claim that a central property of humans, intelligence—the [sapience](http://en.wikipedia.org/wiki/Sapience) of [Homo sapiens](http://en.wikipedia.org/wiki/Homo_sapiens)—can be so precisely described that it can be simulated by a machine. This raises philosophical issues about the nature of the [mind](http://en.wikipedia.org/wiki/Mind) and the ethics of creating artificial beings, issues which have been addressed by [myth](http://en.wikipedia.org/wiki/History_of_AI#AI_in_myth.2C_fiction_and_speculation), [fiction](http://en.wikipedia.org/wiki/Artificial_intelligence_in_fiction) and [philosophy](http://en.wikipedia.org/wiki/Philosophy_of_AI) since antiquity. Artificial intelligence has been the subject of optimism but has also suffered [setbacks](http://en.wikipedia.org/wiki/AI_winter)and, today, has become an essential part of the technology industry, providing the heavy lifting for many of the most difficult problems in computer science