

A quick guide to Artificial Intelligence

Artificial intelligence (AI) refers to a machine or a computer program that uses human-like 'thinking' to complete a task.

AI can be embodied in human or animal-like robots or can be a disembodied program running in the background of an application like a phone communication assistant.

Right now we have a narrow type of AI.

Types of AI

Adapted from Hintz, 2016

Super AI		Super AI (or superintelligence) would exceed human intelligence in every field. This type of AI is only in science fiction.
General AI	Self Aware AI 	AI at this level would extend the 'theory of mind' to predict the internal states of others. It would have achieved human-like consciousness and might exhibit non-human abilities. This type of AI is only in science fiction.
	Theory of Mind AI 	AI that would have an updatable representation of the world. It would know that other entities in the world also have their own internal states. This type of AI is only in science fiction.
Narrow AI	Limited Memory AI 	AI that receives current input, and adds pieces of this input to its programmed representation of the world. This can change the way the AI makes current or new decisions, e.g. virtual assistants, self-driving cars, facial recognition technology.
	Reactive AI 	Designed for a specific task, this AI receives input, and acts on this input. The AI cannot be applied to different tasks, and past experiences do not affect current decisions, e.g. AI chess players.

Machine learning is the way computers can be automated to learn from data to identify patterns and make decisions with minimal human intervention.

AI raises ethical issues such as data privacy, transparency in how machines make decisions, and who is accountable if harm is caused.

AI is already used in education in intelligent tutoring and adaptive learning systems and in learning analytics.

Infographic by Erica Southgate PhD, Karen Blackmore PhD, Stephanie Pieschl PhD, and Susan Grimes PhD. It is based on research by:

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