An overview of

Artificial Intelligence

The simulation of human intelligence in machines programmed to think, learn and adapt like humans. Tasks include reasoning, learning, problem-solving, decision-making and language understanding.

Existing AI

Classification: Functionality-based

Reactive Machine. Emergence: 1960s. Responds to input-only. Has no stored data from which to react as experience. Examples: IBM's Deep Blue chess-playing computer, industrial robotics and email spam filters.

Limited Memory. Emergence: 2010s. Stores data for short durations. Capable of making informed decisions from past experience. Examples: Autonomous vehicles, online recommendations and chatbots.

Classification: Capability-based

Narrow (weak). Emergence: 1060s. Performs a specialized task or solves a narrowly defined problem within a limited context. Examples: MRI machines, investment analysis and virtual assistants.

Generative AI. Emergence: 2010s. Creates text, images, videos or other forms of data.

Type 1. Prompted. Responds to text instruction input at keyboard.

Type 2. Autonomous. Operates using algorithms (pre-written instructions) with minimal or no human intervention.

Concerns

Privacy - As with search engines, the contents of your generative prompts connect to your IP address along with any identifying or sensitive content.

Impersonation - Each self-identifying data point provided through a prompt has the potential of aggregating with other information to build a detailed profile about you. In the possession of a stranger, they may attempt to present themself as you.

Copyright/Trademark - In addition to intentionally unauthorized infringement by others, inadvertent violation of others could be made by you due to scale and ease of availability.

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Liability - Following or forwarding "directions" obtained from a chatbot does not release a party from liability resulting from damaging results. Discretion should be exercised when seeking legal, financial, medical or any other serious form of information.

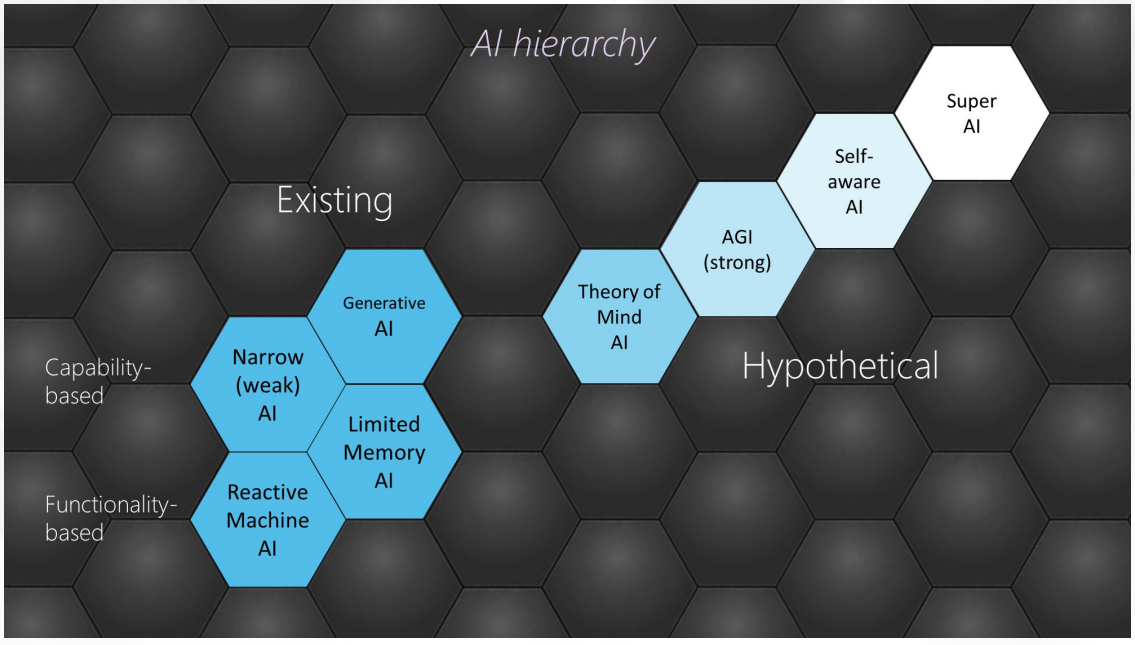
Deep Fakes - Current Generative AI are still mostly distinguishable from reality but steadily improving. While it has become impractical for a socially and professionally-engaged person to have no images of themselves online, the risk of misleading fakes increases exponentially with volume.

Hypothetical AI

1. **General (Strong)**. The ability to understand, learn and apply knowledge across various tasks.
2. **Theory of Mind**. Able to understand and respond to human emotions, beliefs, and intentions.
3. **Self-Aware**. Conscious of its own existence, with its own desires, goals and emotions.
4. **Super**. Capable of surpassing human intelligence in every field.

The SINGULARITY

A term originally applied to a situation where the laws of physics as we understand them are suspended. It was commonly used to describe the moment before the birth of the universe, aka the 'Big Bang'. Then, in his 2005 book *The Singularity Is Near*, futurist writer Ray Kurzweil used it in a technological context to describe a theoretical point in the future when artificial intelligence surpasses human intelligence and technological growth becomes unpredictable and uncontrollable. This he stated could occur by 2045.



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GLOSSARY

Agent - A computer program or system designed to autonomously perform a specific task or solve a problem.

Algorithm - Step-by-step instructions designed to solve a specific problem or perform a task.

Autonomous AI - Systems that can operate independently with little or no human intervention.

Capability-based AI - A classification based on specific abilities. It describes the inherent potential to learn and adapt to many tasks and environments.

Functionality-based AI - A classification based on purpose. It describes the specific tasks or operations that a system can perform.

Generative Pre-trained Transformer (GPT) - A model that creates human-like text.

Large Language Model (LLM) - A system trained on large amounts of data to generate human-like text.

Limited Memory AI - Stores data for short durations. Capable of making informed decisions from past experience.

Modality - The type of data that a model can process, for example text, image, audio or video.

Model - A mathematical algorithm designed to perform specific tasks or solve problems by recognizing patterns in data.

Multi-modal - Systems capable of simultaneously processing multiple types of data.

Narrow (weak) AI - Performs a specialized task or solves a narrowly defined problem within a limited context.

Prompted AI - The input or instruction given to a model that generates a specific output.

Reactive Machine AI - Responds to input-only. Has no stored data from which to react as experience.

Singularity - A theoretical point in the future when artificial intelligence surpasses human intelligence.

Training - The process of teaching a model to perform a specific task by processing large amounts of data.

Virtual Assistant - A software-based system that helps users by performing tasks, answering questions or automating processes using voice or text.

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Experience and areas of focus have included information privacy, security, availability and disaster recovery planning. He is also an instructor and developer at the Udemy online course platform, and the author of 'No Decision: The 1919 Stanley Cup Final' about the Spanish Flu pandemic, available at Amazon.

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