Artificial Intelligence

Tech Tuesday – Session 1

10/3/23

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01

What is artificial intelligence?

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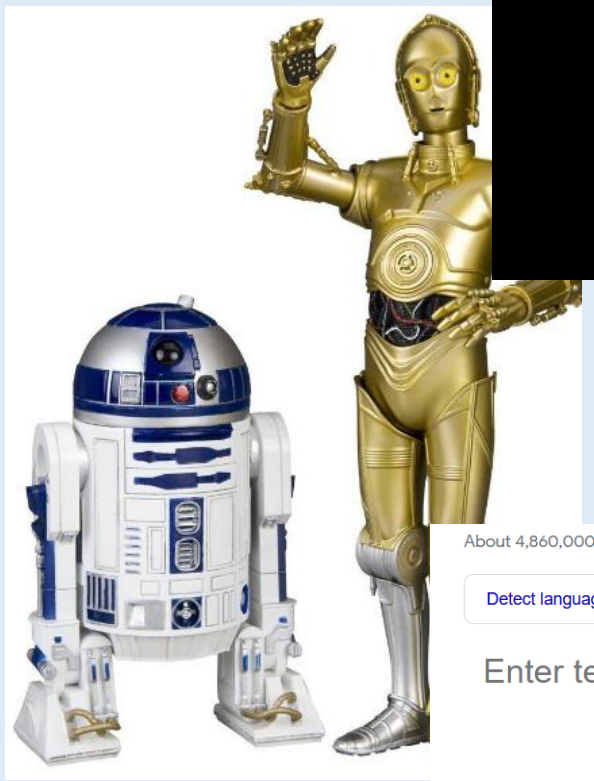
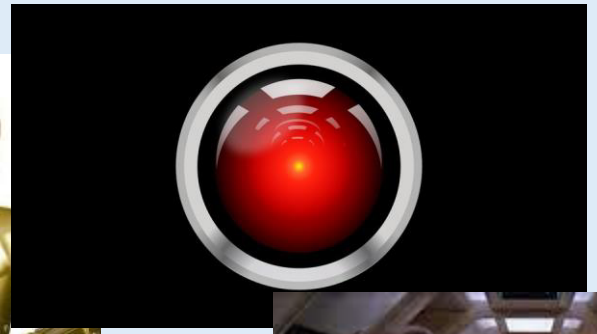
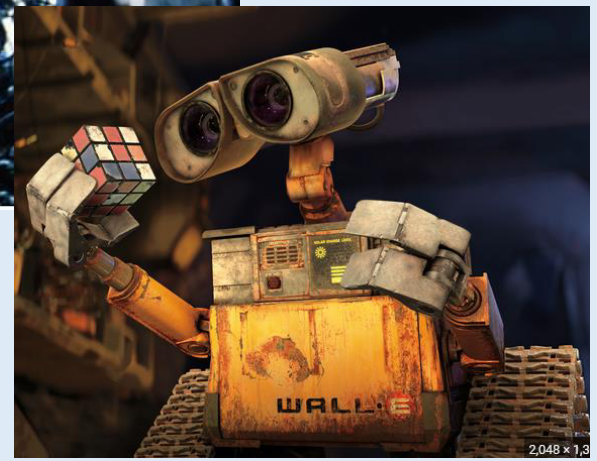
AI?







About 4,860,000,000 results (0.32 seconds)

Detect language ⇄ English

Enter text

Translation

Open in Google Translate • Feedback

Brief History

Alan Turing (1950)

Eliza – First chatbot (1964)

DeepBlue (1997)

Amazon Alexa (2014)

Chat GPT (Nov 2022)

John McArthy (1955)

Shakey – robot (1969)

IPhone and Siri (2008)

Chat GPT (2020)

[The Timeline of Artificial Intelligence - From the 1940s (verloop.io)]

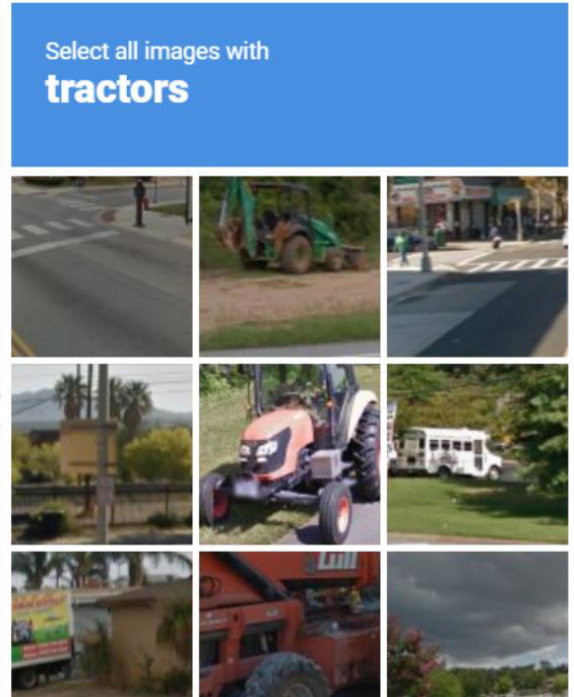
Turing Test

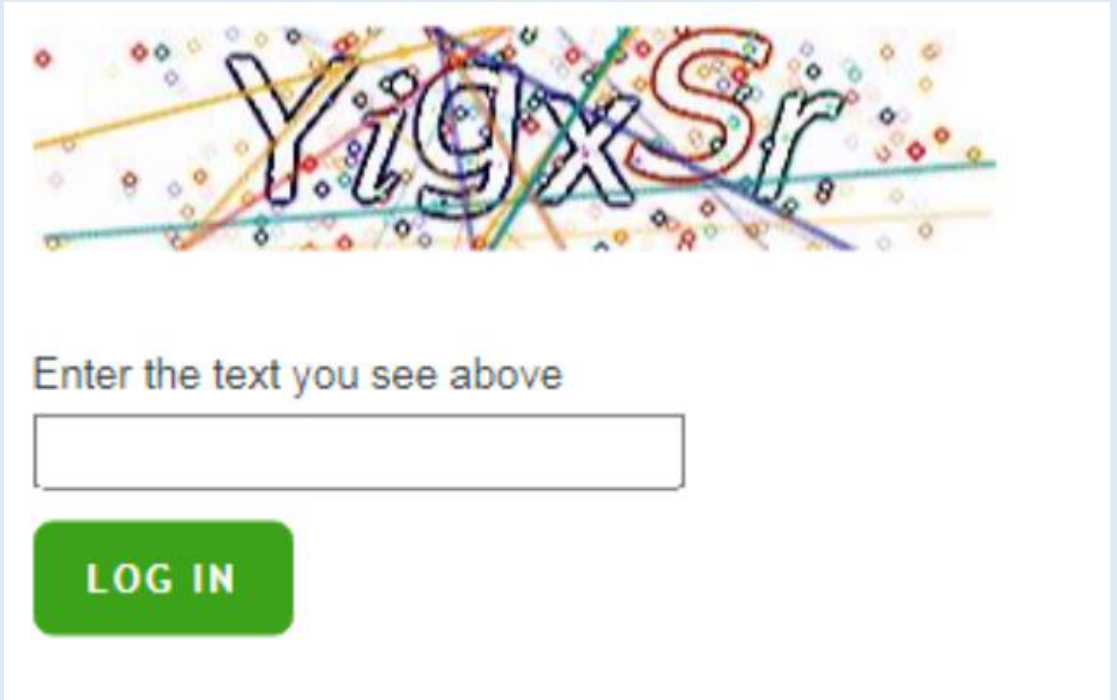
Test for machine intelligence by Alan Turing (1950)

Alan Turing, the world's most renowned computer scientist, and mathematician had posed yet another experiment to test for machine intelligence. The idea was to understand if the machine can think accordingly and make decisions as rationally and intelligently as a human being. In the test, an interrogator has to figure out which answer belongs to a human and which one to a machine. So, if the interrogator wouldn't be able to distinguish between the two, the machine would pass the test of being indistinguishable from a human being.

Turing Test and Captcha

Captcha" stands for "completely automated public Turing test to tell computers and humans apart





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02

Types of Artificial Intelligence

What is Intelligence

human intelligence, mental quality that consists of the abilities to learn from experience, adapt to new situations, understand and handle abstract concepts, and use knowledge to manipulate one's environment.

https://www.britannica.com/science/human-intelligence-psychology

Types of Artificial Intelligence

Super AI

Artificial super intelligence (ASI) Out preforms human intelligence in every way

General AI

Also known as Strong AI. involves a machine understanding and performing vastly different tasks based on its accumulated experience

Narrow AI

This category includes intelligent systems that have been designed or trained to carry out specific tasks or solve particular problems, without being explicitly designed to do so.

ChatGPT is an example of ANI, as it is programmed to perform a specific task, which is to generate text responses to the prompts it is given.

More Definitions

Neural Networks: A neural network is a method in artificial intelligence that teaches computers to process data in a way that is inspired by the human brain.
https://aws.amazon.com/what-is/neural-network/#:~:text=A%20neural%20network%20is%20a,that%20resembles%20the%20human%20brain

Learned Language Models (LLM): A **language model** is a probabilistic model of a natural language[1] that can generate probabilities of a series of words, based on text corpora in one or multiple languages it was trained on. In 1980, the first significant statistical language model was proposed, and during the decade IBM performed 'Shannon-style' experiments, in which potential sources for language modeling improvement were identified by observing and analyzing the performance of human subjects in predicting or correcting text.[2]
https://en.wikipedia.org/wiki/Language_model

Long-Short-Term-Memory : Long short-term memory (LSTM) networks are RNNs that solve the vanishing gradient problem, where the hidden layer is replaced by recurrent gates called forget gates.
https://www.sciencedirect.com/topics/computer-science/long-short-term-memory-network

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03 AI in the World

AI in the World

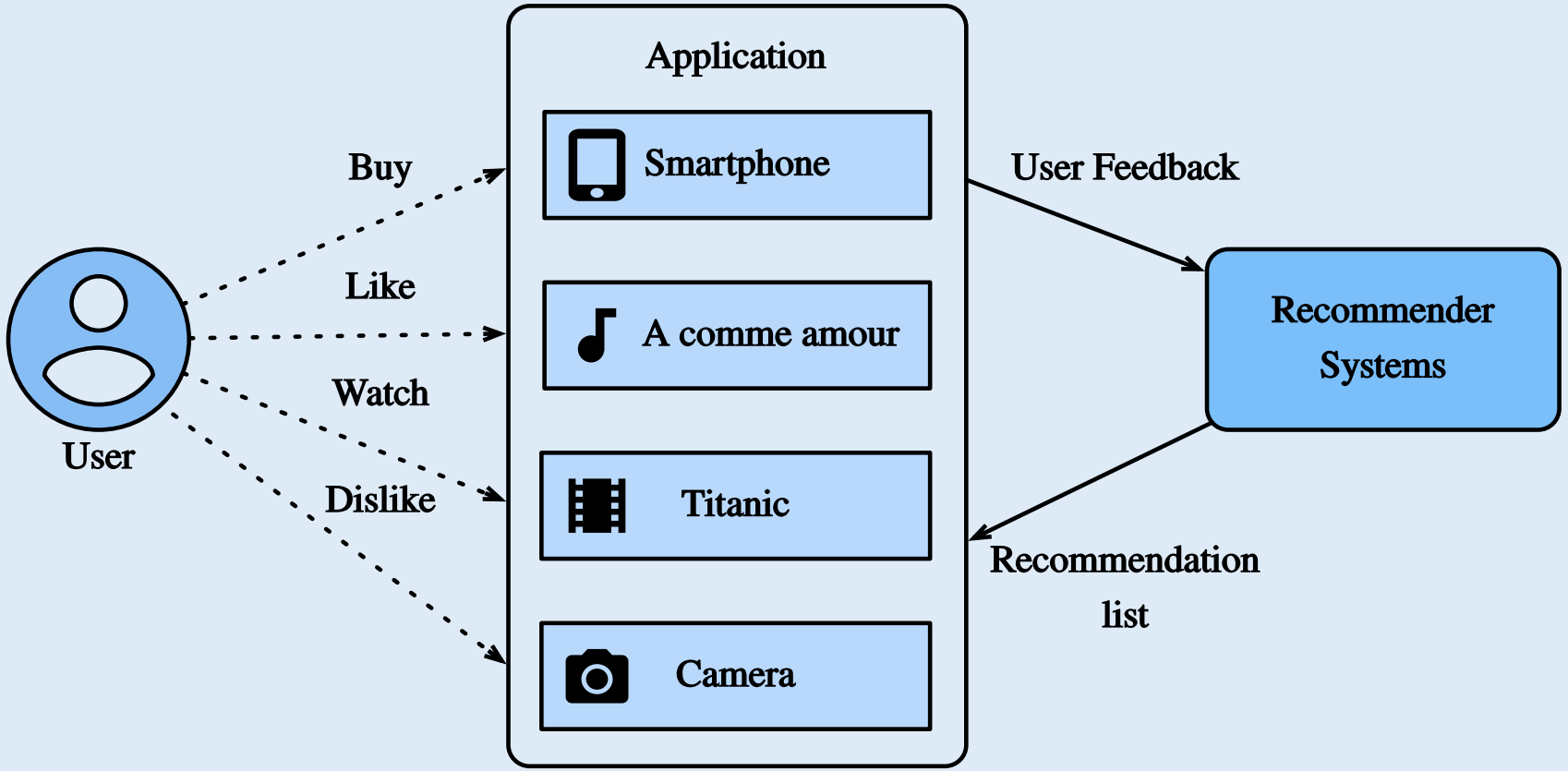
- Virtual personal assistants

AI in the World

- Home Automation

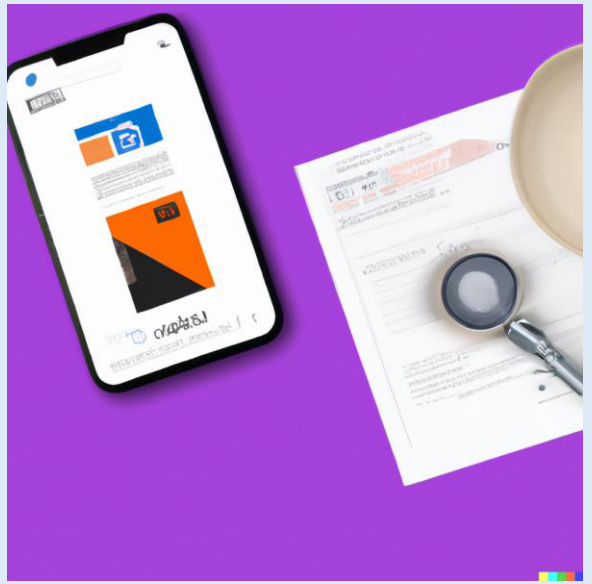
AI in the World

- Recommendation Systems



AI in the World

- Search Engines, Social Media, & Email



AI in the World

- Self-driving cars

AI in the World

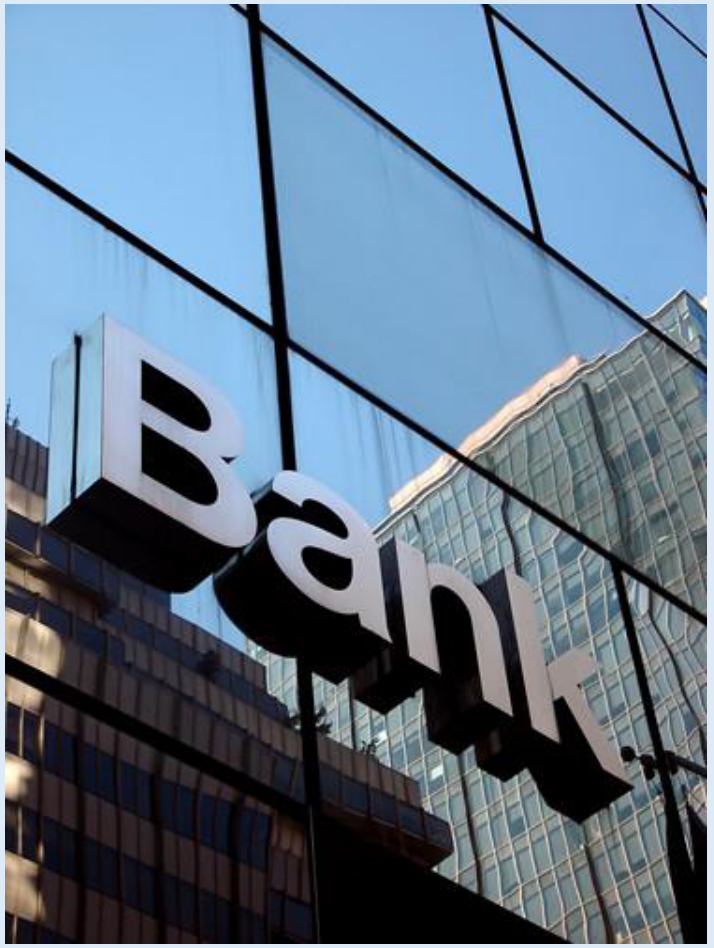
- Agriculture

AI in the World

- Public Health and Healthcare

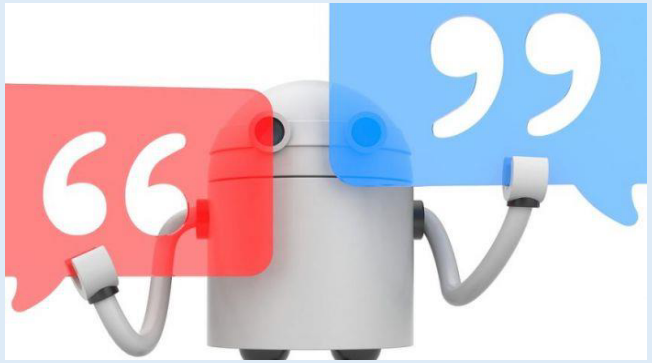
AI in the World

- Finance



AI in the World

- E-commerce chatbots



AI in the World

- Gaming, Virtual Reality (VR), and Augmented Reality (AR)

AI in the World

- Supply Chain & Pricing
- Job Applications
- Public Safety
- Energy Management
- Traffic Management
- Speech Enhancement
- Network Security
- Language Correction

AI in the World

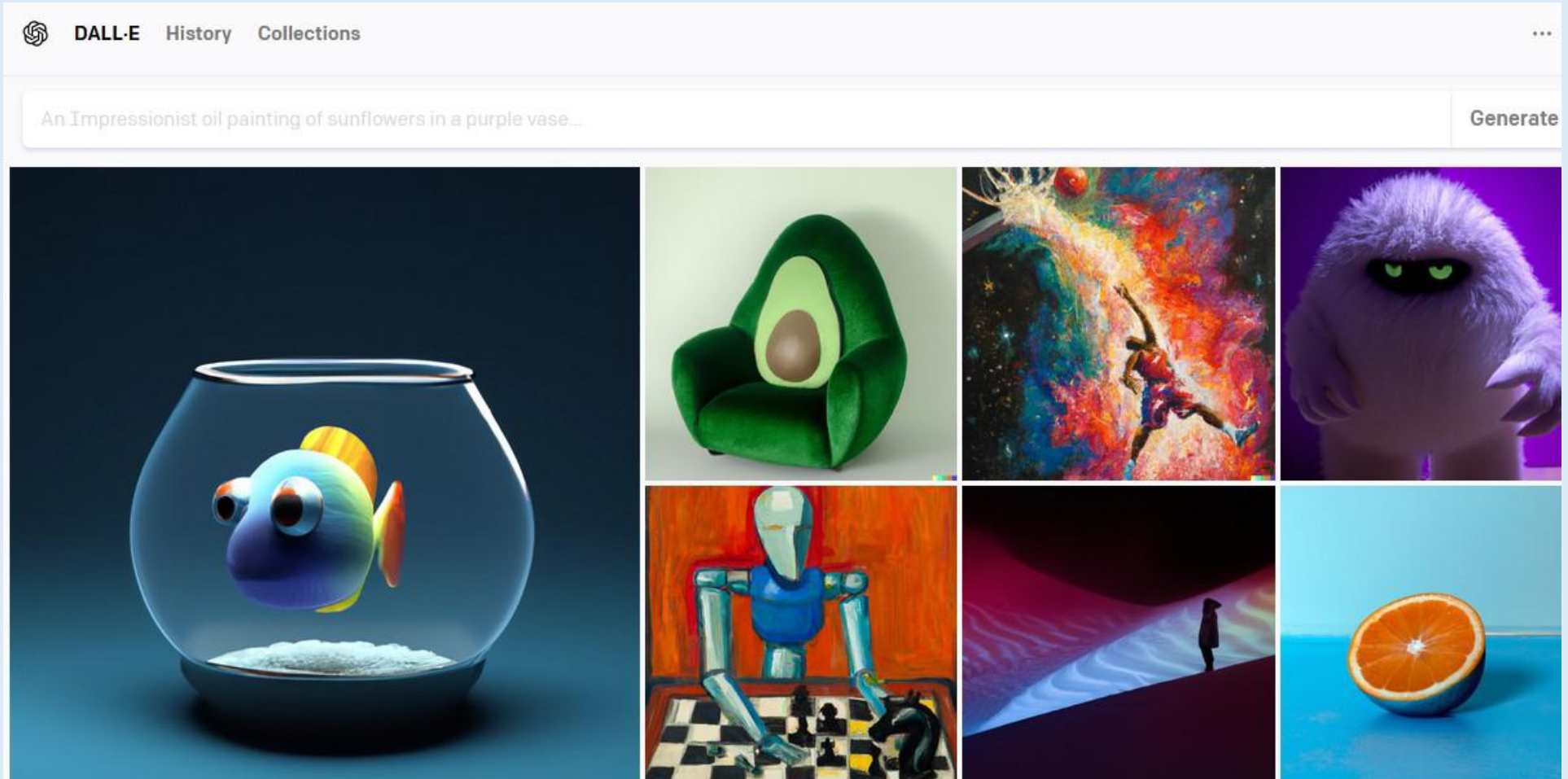
- ChatGPT 3.5/4 and Perplexity AI

Perplexity

Search & discovery with AI

AI in the World

- Dall-E 2



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Advantages and Disadvantages of AI

(+) Advantages of AI

- Efficiency and Speed
- Availability
- Error reduction when trained and optimized for specific tasks
- Automation of repetitive tasks
- Data analysis and insights

(-) Disadvantages of AI

- Confirmation bias
- Loss of privacy
- Transparency
- Authenticity
- Misinformation, and Harmful Content
- Security risks

Resources

- https://www.zdnet.com/article/what-is-ai-heres-everything-you-need-to-know-about-artificial-intelligence/
- https://openai.com/
- https://www.perplexity.ai/

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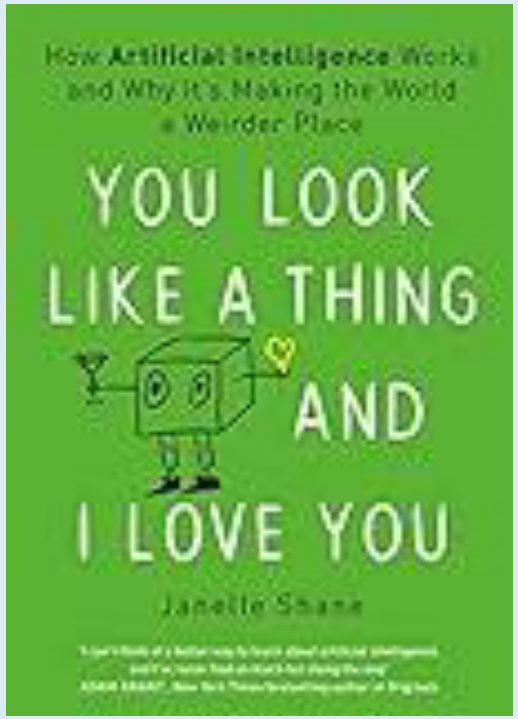
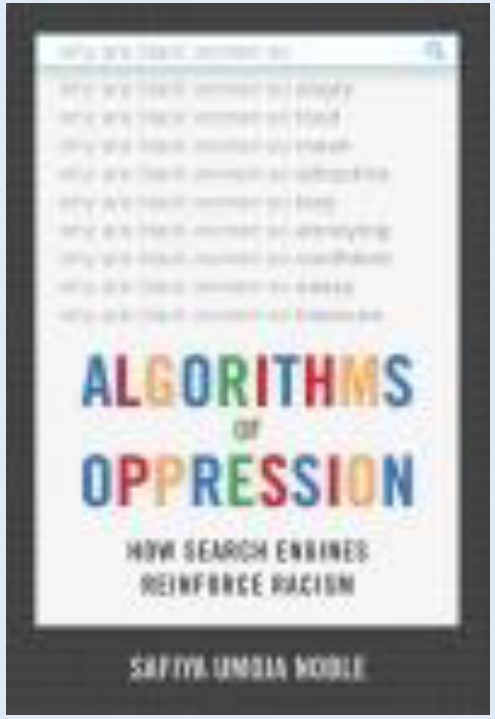
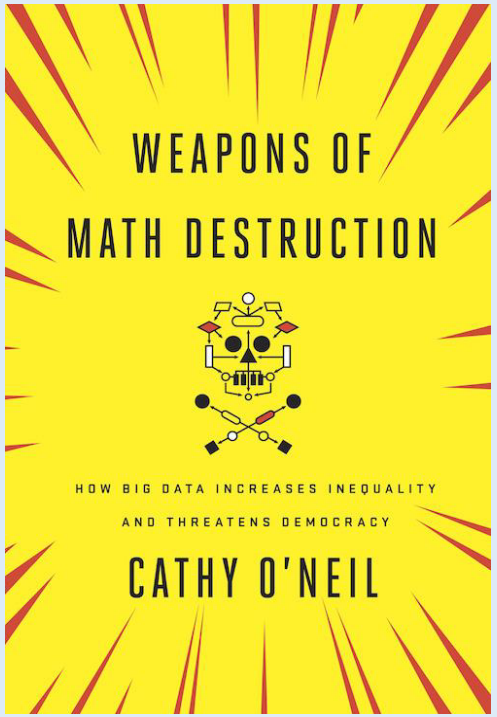
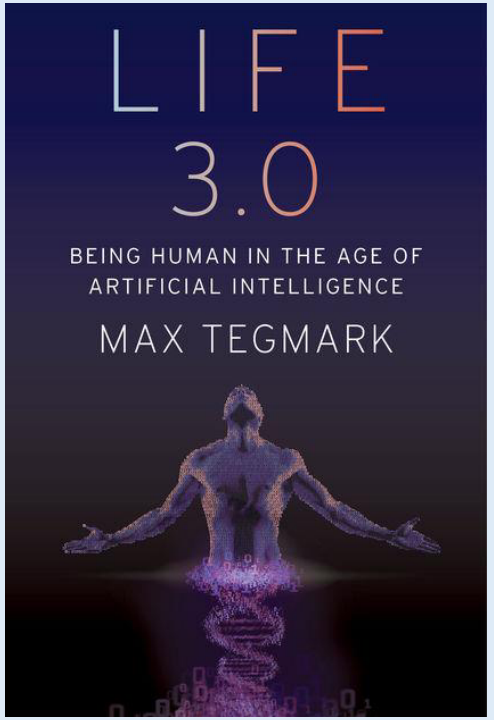
Reading List









Thank you!

Questions?

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