

Introduction to Machine Learning

Philosophy of ML & AI

Ashley Gao

William & Mary

December 4, 2023

AI & ML in Ancient Times

- The idea of AI & ML can be traced to ancient Greece & Rome (but it is not clear where it originated)!



- Hephaestus, who created Talos

- Pygmalion, who created Galatea

Hephaestus and Talos

- ... *not in the whole of the kingly art, but in one subsidiary to the kingly, enough for presiding in law courts; so that he was spoken of as a good judge. For Minos used him as guardian of the law in the city, and Talos as the same for the rest of Crete. For Talos thrice a year made a round of the villages, guarding the laws in them, by holding their laws inscribed on brazen tablets, which gave him his name of “brazen.”* - Plato, *Minos*

Hephaestus and Talos

- Hephaestus, who created Talos
 - Creator and Creation
 - Autonomy and Free Will
 - The Role of Technology in Society
- Talos, created by Hephaestus
 - Artificial Sentience
 - Human-Machine Boundaries
 - Morality and Ethics
 - The Problem of Control

Pygmalion and Galatea

- ... *Pygmalion had seen them (the Propoetides), spending their lives in wickedness, and, offended by the failings that nature gave their hearts, he lived as a bachelor, without a wife or partner for his bed. But, with wonderful skill, he carved a figure, brilliantly, out of snow-white ivory, no mortal woman, and fell in love with his own creation.* - Ovid, *Metamorphoses*

Pygmalion and Galatea

- Pygmalion, who created Galatea
 - Creator and Creation Relationship
 - Perfection and Flaw
 - Anthropomorphization of Inanimate Objects
- Galatea, created by Pygmalion
 - Consciousness and Sentience
 - Ethical Creation
 - Transformative Power of Emotions
 - The Ideal vs. the Real:

Animated Artefacts

- *Hyakki Tsurezure Bukuro* (“The Illustrated Bag of One Hundred Random Haunted Artefacts” or “A Horde of Haunted Housewares”).
- Hand-scrolls illustrated by Toriyama Sekien (1712 - 1788).



Animated Artefacts

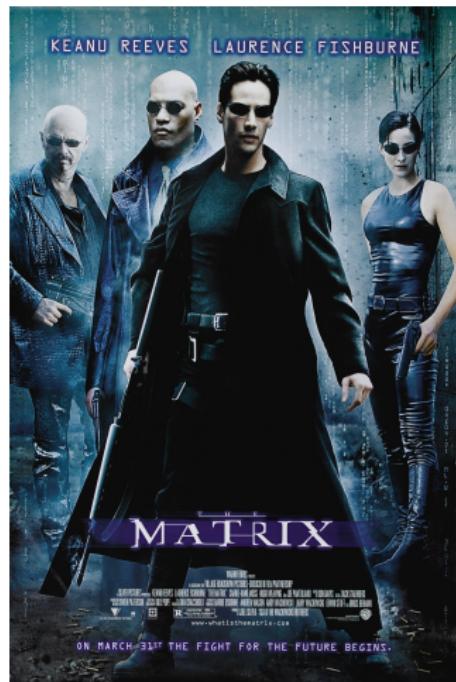
- *Koto-furunushi* illustrated by Toriyama Sekien (1712 - 1788).
- Said to be the music instrument of Emperor Keikō (71–130).



Idea Shift on Artificial intelligence



● The Terminator (1984)



● The Matrix (1999)

Idea Shift on Artificial intelligence

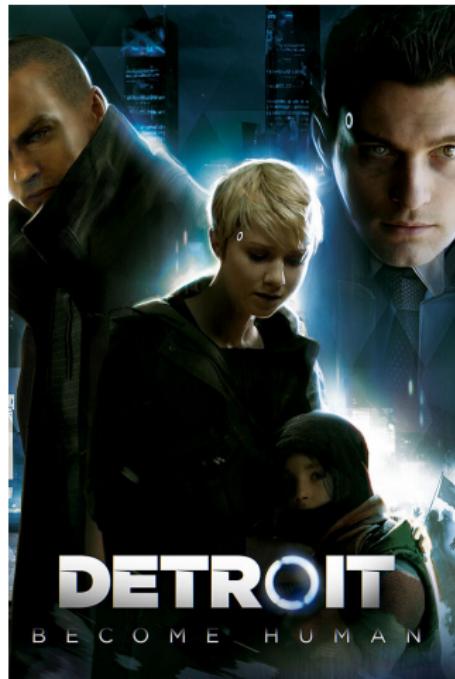
- The Mass Effect Trilogy (2007)



Idea Shift on Artificial intelligence



- Mass Effect: Andromeda (2017)



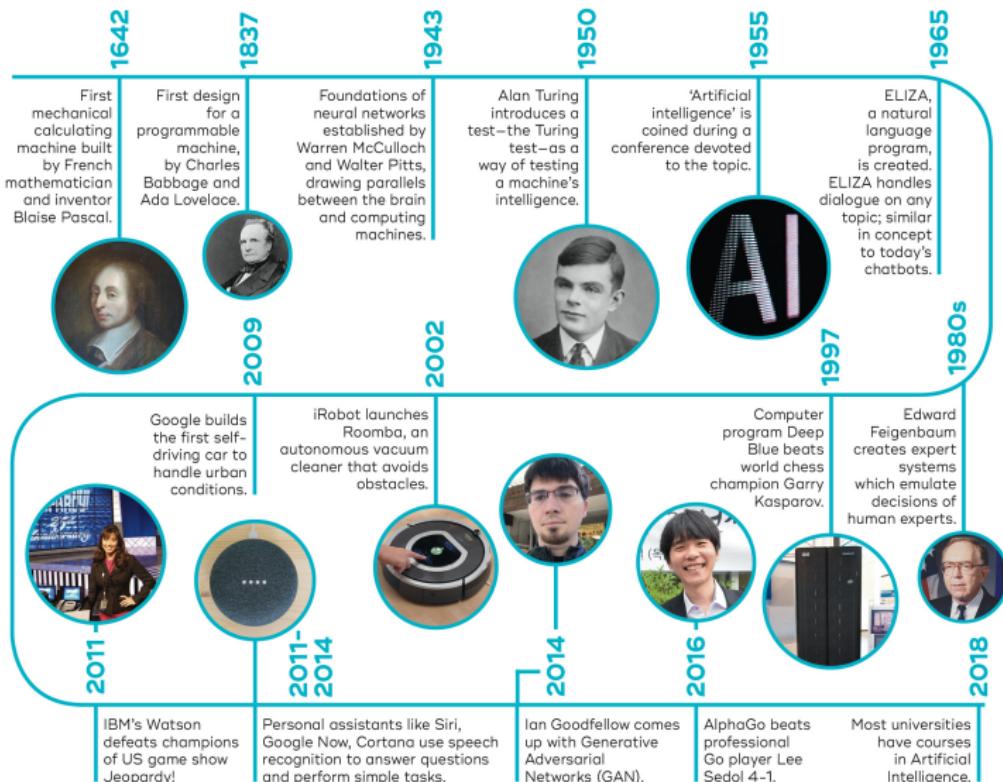
- Detroit: Become Human (2018)

What Now? Reality tries its best to catch up with sci-fi.

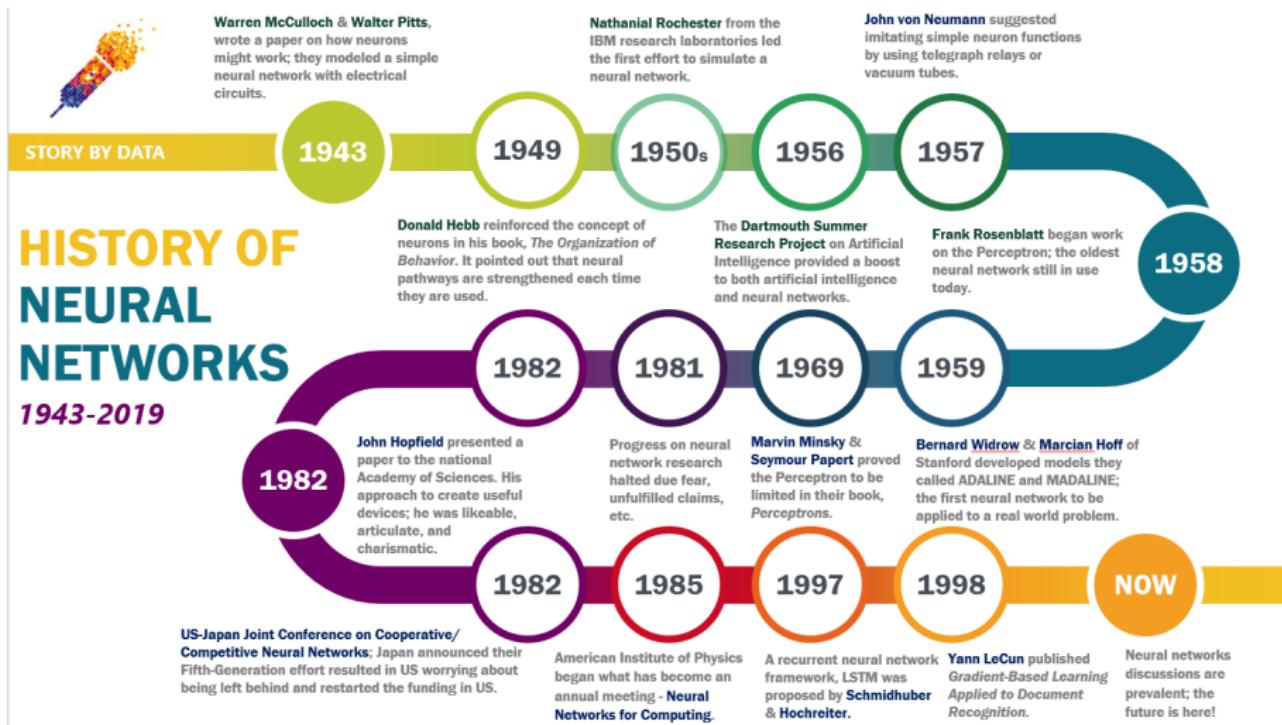
ChatGPT

- Text Generation
 - Generate human-like text based on input prompts
- Answering Questions
 - Explain concepts and provide information on a wide range of topics
- Text Summarization
 - Summarize long articles, documents, or webpages into shorter, more concise versions
- Coding Assistance
 - Help with programming-related queries and code generation.
- Storytelling
 - Create and continue stories or narratives.
- ...

History of Artificial Intelligence



History of Neural Network (High-Level)



History of Neural Network (Low-Level)

