

History of Artificial Intelligence

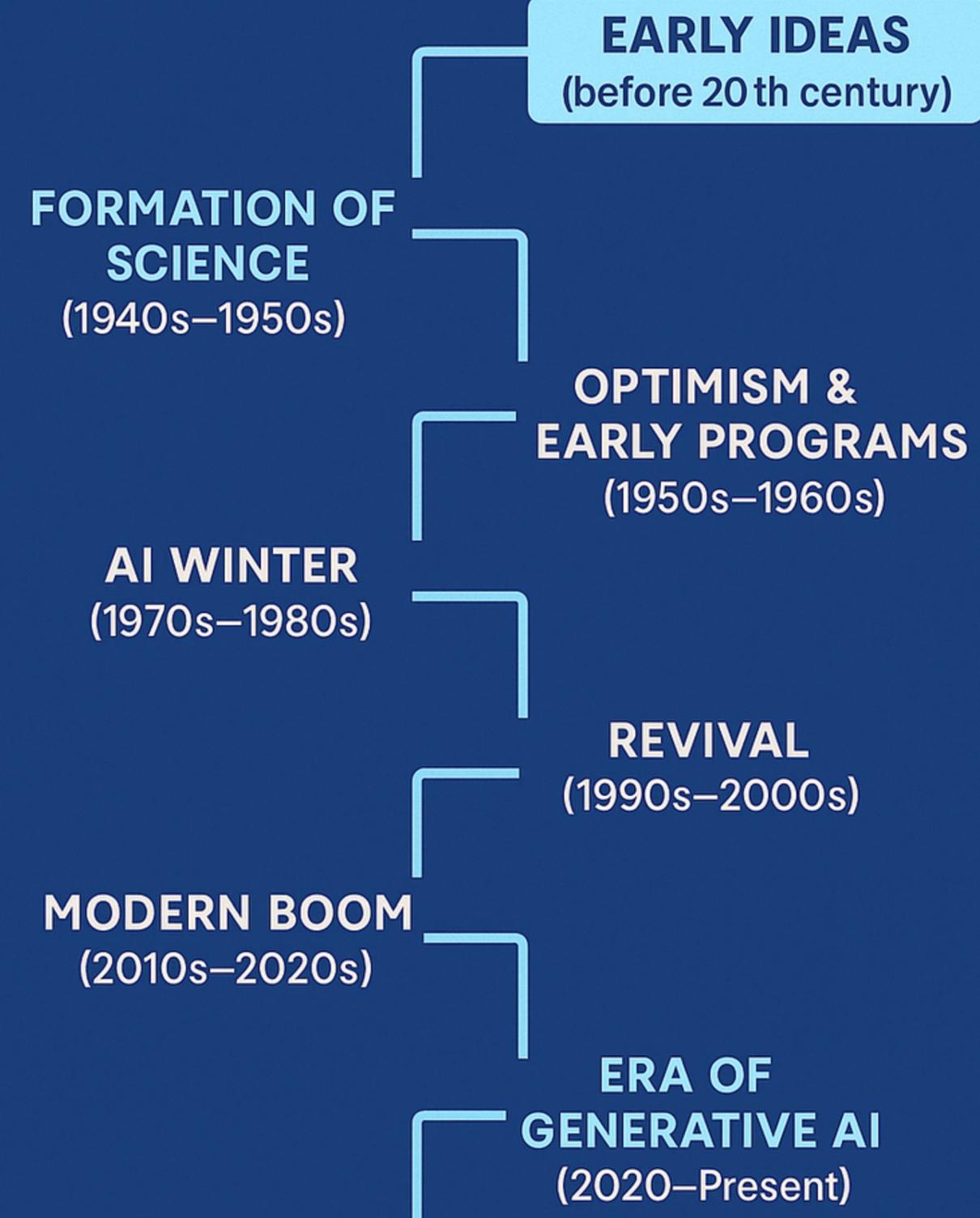
Alymbek



History of Artificial Intelligence

- Early Ideas (before 20th century)
- Formation of Science (1940s–1950s)
- Optimism & Early Programs (1950s–1960s)
- AI Winter (1970s–1980s)
- Revival (1990s–2000s)
- Modern Boom (2010s–2020s)
- Era of Generative AI (2020–Present)

HISTORY OF AI





First mentions

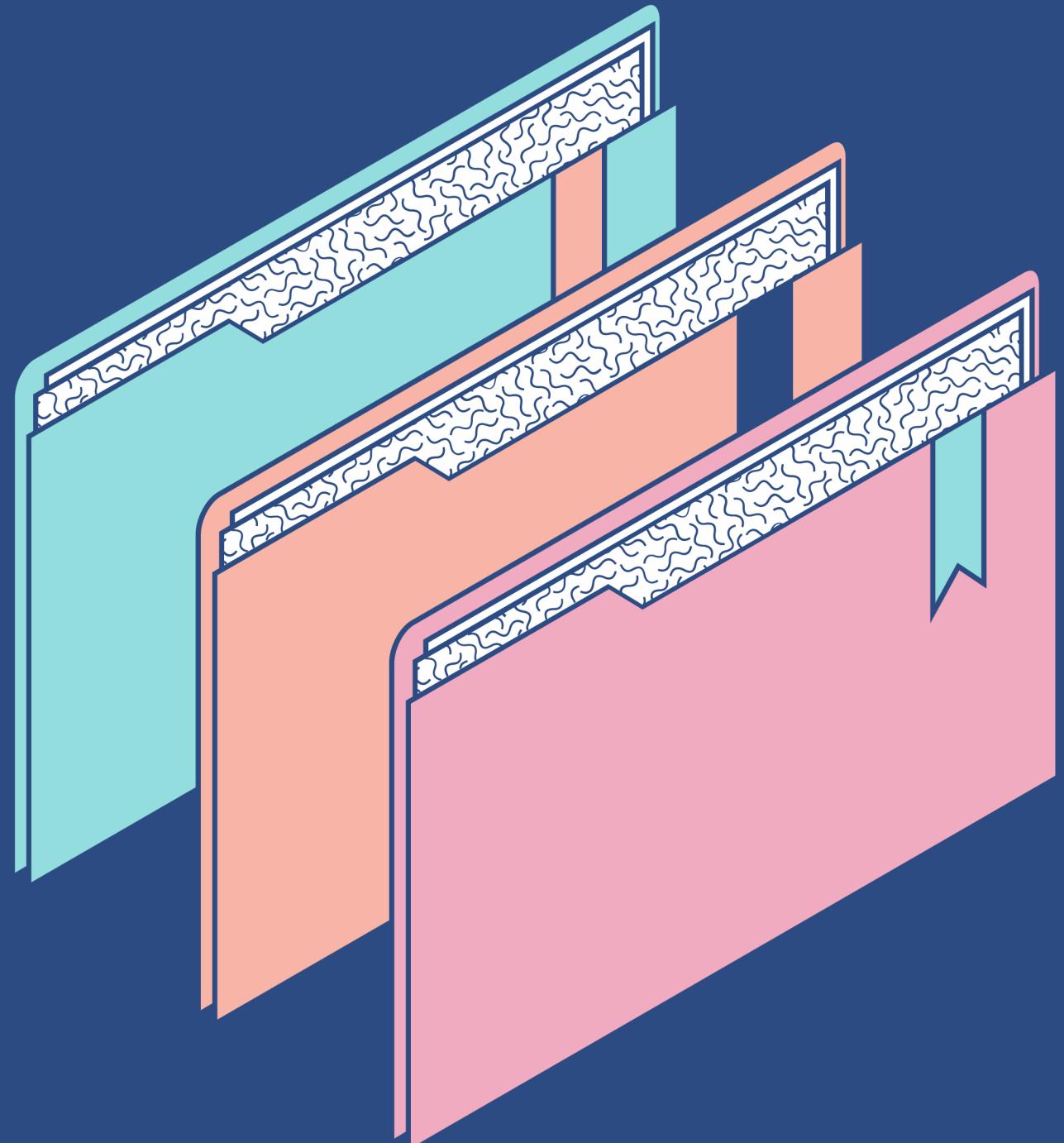
ANCIENT GREECE

- Talos, a bronze giant created by Hephaestus, is mentioned in myths. He patrolled the Crete island and threw stones at enemy ships
- Hephaestus also created "mechanical assistants" - golden maidens who helped him in the forge.

CHINA

- The book "Le-tzu" (4th century BC) describes an episode where the inventor Yang Shi presented the emperor with a mechanical man who could sing and move.

First mentions



Before this, we learned where the first mentions of mechanisms with artificial intelligence were, but is this really true?

-Not really.

Yeah, they can perform actions themselves, but they are just robots-automatons that do what they were programmed to do. They did not have the ability to think, analyze and create. These are just the first fantasies of something similar to AI

We're looking for mentions of mechanisms that possess their own intelligence and are capable of making decisions.

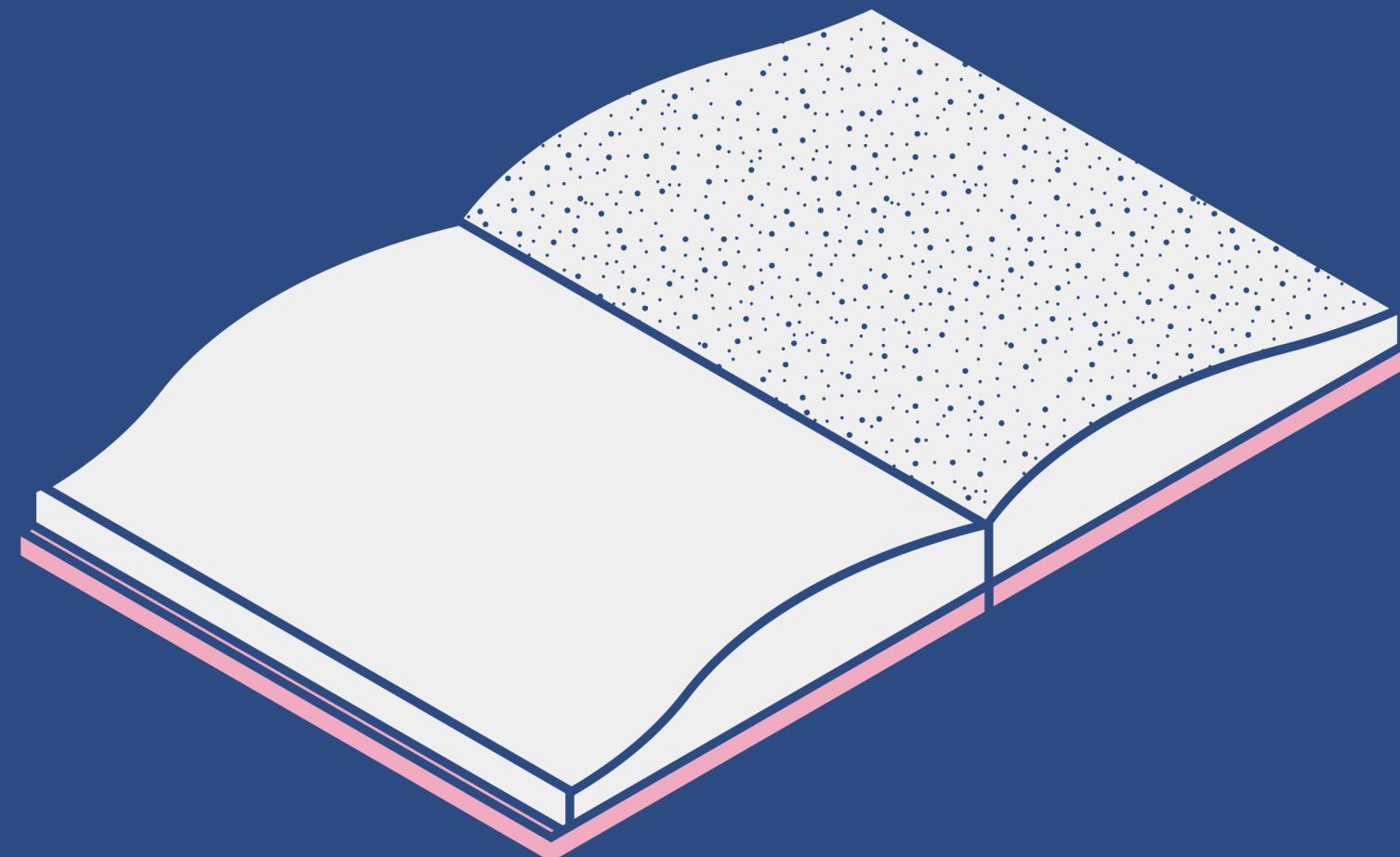
Real first mentions

RAYMOND LULL (XIII CENTURY, SPAIN)

- In Ars Magna, he developed a "logical machine" - a combination of rotating disks that were supposed to generate new statements and reasoning.
- This is the first example of the idea: a machine can create new knowledge, and not just repeat one action.

GOTTFRIED WILHELM LEIBNIZ (17TH CENTURY, GERMANY)

- He dreamed of a “universal computing machine of the mind” that could solve any logical and philosophical problems.
- Leibniz invented the binary system and believed that all thoughts could be reduced to calculations. This is one of the first ideas of artificial intelligence as a universal reasoner.



Real first mentions

CHARLES BABBAGE AND ADA
LOVELACE (19TH CENTURY, ENGLAND)

- Babbage invented the "Analytical Engine" (the ancestor of computers).
- Ada Lovelace wrote that such a machine could not only count numbers, but also, theoretically, create music or art.
- That is, they were the first to suggest that a machine could be "creative" and not just perform fixed tasks.

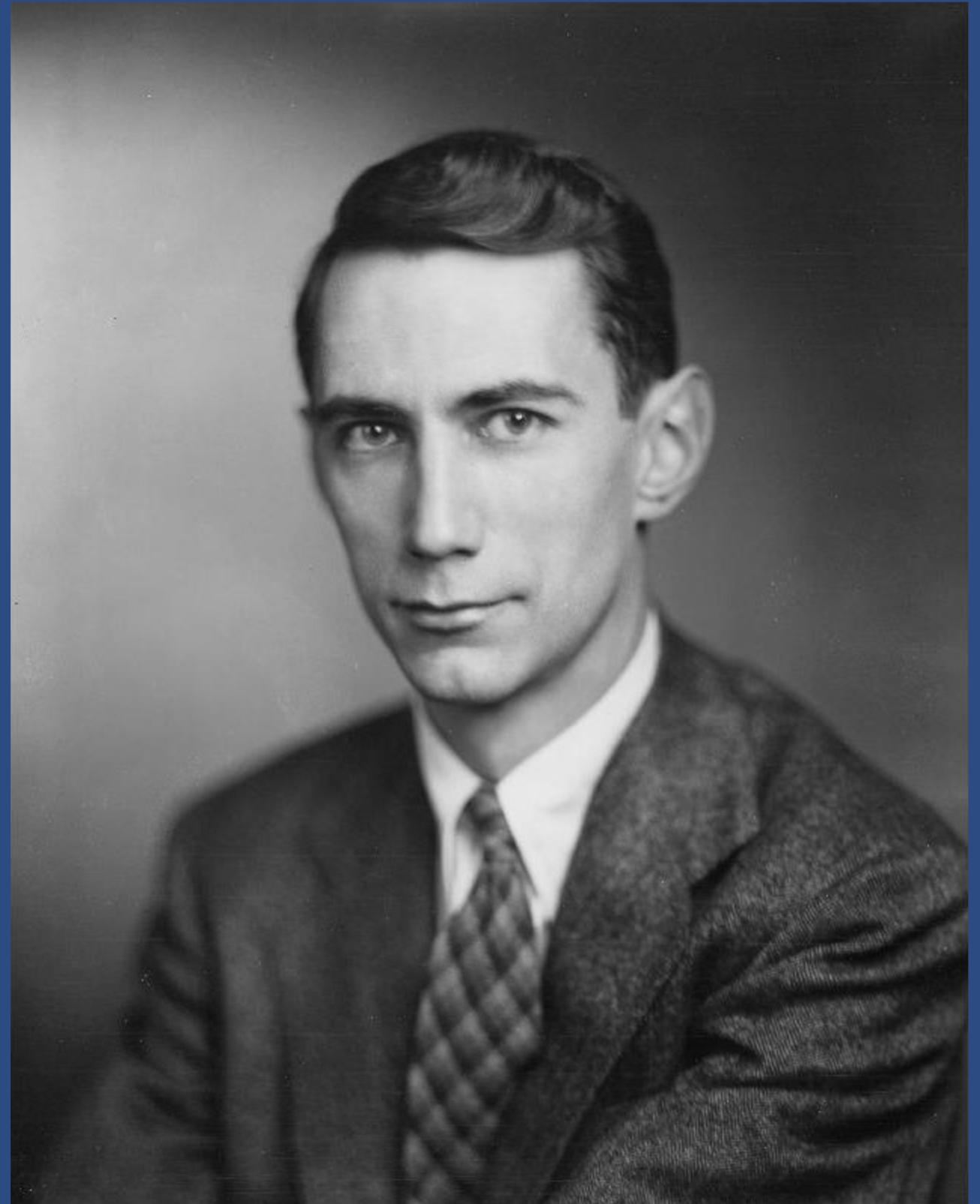


Formation of Science

At this time, mathematics, logic and cybernetics are actively developing.

The idea appears that thinking can be considered as a process of calculations, and the brain as a kind of "biological computer".

Claude Shannon (1948) publishes the work "A Mathematical Theory of Communication", which lays the foundations of information theory - the most important part of future AI.



Formation of Science

The Dartmouth Conference (1956)

John McCarthy, Marvin Minsky, Claude Shannon, and Nathaniel Rochester organized the famous conference.

It was there that the term "Artificial Intelligence" was officially used for the first time.

The conference discussed topics such as:

- whether a machine can be taught to "learn";
- how to formalize reasoning;
- whether a machine can be made to use language.

This meeting is considered the birth of AI as a distinct scientific field.

**1956 Dartmouth Conference:
The Founding Fathers of AI**



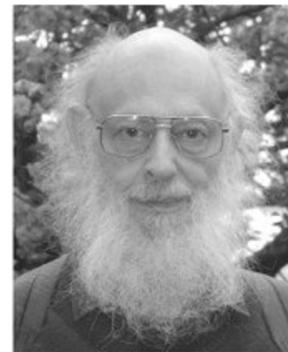
John McCarthy



Marvin Minsky



Claude Shannon



Ray Solomonoff



Alan Newell



Herbert Simon



Arthur Samuel



Oliver Selfridge



Nathaniel Rochester



Trenchard More

This was covered in the previous presentation, but the conference had too significant an impact on history to leave it out.



Optimism and Early Programs (1950s–1960s)

After the Dartmouth Conference (1956), researchers believed that machines could reach human-level intelligence within a few decades.

Many thought that it would be enough to “program thinking” using rules and logic in order to create an intelligent machine.

First programs

Logic Theorist (1955–1956)

Developed by: Allen Newell and Herbert Simon.

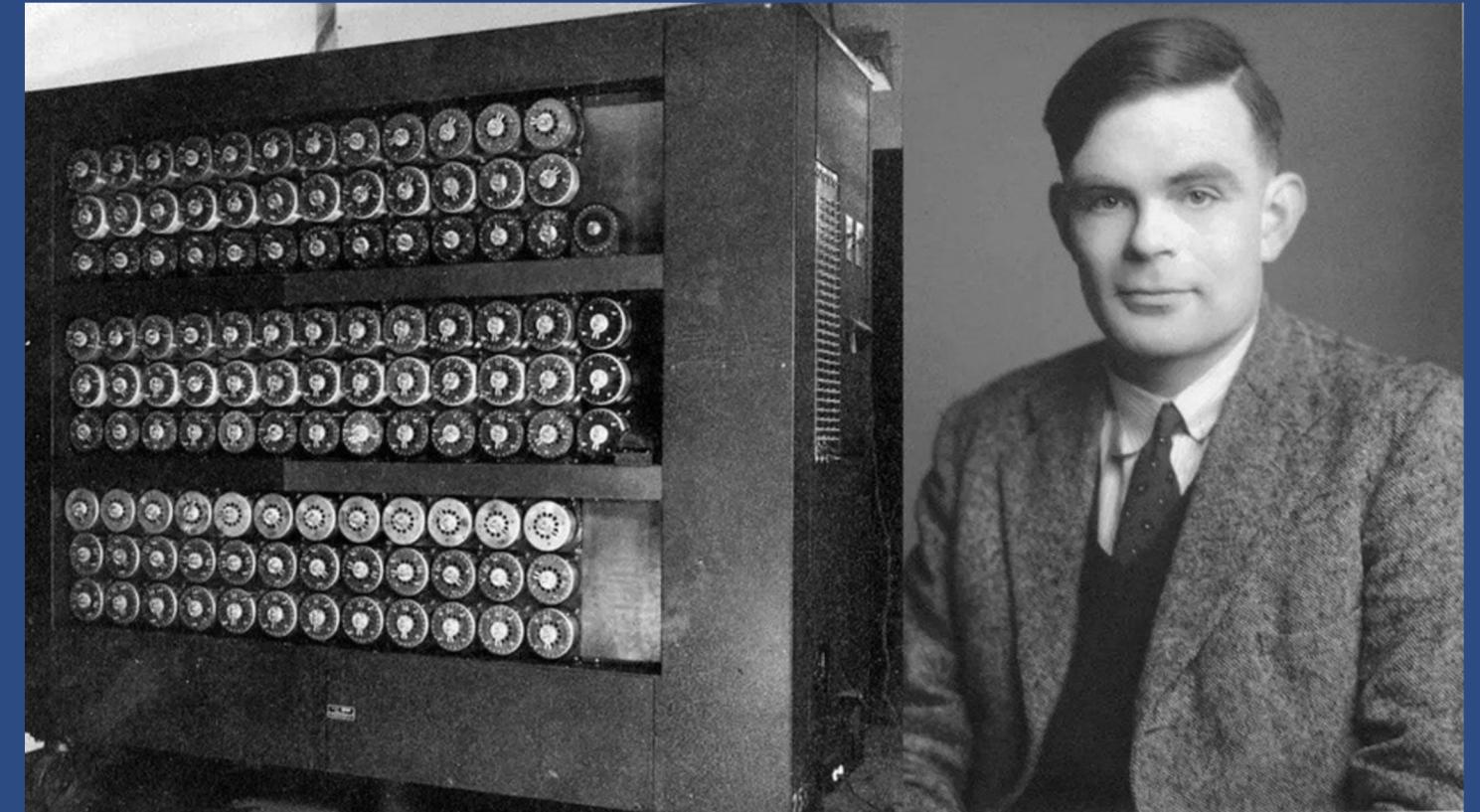
It was the first program capable of proving mathematical theorems (based on Principia Mathematica by Russell and Whitehead).

It is considered the first artificial intelligence program.

Chess Programs

By the late 1950s, experiments with chess programs had begun.

They couldn't compete with strong human players, but they were able to calculate moves and strategically choose the best one.



«AI Winter» (1970s–1980s)

Reasons

- Expectations were too high after the initial successes.
- Computers at the time were weak — with limited memory and processing power.
- Algorithms couldn't scale to handle real-world problems.

Consequences

- Funding was drastically reduced.
- Many research projects were shut down.
- Interest in the topic declined, and the term “AI” was even avoided in scientific grant proposals.



Revival (1990s–2000s)

Reasons for the Revival

- More powerful computers: Advances in processors and graphics made it possible to tackle more complex problems.
- Large databases: A massive amount of digital information had accumulated, essential for training AI systems.
- Machine learning algorithms: More practical methods emerged (e.g., Support Vector Machines — SVM).



Major Achievements

The Return of Neural Networks

In 1986, Rumelhart, Hinton, and Williams described the backpropagation algorithm.

By the 1990s, it began to be actively used for training multilayer neural networks.

Deep Blue (IBM, 1997)

A supercomputer developed by IBM.

It became the first machine to defeat world chess champion Garry Kasparov.

This marked a symbolic moment — proof that machines could beat humans in an intellectual game.



Modern Boom (2010s–2020s)



AlphaGo

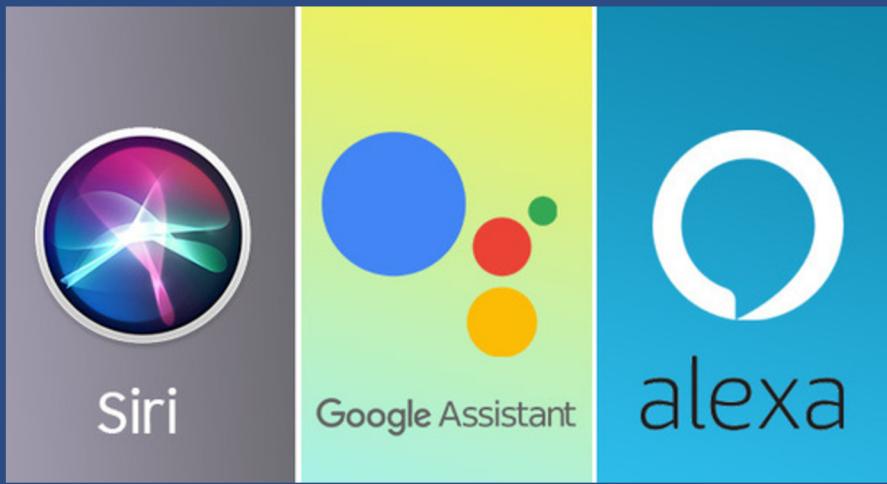
AlphaGo (2016)

Developed by DeepMind, AlphaGo defeated world champion Lee Sedol in the game of Go



Translation and Everyday Applications

Voice assistants like Siri, Alexa, and Google Assistant



AI in Medicine and Business

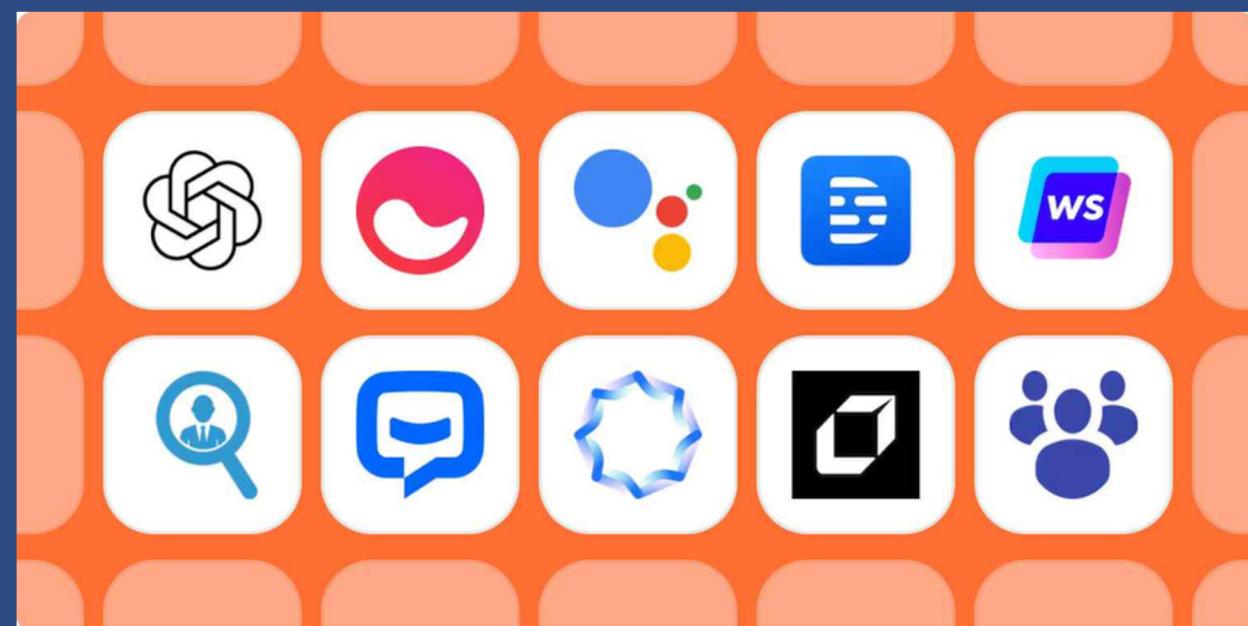


Conclusion: The Era of Possibilities



From myth to science — the journey of artificial intelligence has taken thousands of years.

Each stage — from mechanical automata to neural networks — brought us closer to modern AI.



Today, artificial intelligence is not just a tool, but a partner in business, science, and creativity.

Tomorrow, we stand on the threshold of a new era, where AI could transform how we learn, work, and create.

THE FUTURE OF AI

JUST BEGINNING

