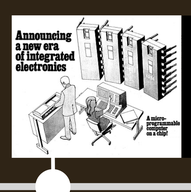


A computer runs a program for the first time

1948

1950



Introduction of the microprocessor

1971

Turing predicted that the test would be passed by 2000.

2000

ChatGPT announced

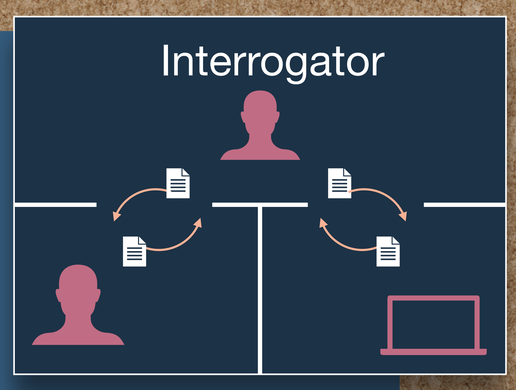
2022

2025

75th anniversary of the Turing Test

"Computing Machinery and Intelligence" published, introducing the Turing Test

The Imitation Game



You are the Interrogator, interacting with two entities. One is a machine and one is human.

Communication takes place only through the exchange of written texts -- you cannot see or hear the other participants.

After a certain duration, you must guess which entity is human.

If you select the machine, the machine **wins the imitation game**.

The **Turing Test** – a test for intelligence in machines – was introduced in Turing's 1950 paper.

The Turing Test is passed if a digital computer can win the Imitation Game against a significant percentage of interrogators.



Alan Turing

That's hard to answer!

Is AI really *thinking*?

But, we can agree that carrying on a **conversation** is intelligent **behavior**, right?

So let's test for that.

The impact of this work extends far beyond its use as a litmus test.
The Turing Test has influenced research in both:

studies of **thinking** and the study of **digital computers**

philosophy of mind

Philosophers discuss the Turing Test in the context of pursuing questions about the nature of mind, intelligence, and thinking. The test, and contemporary variations on it, are used to explore assumptions about what kinds of things have minds, or thoughts, and what criteria we should use to determine that. Philosophers of mind have also been inspired by Turing Machines to think of the mind as a computer and embrace computational approaches to mind and thinking. Computationalism has been influential in the cognitive sciences and philosophy, as has a rival theory: connectionism. Philosophers approach this, not as a debate over which approach works best for AI, but as a debate over the very nature of thinking, understanding, and mind.

cognitive psychology

Cognitive psychologists define thinking as a series of cognitive operations over mental representations, though there is debate about the appropriate level of representation:

- *Computationalists* conceptualize mental processes as a series of logical operations on symbols according to rules, similar to how computers execute algorithms, inspired by Turing's mathematical theory of computation (i.e., Turing machines)
- *Connectionists* conceptualize mental processes as emergent properties of artificial neural network models -- units and their weighted connections, inspired by neural networks in the brain

Experimental computationalists and connectionists test their theories by comparing the predictions their models make to actual human behavior patterns. LLMs are based on connectionist models of thinking; they work by predicting upcoming tokens based on statistical probabilities; some computationalists largely believe that LLMs cannot begin to approximate human thinking without 'learning' symbolic representations.

computer science

Turing's paper is credited as the inspiration for the field of Artificial Intelligence (AI). By proposing the idea that computers could exhibit intelligent behavior, he licensed researchers to explore the possibility of computational models of tasks like playing chess. Paradoxically, early research in AI was most successful at producing rational, rather than human, behavior, and 'chatbots' failed to produce convincing results except in highly specific scenarios.
As advances in algorithms, hardware and data made Large Language Models possible in the early 2020s, passing the Turing Test became a real possibility. The test is now seen as a meaningful practical benchmark, and a useful starting point for theorizing about these novel systems.

75 years later, **is the Turing Test still relevant?**

Think of some intelligent beings you know. What are some ways in which they differ from LLMs? Are these essential to their intelligence?

- Many tasks, once solved using AI methods, are no longer perceived as requiring intelligence. This is called the 'AI Effect'. If Turing was aware of the technological advances that have occurred in the last 75 years, would he still propose this test for intelligence?
- If you were participating in a Turing Test simulation against an LLM, what would you say to seem "more human" to the interrogator?