Artificial Intelligence History
Alan Turing

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Why

1. Alan Turing defined the "Turing Test", still under considerable debate if it is "the" test to AI.
   https://www.csee.umbc.edu/courses/471/papers/turing.pdf

2. Turing was a pioneer of connectionism. What is connectionism? It is about how the brain (neurons) are interconnected.
   http://www.alanturing.net/turing_archive/pages/Reference%20Articles/connectionism/Turing%27santicipation.html

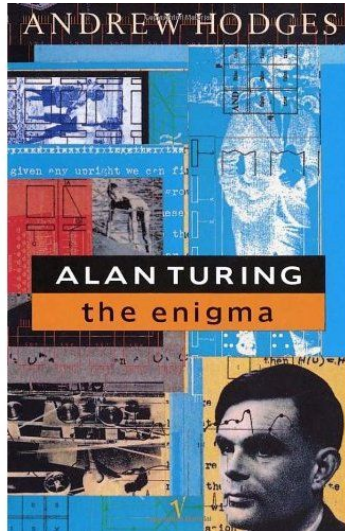3. But because Turing's (short) life was extraordinary and very seldom told in full

Life

The movie… yes, ok, interesting, but in many areas, an invention
https://time.com/3609585/the-true-story-of-the-imitation-game/

https://www.washingtonpost.com/national/health-science/what-imitation-game-didnt-tell-you-about-alan-turings-greatest-triumph/2015/02/20/ffd210b6-b606-11e4-9423-f3d0a1ec335c_story.html
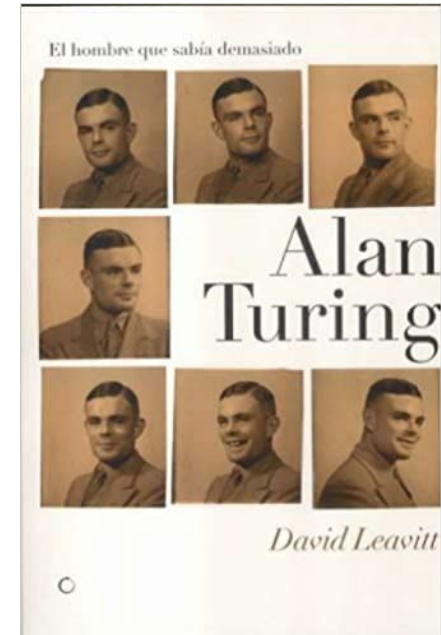

DESCIFRAR EL CÓDIGO. GANAR LA GUERRA

★★★★★
INTENSO, IMPECABLE, ÚNICO. DE ÓSCAR.
VARIETY

★★★★★
GANADORA Y CONMOVEDORA. UNA GRAN PELÍCULA.
HOLLYWOOD REPORTER

★★★★★
UNA MAGISTRAL INTERPRETACIÓN DE BENEDICT CUMBERBATCH.
NEW YORK POST

EXCEPCIONAL.
ELLE

★★★★★
THE INDEPENDENT

★★★★★
GLAMOUR

BENEDICT CUMBERBATCH   KEIRA KNIGHTLEY

THE IMITATION GAME
(DESCIFRANDO ENIGMA)

Life

Go to the source

https://www.turing.org.uk/
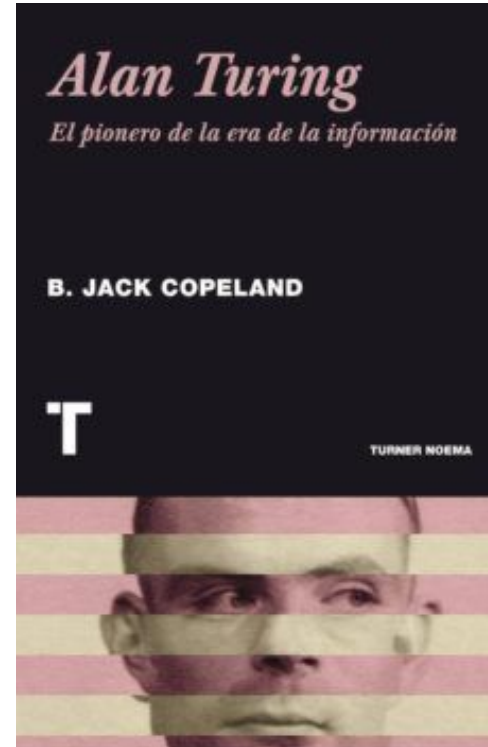
http://www.alanturing.net/index.htm

though I liked David Leavitt's shortcut about it:

Life

More recent and still available.

Copeland is the author of The Essential Turing and in previous links you can find many papers on his studies about Turing as a pioneer of connectionism

Let's go to the '30s

An example of Morse code as it could be intercepted: https://allworldwars.com/image/104/morse.mp3

Enigma machine:
https://www.youtube.com/watch?v=G2_Q9FoD-oQ
https://www.youtube.com/watch?v=d2NWPG2gB_A
https://en.wikipedia.org/wiki/Enigma_rotor_details

how Bletchley Park's bombes worked to break Enigma:
https://www.youtube.com/watch?v=LH2H7v4HTJ4

If you want to watch a 'realistic biopic' watch this:

The Strange Life and Death of Dr Turing, BBC, 1992

https://www.youtube.com/watch?v=Z-sTs2o0VuY

simply because many of the colleagues of Turing speak here, so you'll know first hand about his work….

If you want to watch a 'realistic biopic' watch this:

Including Joan Clarke's (later Joan Murray) own memories about her relationship with Turing.

21:00 onwards

The imitation game

A. M. Turing (1950) Computing Machinery and Intelligence. *Mind 49:* **433-460.**

COMPUTING MACHINERY AND INTELLIGENCE

By A. M. Turing

1. The Imitation Game

I propose to consider the question, "Can machines think?" This should begin with definitions of the meaning of the terms "machine" and "think." The definitions might be framed so as to reflect so far as possible the normal use of the words, but this attitude is dangerous, If the meaning of the words "machine" and "think" are to be found by examining how they are commonly used it is difficult to escape the conclusion that the meaning and the answer to the question, "Can machines think?" is to be sought in a statistical survey such as a Gallup poll. But this is absurd. Instead of attempting such a definition I shall replace the question by another, which is closely related to it and is expressed in relatively unambiguous words.

The new form of the problem can be described in terms of a game which we call the 'imitation game." It is played with three people, a man (A), a woman (B), and an interrogator (C) who may be of either sex. The interrogator stays in a room apart front the other two. The object of the game for the interrogator is to determine which of the other two is the man and which is the woman. He knows them by labels X and Y, and at the end of the game he says either "X is A and Y is B" or "X is B and Y is A." The interrogator is allowed to put questions to A and B thus:

C: Will X please tell me the length of his or her hair?

The imitation game

other two. The object of the game for the interrogator is to determine which of the other two is the man and which is the woman. He knows them by labels X and Y, and at the end of the game he says either "X is A and Y is B" or "X is B and Y is A." The interrogator is allowed to put questions to A and B thus:

C: Will X please tell me the length of his or her hair?

Now suppose X is actually A, then A must answer. It is A's object in the game to try and cause C to make the wrong identification. His answer might therefore be:

"My hair is shingled, and the longest strands are about nine inches long."

In order that tones of voice may not help the interrogator the answers should be written, or better still, typewritten. The ideal arrangement is to have a teleprinter communicating between the two rooms. Alternatively the question and answers can be repeated by an intermediary. The object of the game for the third player (B) is to help the interrogator. The best strategy for her is probably to give truthful answers. She can add such things as "I am the woman, don't listen to him!" to her answers, but it will avail nothing as the man can make similar remarks.

We now ask the question, "What will happen when a machine takes the part of A in this game?" Will the interrogator decide wrongly as often when the game is played like this as he does when the game is played between a man and a woman? These questions replace our original, "Can machines think?"

The imitation game

(4) The Argument from Consciousness

This argument is very, well expressed in Professor Jefferson's Lister Oration for 1949, from which I quote. "Not until a machine can write a sonnet or compose a concerto because of thoughts and emotions felt, and not by the chance fall of symbols, could we agree that machine equals brain-that is, not only write it but know that it had written it. No mechanism could feel (and not merely artificially signal, an easy contrivance) pleasure at its successes, grief when its valves fuse, be warmed by flattery, be made miserable by its mistakes, be charmed by sex, be angry or depressed when it cannot get what it wants."

This argument appears to be a denial of the validity of our test. According to the most extreme form of this view the only way by which one could be sure that machine thinks is to be the machine and to feel oneself thinking. One could then describe these feelings to the world, but of course no one would be justified in taking any notice. Likewise according to this view the only way to know that a man thinks is to be that particular man. It is in fact the solipsist point of view. It may be the most logical view to hold but it makes communication of ideas difficult. A is liable to believe "A thinks but B does not" whilst B believes "B thinks but A does not." instead of arguing continually over this point it is usual to have the polite convention that everyone thinks.

The imitation game

(5) Arguments from Various Disabilities

These arguments take the form, "I grant you that you can make machines do all the things you have mentioned but you will never be able to make one to do X." Numerous features X are suggested in this connexion I offer a selection:

Be kind, resourceful, beautiful, friendly, have initiative, have a sense of humour, tell right from wrong, make mistakes, fall in love, enjoy strawberries and cream, make some one fall in love with it, learn from experience, use words properly, be the subject of its own thought, have as much diversity of behaviour as a man, do something really new.

No support is usually offered for these statements. I believe they are mostly founded on the principle of scientific induction. A man has seen thousands of machines in his lifetime. From what he sees of them he draws a number of general conclusions. They are ugly, each is designed for a very limited purpose, when required for a minutely different purpose they are useless, the variety of behaviour of any one of them is very small, etc., etc. Naturally he concludes that these are necessary properties of machines in general. Many of these limitations are associated with the very small storage capacity of most machines. (I am assuming that the idea of storage capacity is extended in some way to

The imitation game

In the process of trying to imitate an adult human mind we are bound to think a good deal about the process which has brought it to the state that it is in. We may notice three components.

(a) The initial state of the mind, say at birth,

(b) The education to which it has been subjected,

(c) Other experience, not to be described as education, to which it has been subjected.

Instead of trying to produce a programme to simulate the adult mind, why not rather try to produce one which simulates the child's? If this were then subjected to an appropriate course of education one would obtain the adult brain. Presumably the child brain is something like a notebook as one buys it from the stationer's. Rather little mechanism, and lots of blank sheets. (Mechanism and writing are from our point of view almost synonymous.) Our hope is that there is so little mechanism in the child brain that something like it can be easily programmed. The amount of work in the education we can assume, as a first approximation, to be much the same as for the human child.

We have thus divided our problem into two parts. The child programme and the education process. These two remain very closely connected. We cannot expect to find a good child machine at the first attempt. One must experiment with teaching one such machine and see how well it learns. One can then try another and see if it is better or worse. There is an obvious connection between this process and evolution, by the identifications

The imitation game

https://en.wikipedia.org/wiki/Turing_test

Predictions [edit]

Turing predicted that machines would eventually be able to pass the test; in fact, he estimated that by the year 2000, machines with around 100 MB of storage would be able to fool 30% of human judges in a five-minute test, and that people would no longer consider the phrase "thinking machine" contradictory.[5] (In practice, from 2009–2012, the Loebner Prize chatterbot contestants only managed to fool a judge once,[96] and that was only due to the human contestant pretending to be a chatbot.[97]) He further predicted that machine learning would be an important part of building powerful machines, a claim considered plausible by contemporary researchers in artificial intelligence.[70]

In a 2008 paper submitted to 19th Midwest Artificial Intelligence and Cognitive Science Conference, Dr. Shane T. Mueller predicted a modified Turing test called a "Cognitive Decathlon" could be accomplished within five years.[98]

By extrapolating an exponential growth of technology over several decades, futurist Ray Kurzweil predicted that Turing test-capable computers would be manufactured in the near future. In 1990, he set the year around 2020.[99] By 2005, he had revised his estimate to 2029.[100]

The Long Bet Project Bet Nr. 1 is a wager of $20,000 between Mitch Kapor (pessimist) and Ray Kurzweil (optimist) about whether a computer will pass a lengthy Turing test by the year 2029. During the Long Now Turing Test, each of three Turing test judges will conduct online interviews of each of the four Turing test candidates (i.e., the computer and the three Turing test human foils) for two hours each for a total of eight hours of interviews. The bet specifies the conditions in some detail.[101]

References (books, papers)

Copeland: The Essential Turing:Seminal Writings in Computing, Logic, Philosophy,Artificial Intelligence, and Artificial Life:Plus The Secrets of Enigma
http://www.cse.chalmers.se/~aikmitr/papers/Turing.pdf

Lorenz ciphers and the Colossus, by Tony Sale:
https://www.codesandciphers.org.uk/lorenz/

What Kind of Turing Test Did Turing Have in Mind?
http://tekhnema.free.fr/3Lasseguearticle.htm

References (documentaries on youtube)

Turing: Pioneer of the Information Age

https://www.youtube.com/watch?v=p7Lv9GxigYU&t=2620s

Colossus - The Greatest Secret in the History of Computing
https://www.youtube.com/watch?v=g2tMcMQqSbA

https://www.youtube.com/watch?v=QcaHpvznC7g&t=2368s

https://www.youtube.com/watch?v=VnzjPmNDom4&t=2s

https://www.youtube.com/watch?v=Yl6pK1Z7B5Q

References (documentaries on youtube)

Enigma!
https://www.youtube.com/watch?v=ybkkiGtJmkM
https://www.youtube.com/watch?v=zCn3GCOwmeI
https://www.youtube.com/watch?v=qn_BBQEjCxI
(Alan Turing's nephew -'Sir Dermot Turing' tells the story how enigma was broken)
The Story Of Cracking The Enigma Code In 2 Hours:
https://www.youtube.com/watch?v=8FDeLnxCOXA