ARTIFICIAL INTELLIGENCE

ECS170 Spring 2018
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975BC - King Mu of Zhou and Yan Shi

https://en.wikipedia.org/wiki/File:King_Mu_of_Zhou_%26_Queen_Mother_of_the_West.jpg

The king stared at the figure in astonishment. It walked with rapid strides, moving its head up and down, so that anyone would have taken it for a live human being. The artificer touched its chin, and it began singing, perfectly in tune. He touched its hand, and it began posturing, keeping perfect time...As the performance was drawing to an end, the robot winked its eye and made advances to the ladies in attendance, whereupon the king became incensed and would have had Yen Shih [Yan Shi] executed on the spot had not the latter, in mortal fear, instantly taken the robot to pieces to let him see what it really was. And, indeed, it turned out to be only a construction of leather, wood, glue and lacquer, variously coloured white, black, red and blue. Examining it closely, the king found all the internal organs complete—liver, gall, heart, lungs, spleen, kidneys, stomach and intestines; and over these again, muscles, bones and limbs with their joints, skin, teeth and hair, all of them artificial...The king tried the effect of taking away the heart, and found that the mouth could no longer speak; he took away the liver and the eyes could no longer see; he took away the kidneys and the legs lost their power of locomotion. The king was delighted.
From Lie Zi text

Shin Sangoku Musou Multi Raid 2

http://koei.wikia.com/wiki/King_Mu

400BC - Talos

was a giant automaton made of bronze to protect Europa in Crete from pirates and invaders. He circled the island's shores three times daily.

Ray Harryhausen film *Jason and the Argonauts*.

http://argonautikawargaming.blogspot.com/2013/12/talos.html

?? – Galatea

Pygmalion by Jean-Baptiste Regnault, 1786

Falconet, 1763

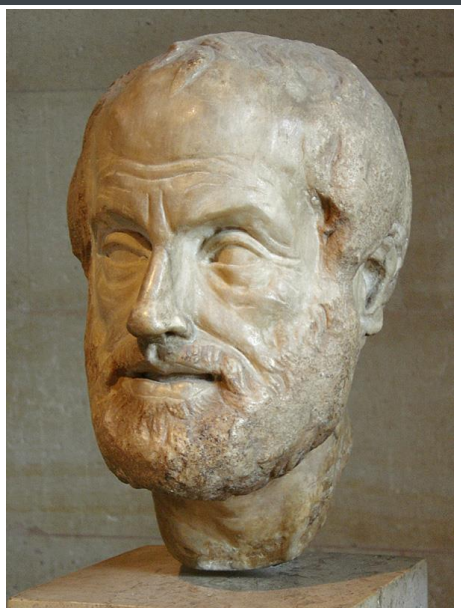
http://pr-if.org/play/galatea/

statue carved of ivory by Pygmalion of Cyprus, which then came to life

First named Galatea in post-classical writing.

https://emshort.wordpress.com/my-work/

384–322 BC – Syllogistic Logic



Book: *Categories* – 10 categories that contain every object of human apprehension.

Book: *Organon* – enumerates all things that can be the subject of predicates or propositions.

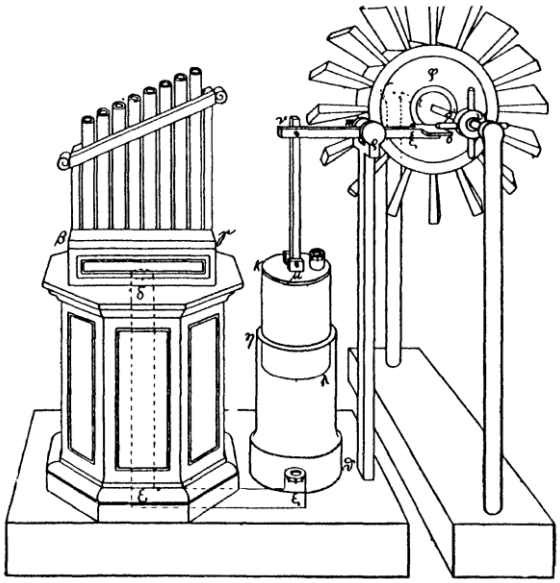
Aristotelean Logic or Syllagistic logic. Syllogism.\

Propositions
A: Universal Affirmative
This is a syllogism of the form: All X are Y, like the example: all men are shopaholic.
E: Universal Negative
This is the negative form of universal affirmative, which is a syllogism of the form: No X is Y, or as example: No humans are perfect. This syllogism type is exactly the opposite of proposition "A" explained above.
I: Particular Affimitive
Another syllogism type is the "particular form" which only influences some people and not the whole population. This syllogism is of the form: Some X are Y.
O: Particular Negative
The opposite of proposition "I" is proposition "O" which is of the form: Some X are not Y. an example of this would be: some cars are not green.

https://www.fibonicci.com/logical-reasoning/syllogisms/examples-types/

Image: Eric Gaba – Wikimedia Commons user: Sting

10-70AD – Heron of Alexandria



https://en.wikipedia.org/wiki/Water_organ#/media/File:Hydraulis.jpg

275AD - Porphyry of Tyre

Isagogê which categorized knowledge and logic

721-815AD Jabir ibn Hayyan (Geber)

Takwin (Arabic: تكوين) was a goal of certain Muslim alchemists, notably Jabir ibn Hayyan. In the alchemical context, takwin refers to the creation of synthetic life in the laboratory, up to and including human life. Whether Jabir meant this goal to be interpreted literally is unknown.

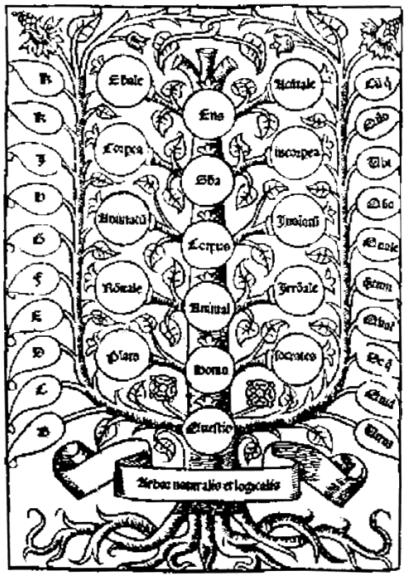
https://upload.wikimedia.org/wikipedia/commons/0/04/Jabir_ibn_Hayyan.jpghttps://upload.wikimedia.org/wikipedia/commons/0/04/Jabir_ibn_Hayyan.jpg

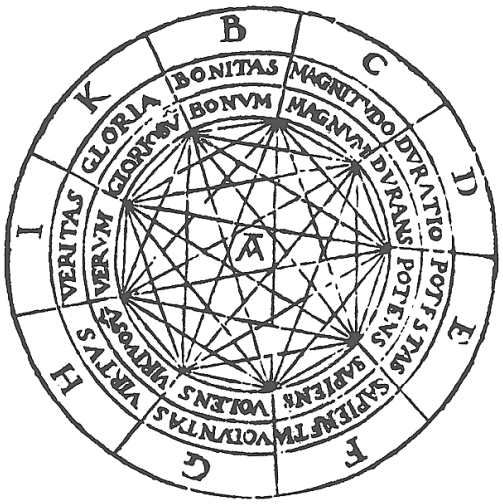
1136-1206 Ismail Al-Jazari

Genius inventor, proto-Maker.
Mechanical orchestra, mechanical clock.

http://muslimheritage.com/article/800-years-later-memory-al-jazari-genius-mechanical-engineer

1232-1315 Ramon Llull





Ars Magna
a tool for combining concepts mechanically, based on an Arabic astrological tool, the Zairja. The method would be developed further by Gottfried Leibniz in the 17th century.
Raimundus Lullus Ars Magna Tree
https://commons.wikimedia.org/wiki/File:Ramon_Llull_-_Ars_Magna_Tree_and_Fig_1.png

1500 - Paracelsus

In Liber de imaginibus, Paracelsus however denies that roots shaped like men grow naturally. He attacks dishonest people who carve roots to look like men and sell them as Alraun. He clarifies that the homunculus' origins are in sperm, and that it is falsely confused with these ideas from necromancy and natural philosophy

https://en.wikipedia.org/wiki/Homunculus#/media/File:Alchemische_Vereinigung_aus_dem_Donum_Dei.jpg

1560ish – Mechanical Monk

The story is told that the emperor's son King Philip II, praying at the bedside of a dying son of his own, promised a miracle for a miracle, if his child be spared. And when the child did indeed recover, Philip kept his bargain by having Turriano construct a miniature penitent homunculus.

“The monk arrived … in Washington via Geneva in 1977, into the care of Smithsonian”

It is still operational.

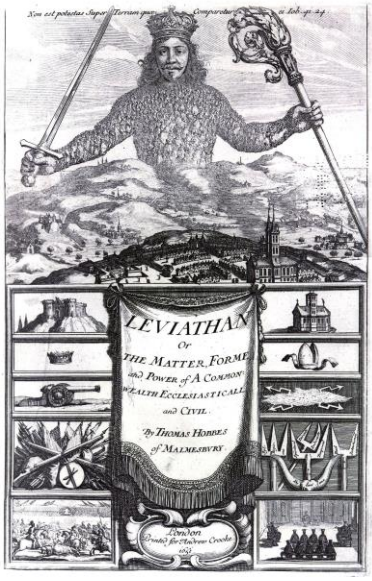
https://blackbird.vcu.edu/v1n1/nonfiction/king_e/prayer_introduction.htm

1526-1609 - Judah Loew ben Bezalel

Golem of clay. The golem of Prague.

https://en.wikipedia.org/wiki/Judah_Loew_ben_Bezalel#/media/File:Rabbi_L%C3%B6w_Saloun.JPG
https://www.flickr.com/photos/chajms/26060658793

1641 *Leviathan,* Thomas Hobbes

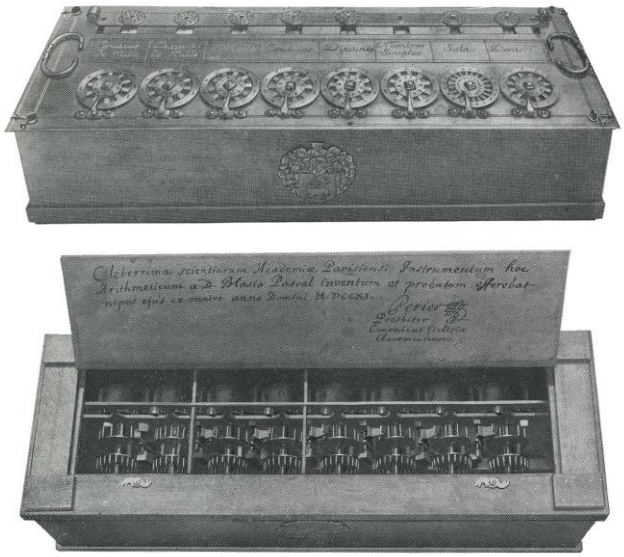


Thomas Hobbes published Leviathan and presented a mechanical, combinatorial theory of cognition. He wrote "...for reason is nothing but reckoning"

Leviathan or The Matter, Forme and Power of a Common Wealth Ecclesiasticall and Civil—commonly referred to as Leviathan—is a book written by Thomas Hobbes (1588–1679) and published in 1651.

https://en.wikipedia.org/wiki/Leviathan_(book)

1642 - Blaise Pascal

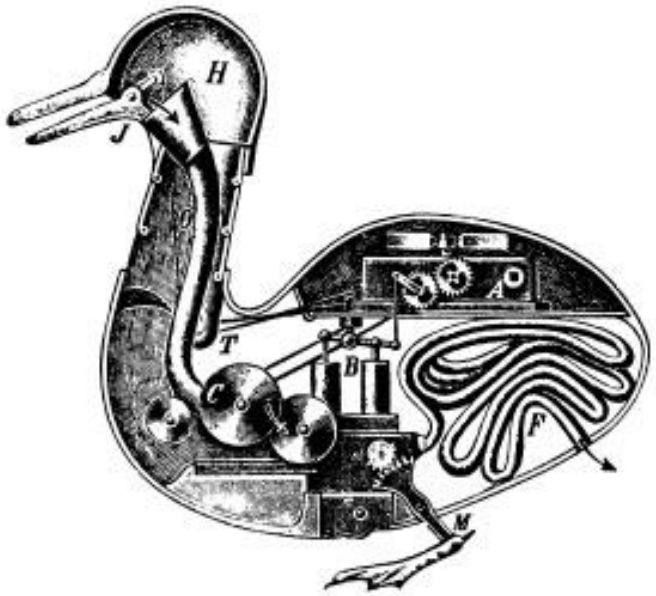


Blaise Pascal invented the mechanical calculator, the first digital calculating machine.

He designed the machine to add and subtract two numbers directly and to perform multiplication and division through repeated addition or subtraction.

https://commons.wikimedia.org/wiki/File:Pascaline_calculator_front.png

1700s - René Descartes

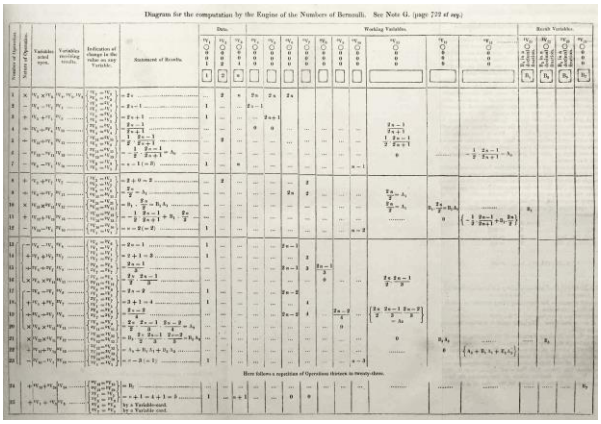


René Descartes proposed that bodies of animals are nothing more than complex machines (but that mental phenomena are of a different "substance")

The West has finally caught up to China!

https://upload.wikimedia.org/wikipedia/commons/7/75/Duck_of_Vaucanson.jpg

1840 Ada Lovelace



Ada Lovelace wrote the first computer program in 1840 intended for Babbage's Analytical Engine.
It computes Bernoulli numbers.

"The Analytical Engine has no pretensions whatever to originate anything. It can do whatever we know how to order it to perform. It can follow analysis, but it has no power of anticipating any analytical revelations or truths. Its province is to assist us in making available what we are already acquainted with." 1843
^ was in one of Alan Turing's most famous papers as 'Lady Lovelace's Objection':

Stein, Dorothy (1985), Ada: A Life and a Legacy, MIT Press Series in the History of Computing, Cambridge, MA: The MIT Press

Images:
https://en.wikipedia.org/wiki/Ada_Lovelace#/media/File:Ada_Lovelace_portrait.jpg
https://en.wikipedia.org/wiki/Ada_Lovelace#/media/File:Diagram_for_the_computation_of_Bernoulli_numbers.jpg

Next time: Contemporary AI