Machine Learning

It's being mentioned everywhere at the moment – but Machine Learning has been around for a lot longer than you might think. *A lot* longer...



1

First things first...What is it?

Machine Learning is a branch of Artificial Intelligence (AI) that gives computers the ability to learn without being explicitly programmed. It's all about developing programs that enable machines to teach themselves, as well as change in response to new information.

1642

2

Back to the future

In 1642, 19 year old Blaise Pascal starts work on the first of many 'arithmetic machines' that can subtract, multiply and divide. 50 prototypes and 3 years later, he built 20 machines.

1763

3

Probably...

In 1763, Thomas Bayes' 'Essay towards solving a problem in the doctrine of chances' is published. It describes the probability of an event occurring, based on prior knowledge of conditions. Today, its role in cybersecurity includes helping to identify suspicious behavior in real time.

1842

4

1st computer programmer

Mathematician Ada Lovelace writes the world's first algorithm to program her friend Charles Babbage's Analytical Engine in 1842.

1847

5

Yes/No

George Boole develops a method for reducing all mathematical values to 'true' or 'false' in 1847. Boolean Logic is born and today helps CPUs process new inputs.

1857

6

Gotcha!

Following more than 80 years of hoodwinking humans (including Napoleon Bonaparte) into believing it's a chess champion, the 'Mechanical Turk' automaton is revealed to be human operated in 1857.

1927

7

I, robot

'False Maria' becomes the first robot depicted in film, appearing in Fritz Lang's 'Metropolis' in 1927.

1947

8

Machine, teach thyself

Alan Turing tells a 1947 meeting of the London Mathematical Society that 'what we want is a machine that can learn from experience,' adding that 'the machine must be allowed to have contact with human beings in order that it may adapt itself to their standards.'

1952

9

What's in a name?

Arthur Samuels writes the world's first self-learning program and coins the phrase 'machine learning' in 1952. No potted history is complete without the photo of Samuels playing checkers with his IBM.

1957

10

Deep thought

The first neural network for computers, the 'Perceptron' is designed by Frank Rosenblatt in 1957. It simulated human thought processes and more closely resembles today's machine learning models.

1967

11

We've seen this before...

'Nearest neighbor' algorithm means computers can make basic pattern recognition in 1967.

1985

12

Talk talk

NETtalk, an artificial neural network, teaches itself to correctly pronounce 20,000 words in one week in 1985. Initially, output was garbled but as the week progressed, it became clearer.

13

Deep blue

IBM's Deep Blue computer beats world champion chess master Garry Kasparov.

1990s

14

Winter is coming

Pessimism about the effectiveness of machine learning causes an 'AI Winter' in the 1970s. The re-discovery of 'backpropagation' in the 1980s combined with the arrival of the World Wide Web and Big Data in the 1990s means machine learning's time has come.

15

Deep learning

Cognitive psychologist and computer scientist Geoff Hinton's 're-boot' of neural network research sees 'Deep Learning' transform tools such as voice recognition and image tagging.

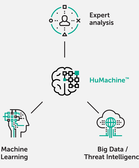
2018

16

HuMachine intelligence

Kaspersky Lab combines big data threat intelligence with machine learning and human expertise to create HuMachine intelligence for maximum cyberthreat detection and protection.





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