What is Machine Learning?

1 min

While at IBM, [Arthur Samuel](#) developed a program that learned how to play checkers (1959). He called it:

"The field of study that gives computers the ability to learn without being explicitly programmed."

What does this mean?

As programmers, we often approach problems in a methodical, logic-based way. We try to determine what our desired outputs should be, and then create the proper rules that will transform our inputs into those outputs.

Machine learning flips the script. We want the program itself to learn the rules that describe our data the best, by finding patterns in what we know and applying those patterns to what we don't know.

These algorithms are able to *learn*. Their performance gets better and better with each iteration, as it uncovers more hidden trends in the data.

Instructions

Take a look at the timeline on the right. Since Mr. Samuel's usage of the term, we have made astonishing advances in the field!

1950
Alan Turing publishes
Computing Machinery
and Intelligence
"Can machines think?"

2016
Google's AlphaGo
beats professional
players at Go
A notoriously difficult
board game studied
for centuries

2018
Codecademy launches
Machine Learning
Fundamentals

General fear of AI leads to fewer
developments in the field

1st AI winter

2nd AI winter

Netflix offers a $1 million prize
to the first developer of a video
recommendation algorithm

1950   1960   1970   1980   1990   2000   2010

2014
Facebook uses
DeepFace to recognize
users' faces in photos

1957
The perceptron
algorithm (to
imitate a single
neuron) is created
(LESSON)

1967
Unknown data can
be assigned labels
with the K-Nearest
Neighbors
algorithm
(LESSON)

1985
First speech
recognition
algorithm using
natural language
processing

1998
MNIST database is
released and has since
become a benchmark
for handwriting
recognition
(PROJECT)

2011
IBM Watson beats
human competitors
at Jeopardy!