MACHINE LEARNING SEMINAR

Introducción a Machine Learning

Berthin Torres & Rodolfo Quispe
University of Campinas

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Organized by ACM Student Chapter Cusco

Outline

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A BRIEF HISTORY OF

MACHINE LEARNING

Machine Learning provides systems the ability to automatically learn and improve from experiences.
Machine learning is the idea that there are **generic algorithms** that can tell you something interesting about a set of data without you having to write any custom code specific to the problem. *Instead of writing code, you feed data to the generic algorithm and it builds its own logic based on the data.*

1642
Construction of the **Mechanical Adder**. The first mechanical adding machine designed by **Pascal**.

1801
First time **data** is stored by using a **Weaving Loom** machine

1847
George Boole creates a way of representing **boolean operators**

1890
Invention of the **Mechanical System** for Statistics calculations

1950
Alan Turing create the **Turing te** to determine if a computer has a real intelligence

1952
Samuel Arthur writes the first **computer learning program**

1957
Frank Rosenblatt designed the **perceptron** which is a type of **neural network**

1967
The **nearest neighbor** algorithm is written as a very basic pattern recognition

1979
Students from Stanford University invent the **Stanford card. A robot that navigates a room by its own.**

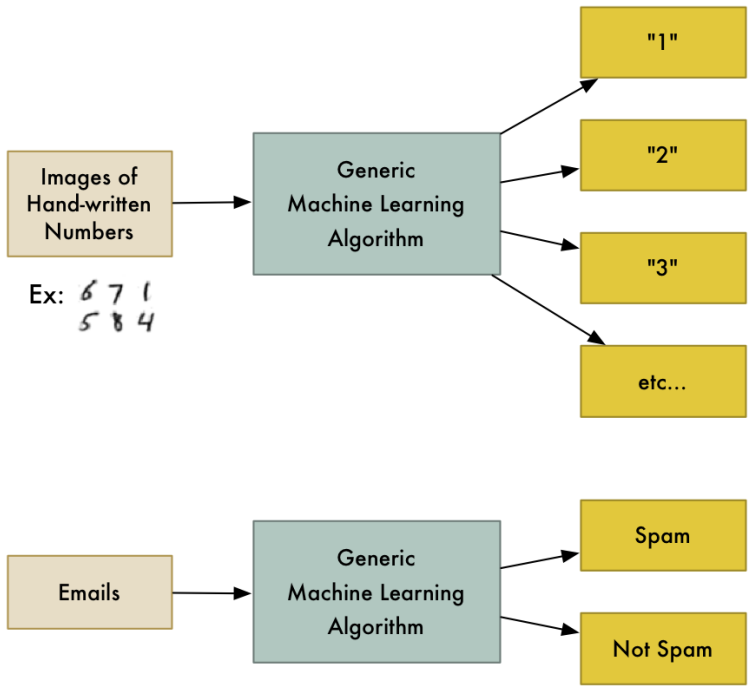
1981
Explanation Based Learning, a type of supervised learning, is introduced in a journal article

1990s
Large amounts of data are being analyzed and scientists use **machine learning** for data mining, adaptive software, language learning, etc.

2000s
Machine learning is used anywhere **adaptive programming** is required

Source: `https://medium.com/bloombench/history-of-machine-learning-7c9dc67857a5`

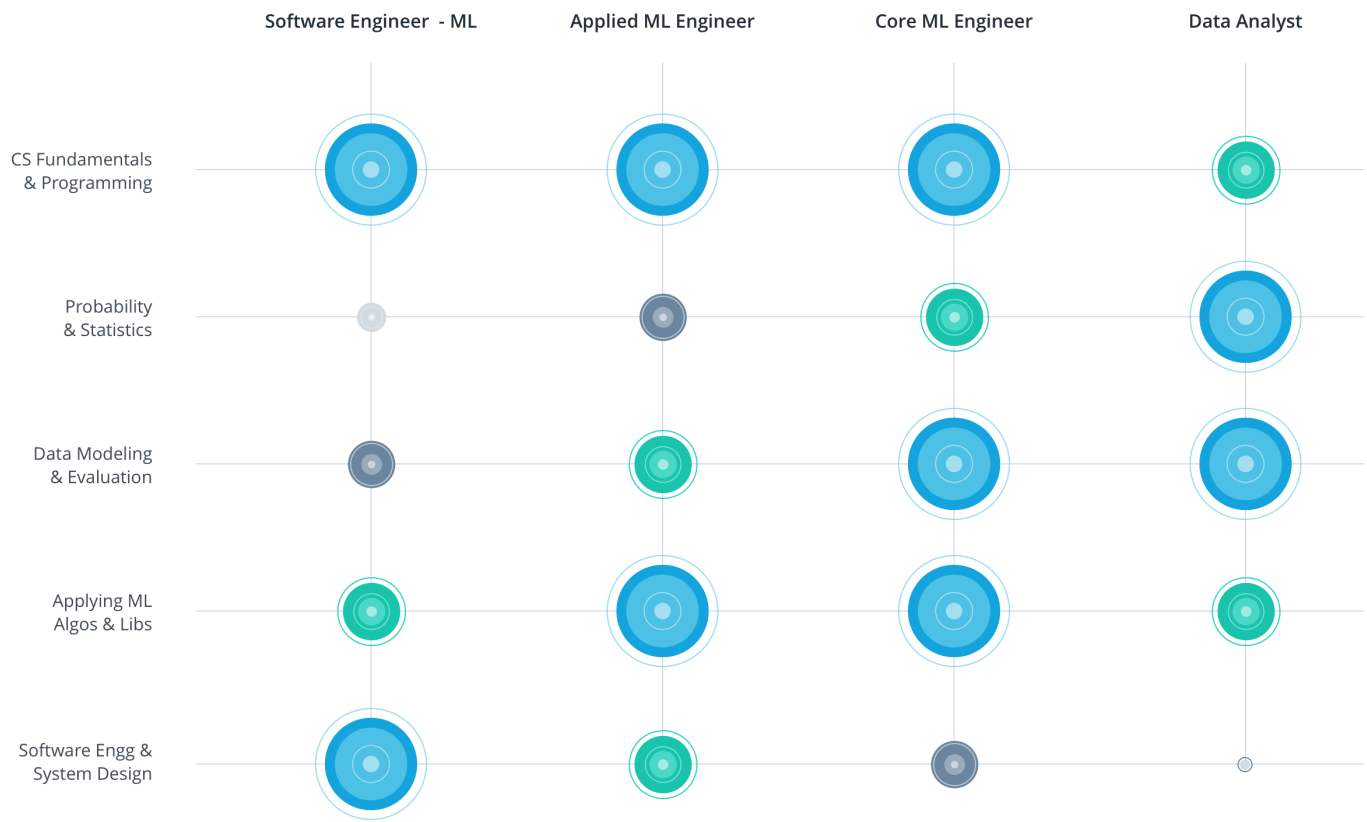
Machine Learning es un enfoque para crear algoritmos genericos que sean capaces de aprender patrones o relaciones de un conjunto de información.



Source: https://medium.com/@ageitgey/machine-learning-is-fun-80ea3ec3c471

Cinco skills para ser Machine Learning Engineer

- Fundamentos en Computer Science y Programación
- Probabilidades y Estadística
- Data Modeling y Evaluación
- Aplicar los algoritmos y usar las librerias de Machine Learning
- Ingeniería de Software y Diseño de Sistemas



Source:
https://blog.udacity.com/2016/04/5-skills-you-need-to-become-a-machine-learning-engineer.html

Top seis trabajos con un grado en CS

1. Data Engineer (salario U.S. 137k$)
2. Machine Learning Engineer (salario U.S. 121k$)
3. Software Architect (salario U.S. 108k$)
4. Software Engineer (salario U.S. 105k$)
5. Mobile Application Developer (salario U.S. 90k$)
6. Full Stack Web Developer (salario U.S. 88k$)

Source: `https://blog.coursera.org/top-6-jobs-computer-science-degree/`

Outline

Slide 1

- Machine learning, as part of IA,

Content of slide 1

Slide 1

- Machine learning, as part of IA,
- Second point

Content of slide 1

Slide 1

- Machine learning, as part of IA,
- Second point
- Third point

Content of slide 1

Outline

Slide 2

Outline

How to use references

?, ? mentions that the Peter Pan is a creation of your imagination, however, it is also discussed that some people's imagination is not suitable to create such character (?, ?).

References I

Ke, Y., Sukthankar, R., & Hebert, M. (2005). Efficient Visual Event Detection using Volumetric Features. In *Tenth ieee international conference on computer vision* (Vol. 1, pp. 166–173).