

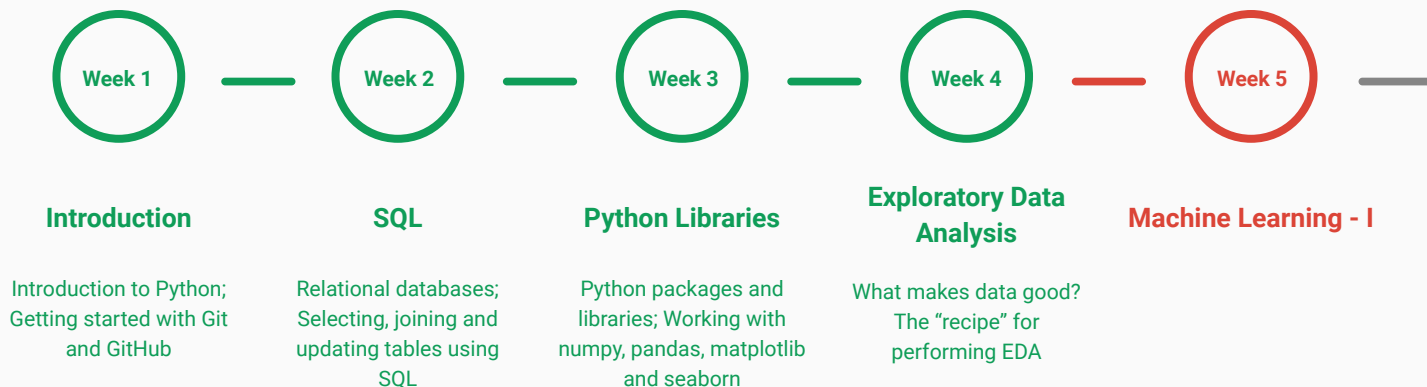
Week 05: Machine Learning - I

Data Science Bootcamp
Fall, 2021

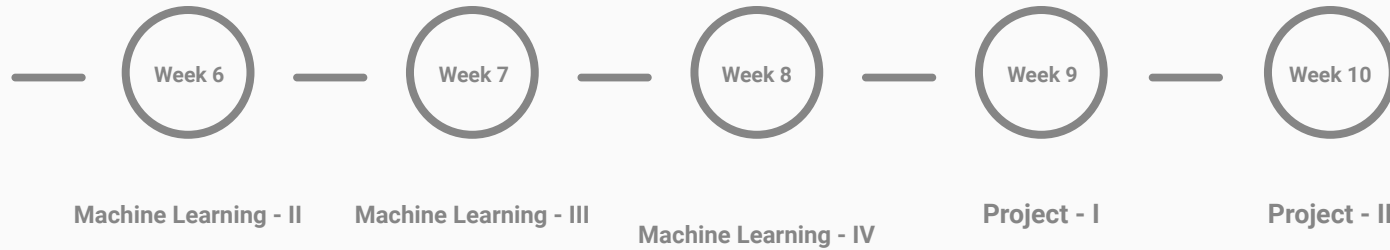
Instructor: Sagar Patel



Where are we?



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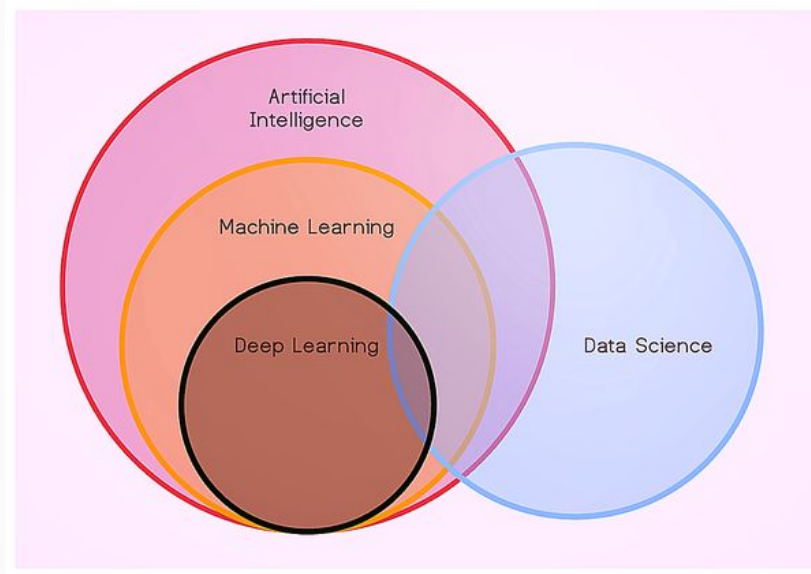


Agenda

- Machine Learning
 - What is it?
 - How vast does ML get?
 - Linear and Logistic Regression

NOTE: Machine Learning is a huge topic!

“The big four”



Machine Learning

slido



What are some real-world examples where Machine Learning is used?

① Start presenting to display the poll results on this slide.

A few examples

The Netflix logo, featuring the word "NETFLIX" in a bold, red, sans-serif font on a black background.

Recommendation System

The Yelp logo, featuring the word "yelp" in a white, lowercase, sans-serif font with a white star icon to its right, all on a red background.

Image Classification



Google Assistant

NLP

slido



Suppose your email program watches you marking emails as spam/not spam, and based on this it learns to make the filter spam better. What is the task in this setting?

① Start presenting to display the poll results on this slide.

What is Machine Learning?

- The ability to **learn** from **data**, without being explicitly programmed using **statistical techniques**

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- The ability to **learn** from **data**, without being explicitly programmed using **statistical techniques**
- Alternatively,
`f(data) = Actionable Information`

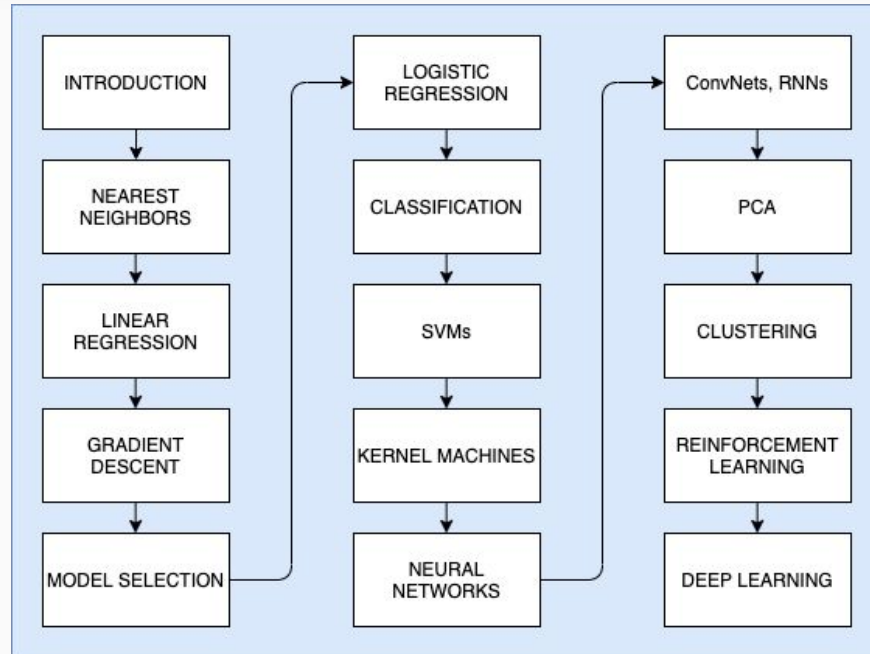


Ingredients of Machine Learning

Follow the 3-step recipe while solving any Machine Learning problem:

- Data **Representation**
- Measure of “**goodness**”
 - Loss function
- A **method** for optimizing the measure of goodness
 - **Training** methods
 - Manipulation using features of the data

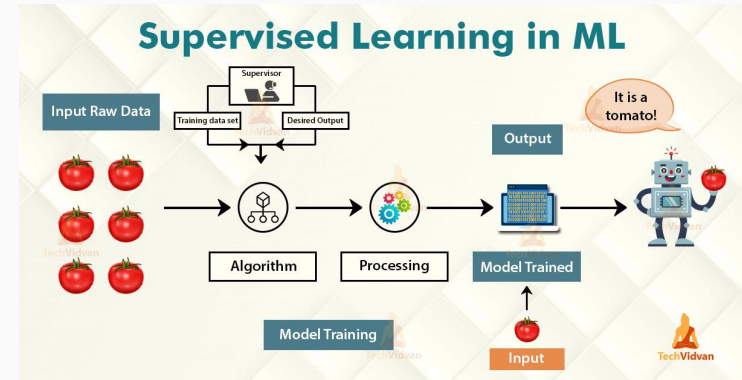
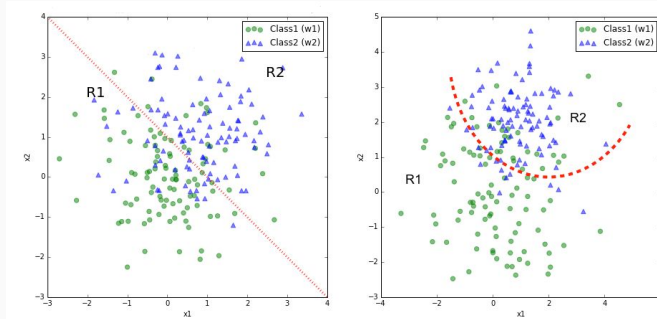
How “vast” is Machine Learning?



Types of “Learning”

- **Supervised Learning**

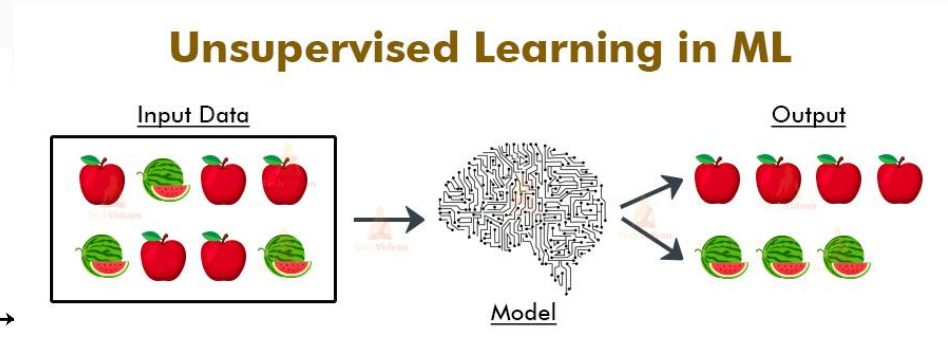
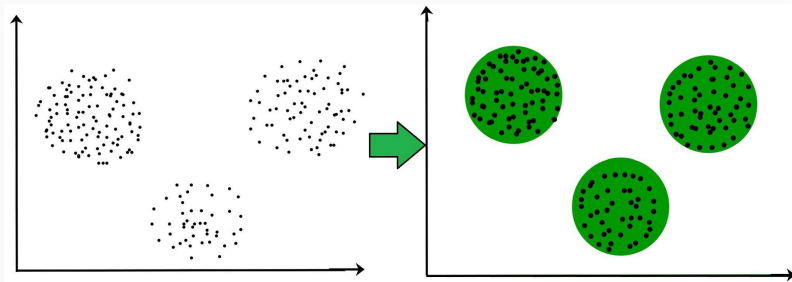
- Algorithms trained using **labeled** data
- The model takes direct **feedback** to check if it's predicting the correct output or not
- Can be categorized in **Classification** and **Regression**
- Example: Tomato Detector



Types of “Learning”

- **Unsupervised Learning**

- Algorithms trained using **unlabeled** (/unknown) data
- There is no **feedback**
- Can be categorized in **Clustering** and **Association**
- Example: Fruit classifier



Summary

- Machine Learning is a vast topic
- There's a lot of math!
 - A working knowledge of statistics is required to understand Machine Learning

That's all Folks!

See you in the next session :)

Give us a feedback: <https://bit.ly/3q6ZDID>