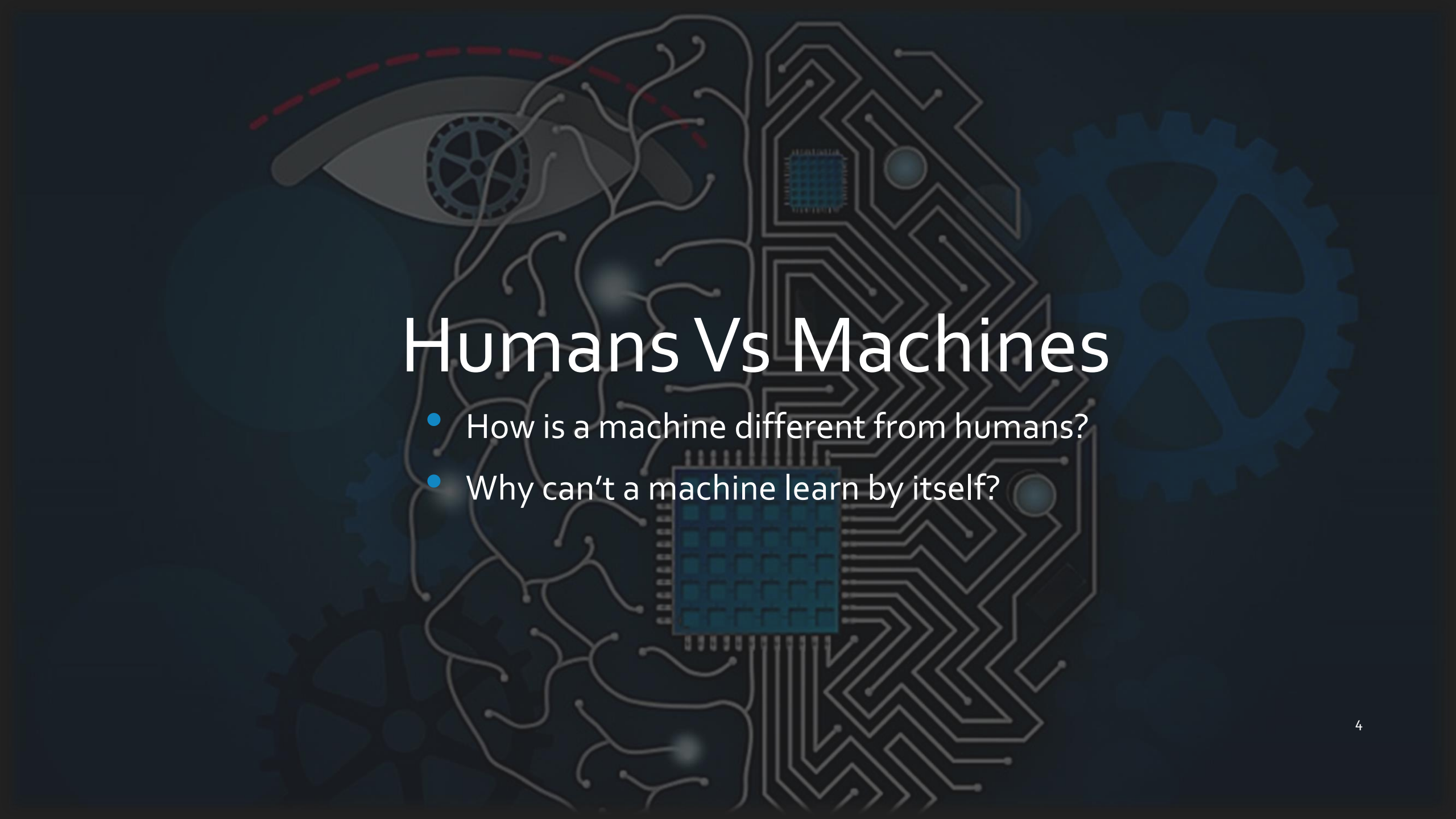
“PUSH YOURSELF BECAUSE, NO ONE ELSE IS GOING TO DO IT FOR YOU”

Machine Learning

Introduction

- Humans vs Machines
- How to make Machines Learn
- What is Machine Learning ?
- Examples of Machine Learning
- Overview of Machine Learning



Humans Vs Machines

- How is a machine different from humans?
- Why can’t a machine learn by itself?

Humans Vs Machines

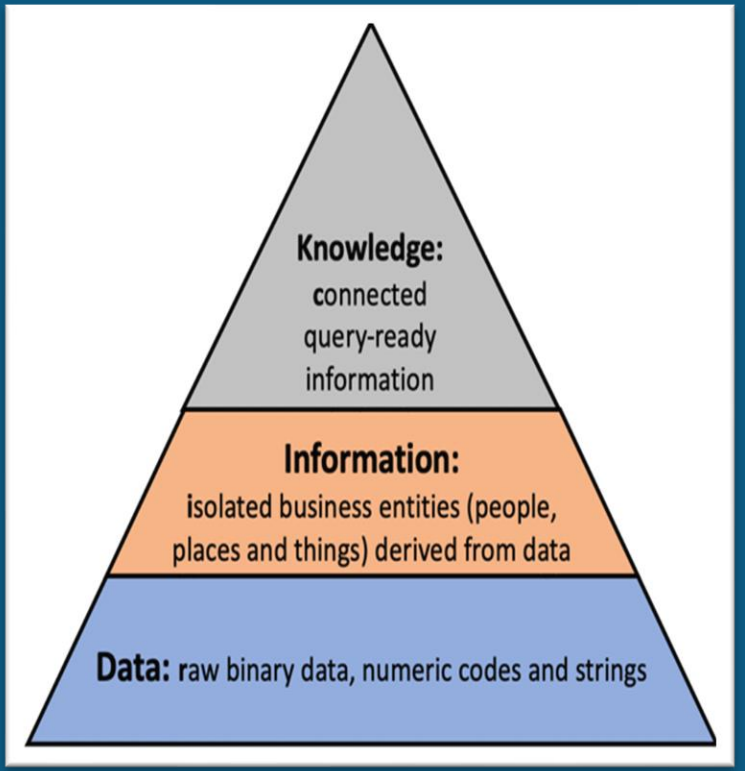
Our history and our literature show us that for most of human history machines were seen as tools to help people do more than they were capable of on their own.

Machines followed orders of humans and performed tasks while humans are capable of performing tasks by themselves. Humans can do this because they learn from past experience and make a decision according to the experiences while the machine doesn't learn from past experience. Thus, machines aren't capable of making decisions by themselves.

Thus, a machine cannot learn by itself and requires to learn decision making. In ML we incorporate decision-making capabilities in machines so that they can mimic human behavior.

How to make a Machine Learn?

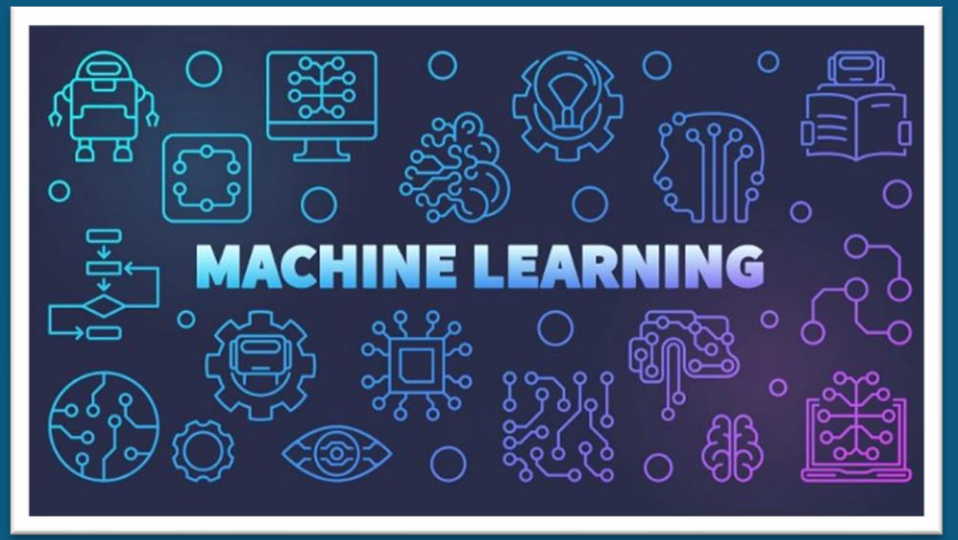
- According to Tom Mitchell, *a machine is said to learn from experience E with resect to some task T and some performance measure P, if its performance on T, as measured by P, improves with experience E.*
- In general, the following are the steps to make machines learn –
  - Gathering raw data or experience [BIG DATA HADOOP]
  - Converting data into information [DATA MINING]
  - Gathering knowledge from information [MACHINE LEARNING]
  - Becoming intelligent to make decisions



What is Machine Learning ?

What is Machine Learning ?

- Machine Learning (ML) is a branch of computer science where we develop algorithms that make a machine learn to do something without actually making computations about it.
- The basic premise of machine learning is to build algorithms that can receive input data and use statistical analysis to predict an output while updating outputs as new data becomes available.



Difference between AI, ML and DL

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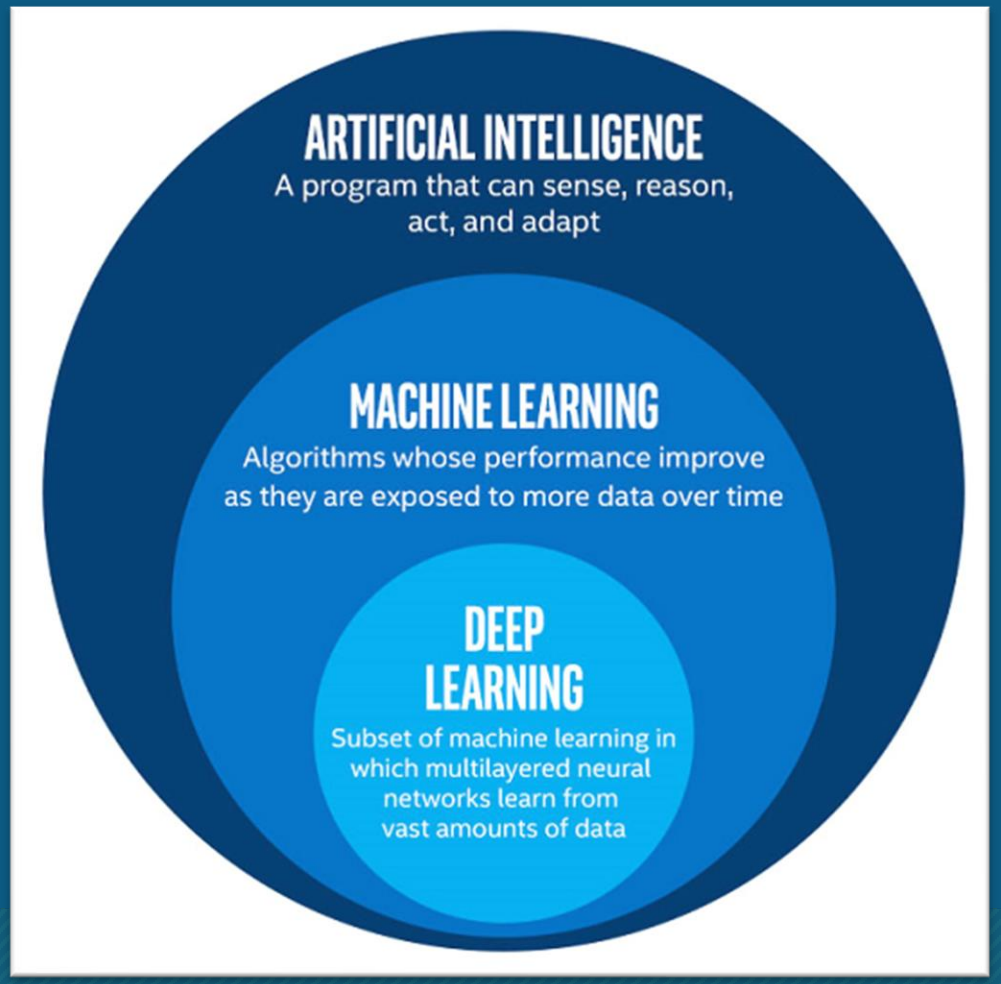


Difference between AI, ML and DL

Artificial Intelligence	Machine Learning	Deep Learning
• AI means to replicate a human brain, the way a human brain thinks, works and functions.	• Machine learning is one subfield of AI. The core principle here is that machines take data and "learn" for themselves.	• Deep Learning is a subset of ML. The main difference between deep and machine learning is, machine learning models become better progressively but the model still needs some guidance
• The main goal here is to increase the success rate of an algorithm instead of increasing accuracy.	• The main goal here is to increase the accuracy of an algorithm instead of its success rate.	• The main goal here is to increase the accuracy of an algorithm without any explicit help from the programmer.

Examples of Machine learning

Examples of Machine learning

PREDICTION

- Housing Price
- Probability of fault
- Stock Market

IMAGE RECOGNITION

- Biometric Locks
- Face Detection
- Image classification

SPEECH RECOGNITION

- Voice Dialing
- Call Routing
- Conversations

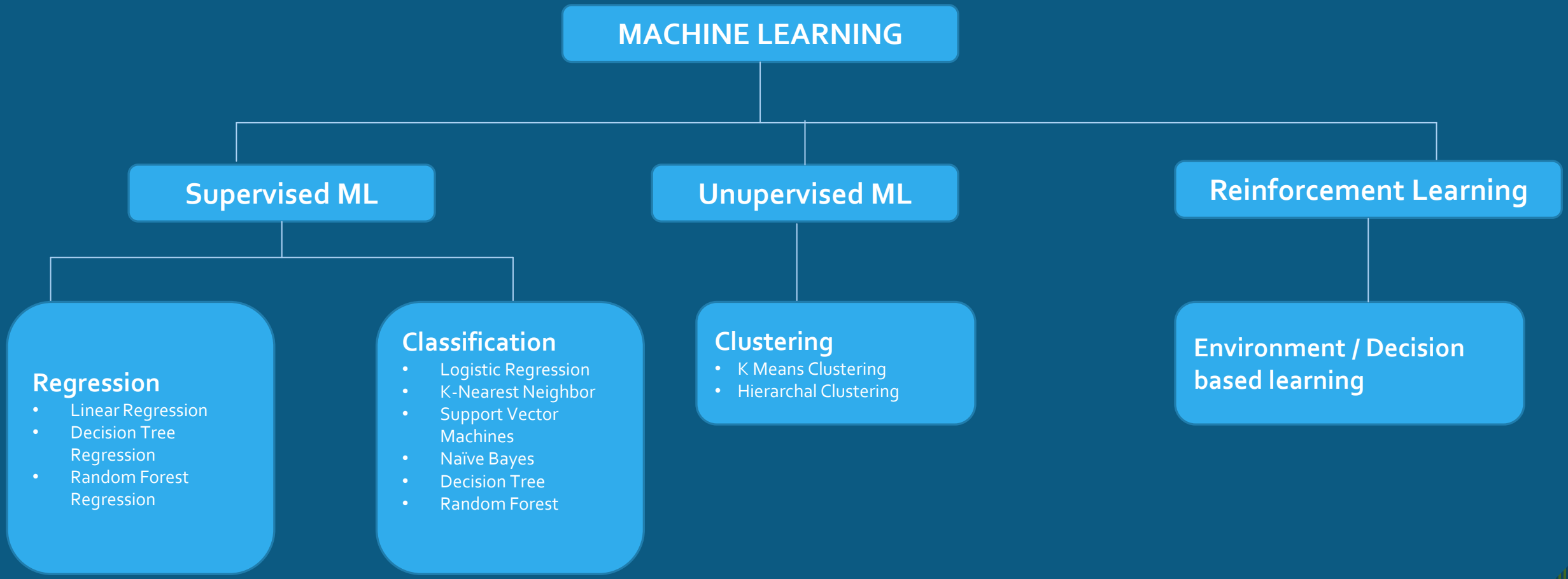
MEDICAL DIAGNOSIS

- Cancer Recognition
- Predicting Diseases

SMART ASSISTANTS

- Google Assistant
- Amazon Alexa
- Cortana

Overview of Machine Learning



Thank You