INTRODUCTION TO MACHINE LEARNING

INTERNSHIPSTUDIO

Agenda

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- What is Machine Learning?
- Why Machine Learning is important?
- Application of Machine Learning and its classification
- Supervised Learning
- Unsupervised Learning

What is Machine Learning?

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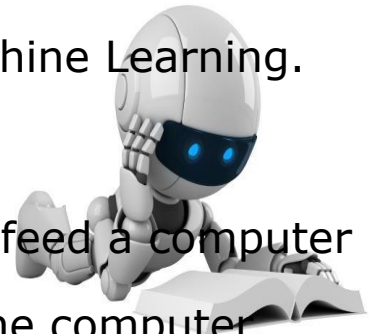
- The subfield of computer science that "gives computers the ability to learn without being explicitly programmed"- (Arthur Samuel, 1959)

- Machine Learning is the process of teaching a computer system how to make accurate predictions when fed data.

- The capability of Artificial Intelligence systems to learn by extracting patterns from data is known as Machine Learning.

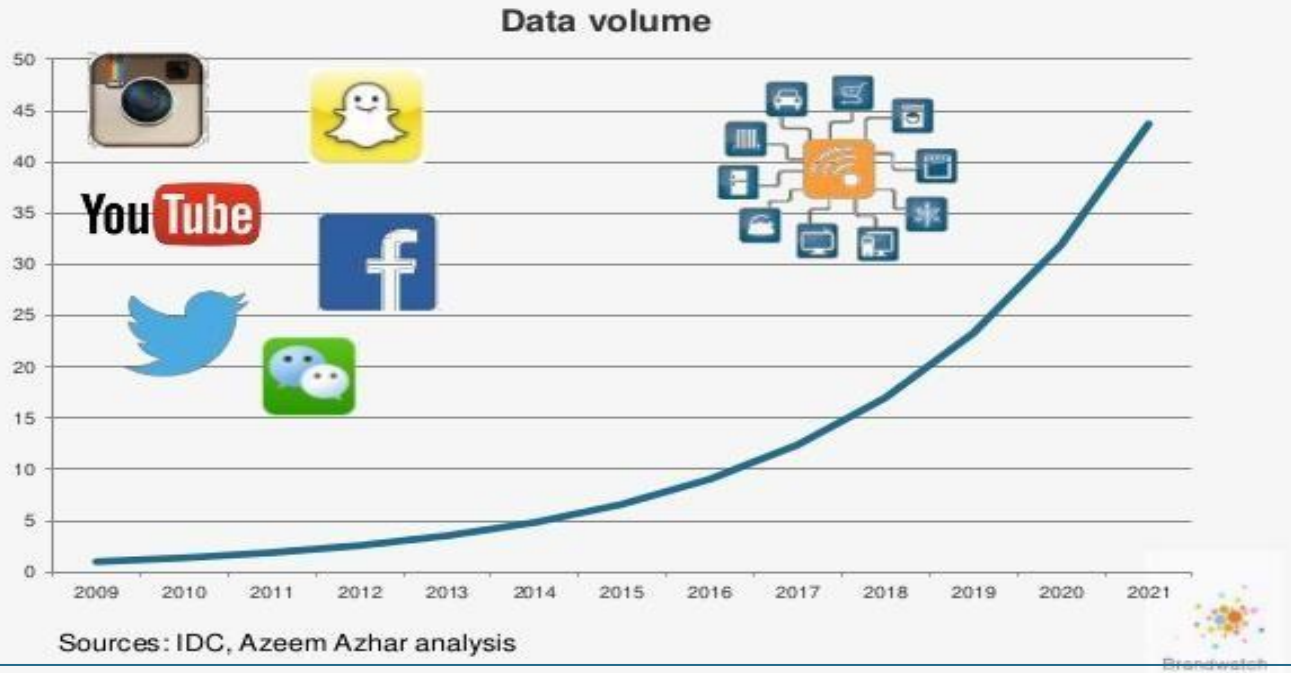


Simply put, **machine learning** allows the user to feed a computer algorithm an immense amount of data and have the computer analyse and make data-driven recommendations and decisions based

New Data Economy & ML

All of these things mean it's possible to quickly and automatically produce models that can analyse bigger, more complex data and deliver faster, more accurate results – even on a very large scale. And by building precise models, an organization has a better chance of identifying profitable opportunities – or avoiding unknown risks.

44Zb of data by 2020 – 44x in 11 years



Features of Machine Learning

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01

It uses the data to detect patterns in a dataset and adjust program actions accordingly

It focuses on the devt of programs that can teach themselves to change when exposed to new data

02

03

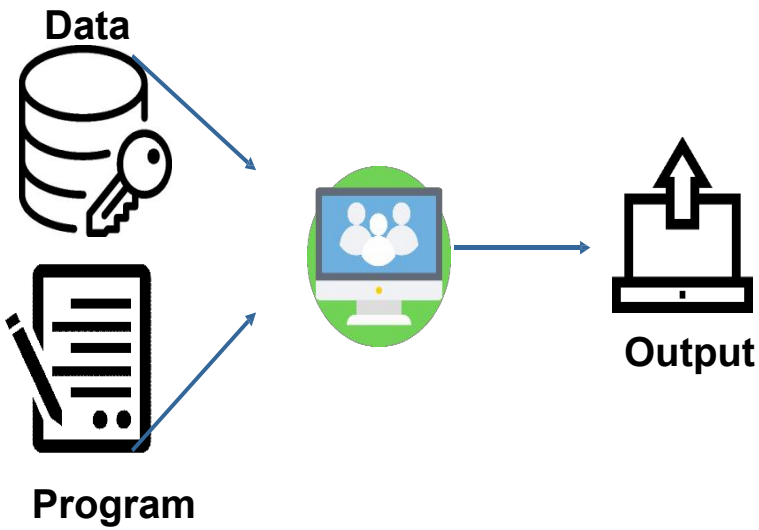
It enables computers to find hidden insights using iterative algorithms without being explicitly programmed

It automates analytical model building

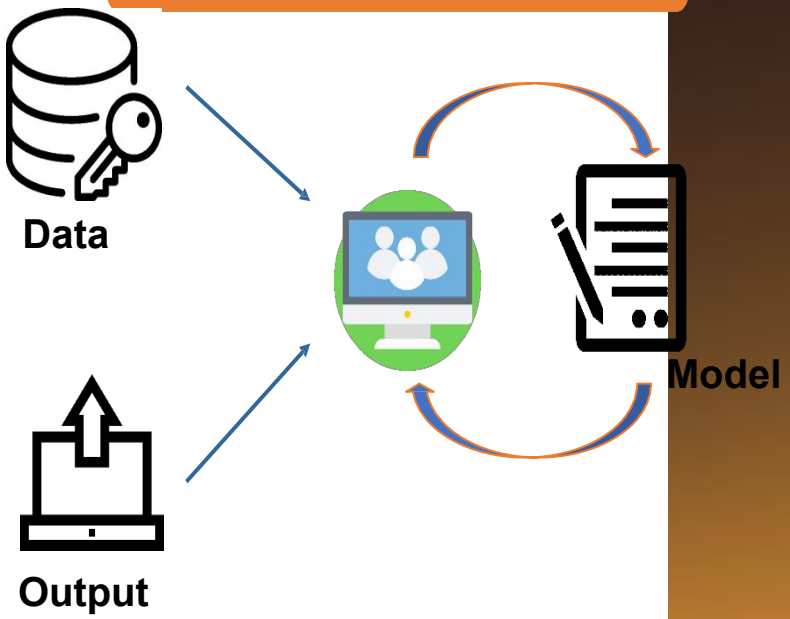
04

Traditional Approach vs. ML Approach

Traditional Programming: Data and program is run on the computer to produce the output

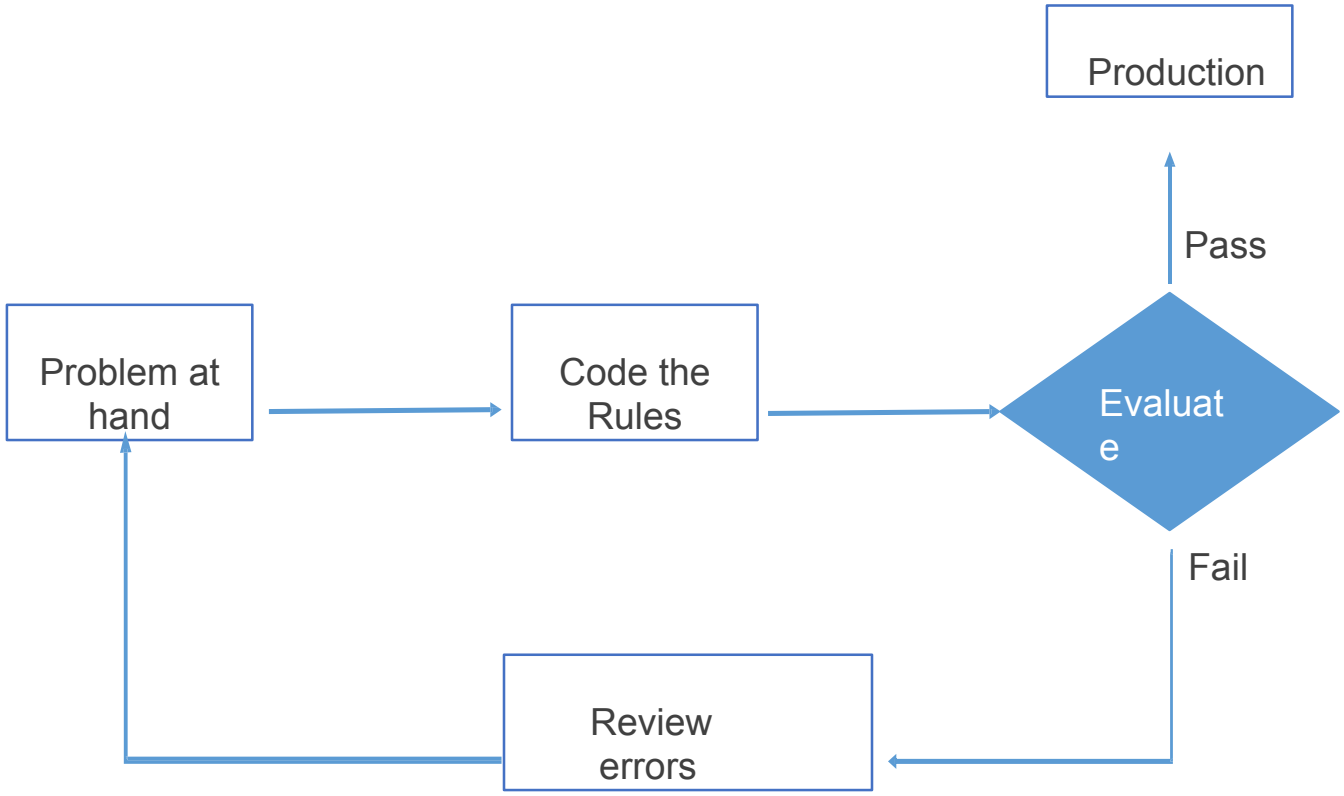


ML: Data and output is run on the computer to create a program



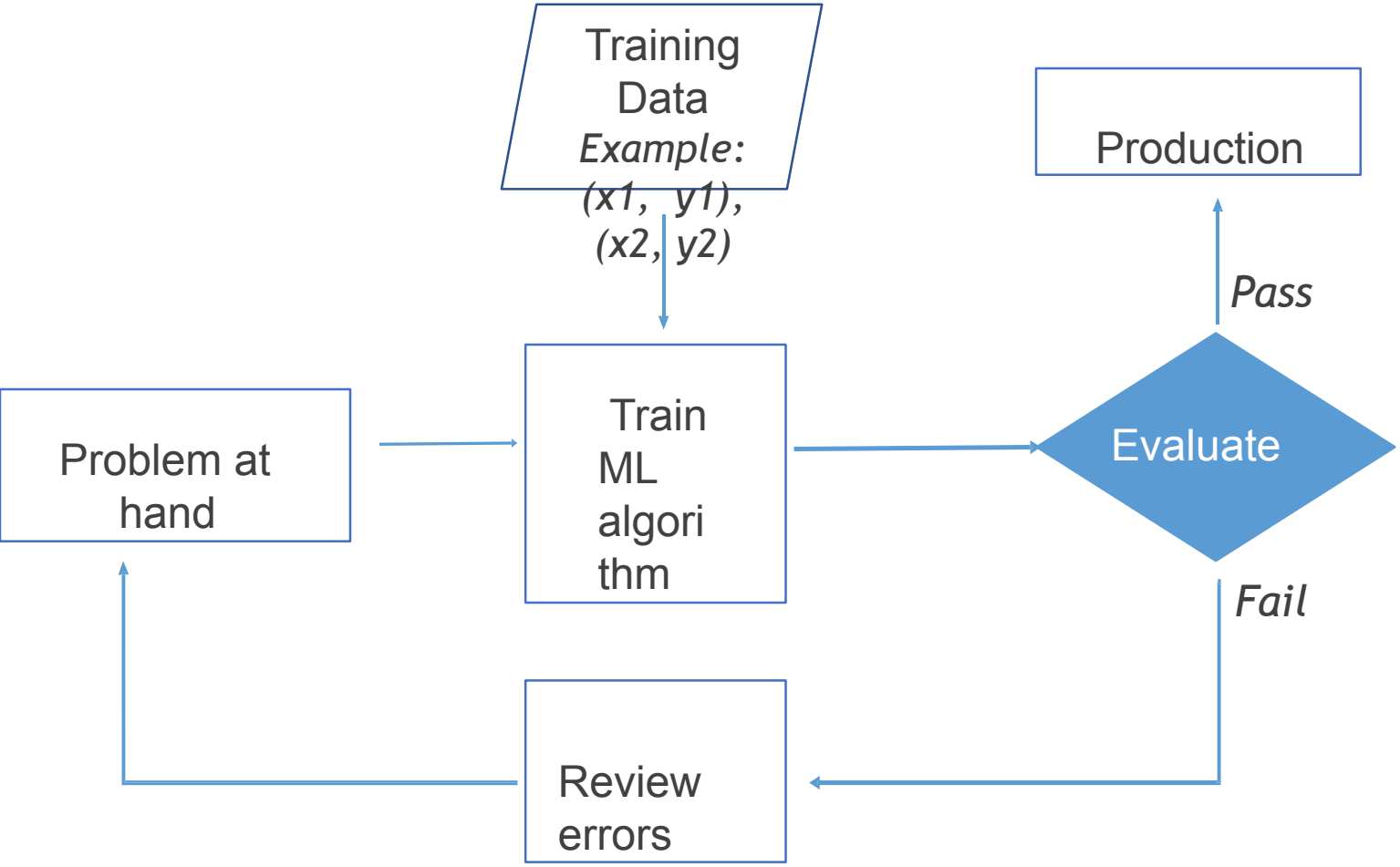
Traditional Approach

Traditional programming relies on hard-coded rules.



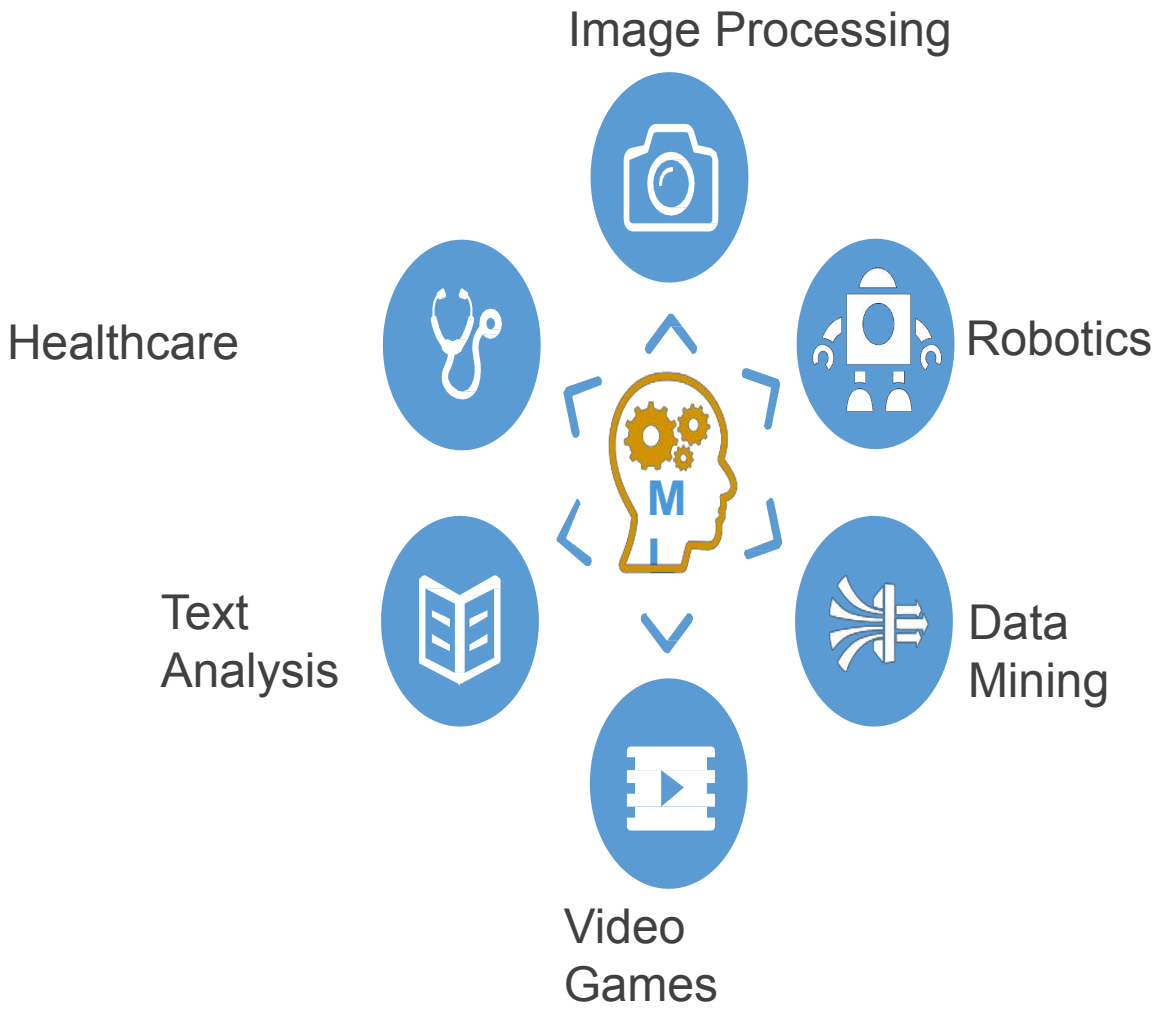
Machine Learning Approach

Machine Learning relies on learning patterns based on sample data.



Applications of Machine Learning

Artificial intelligence and Machine learning are being increasingly used in various functions such as:



Applications of Machine Learning

Image Processing

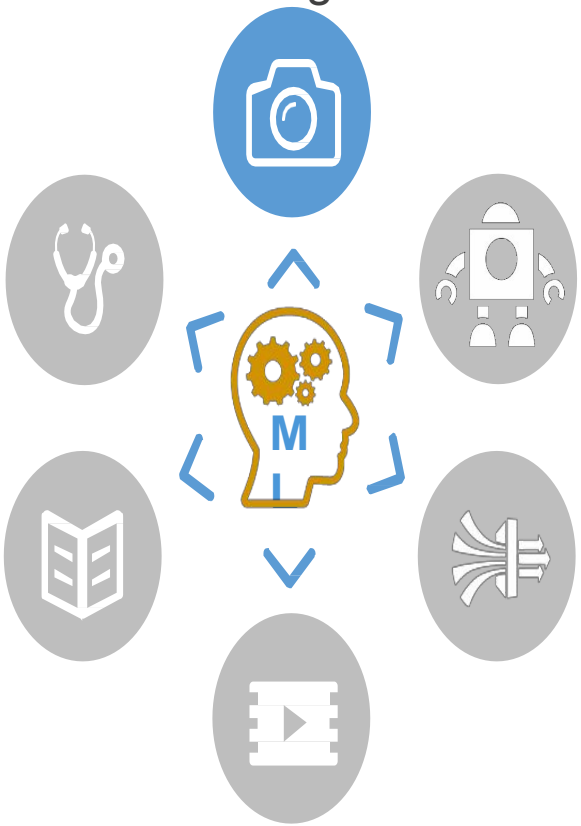
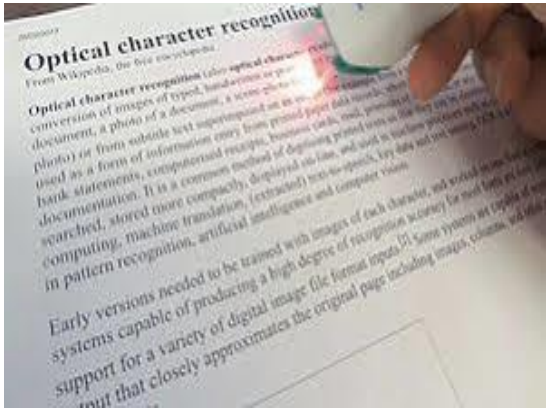


Image tagging and recognition

Self-driving cars



Optical Character Recognition (OCR)

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Applications of Machine Learning

Robotics

Human simulation

Humanoid Robot

Industrial robotics

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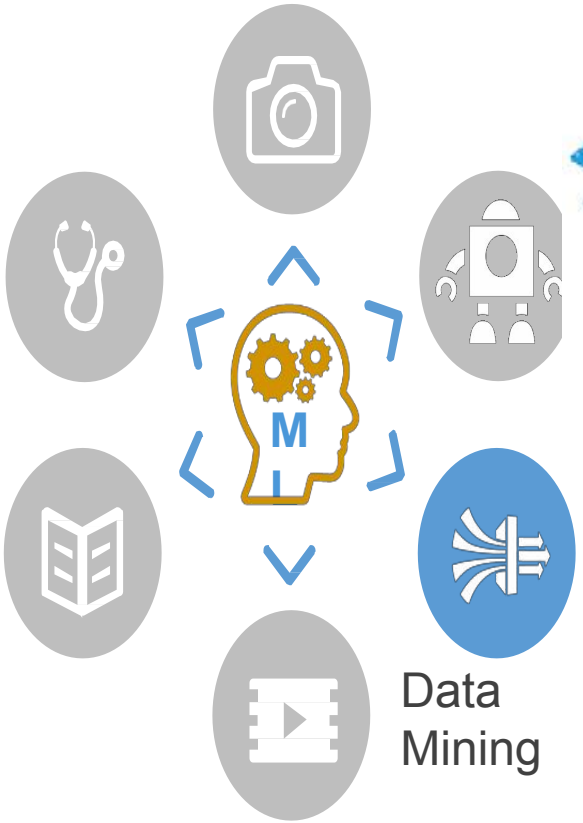
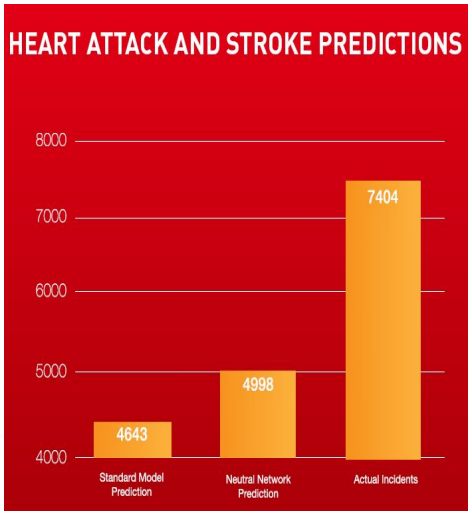
Applications of Machine Learning



Data Mining

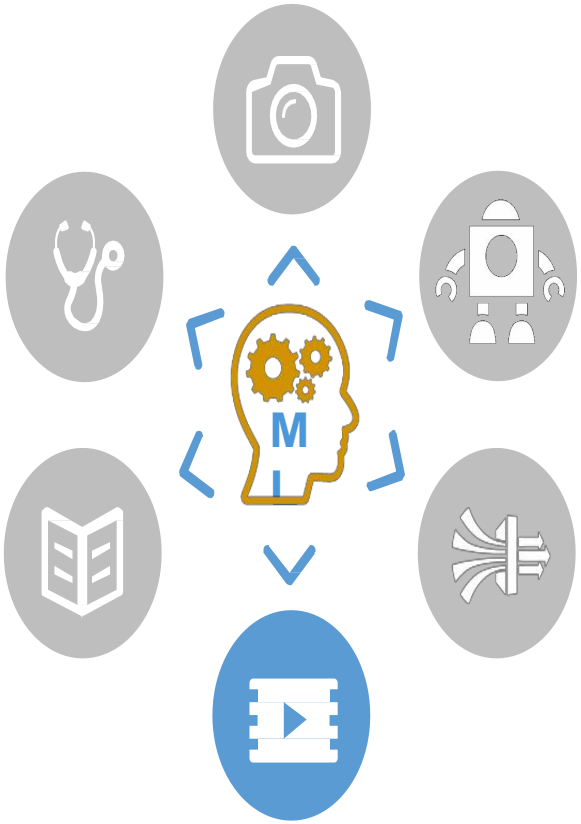
Anomaly detection



Grouping and Predictions

Association rules

Applications of Machine Learning



Video Games

Some games implement reinforcement learning

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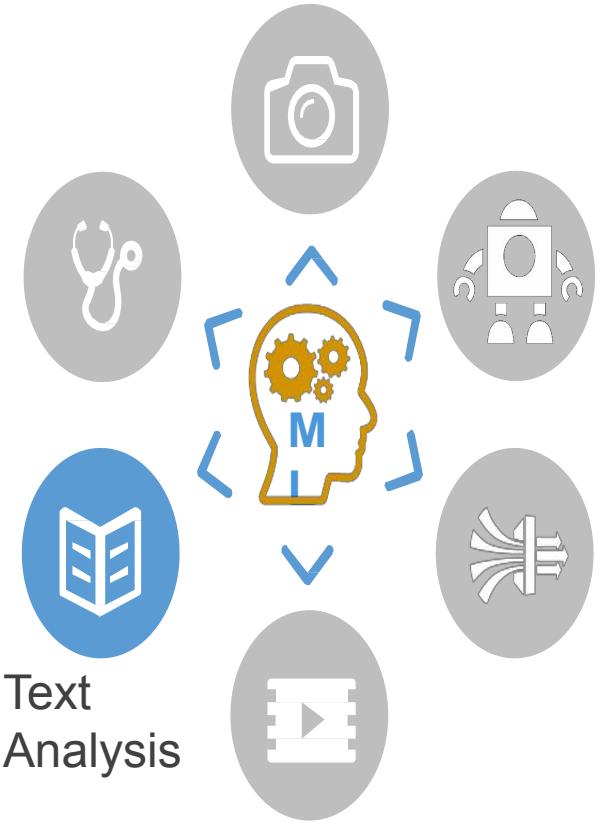
Applications of Machine Learning

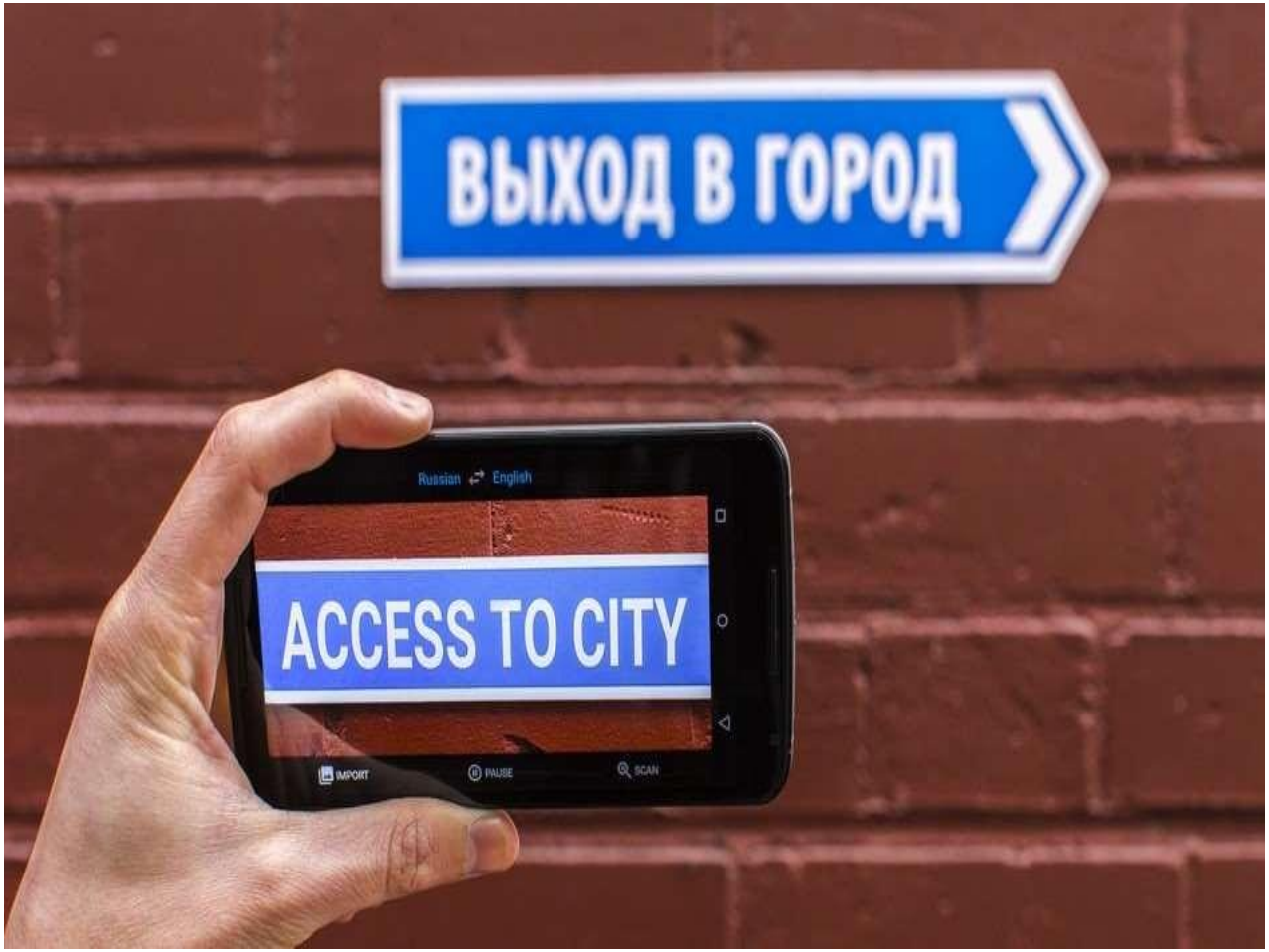


Applications of Machine Learning

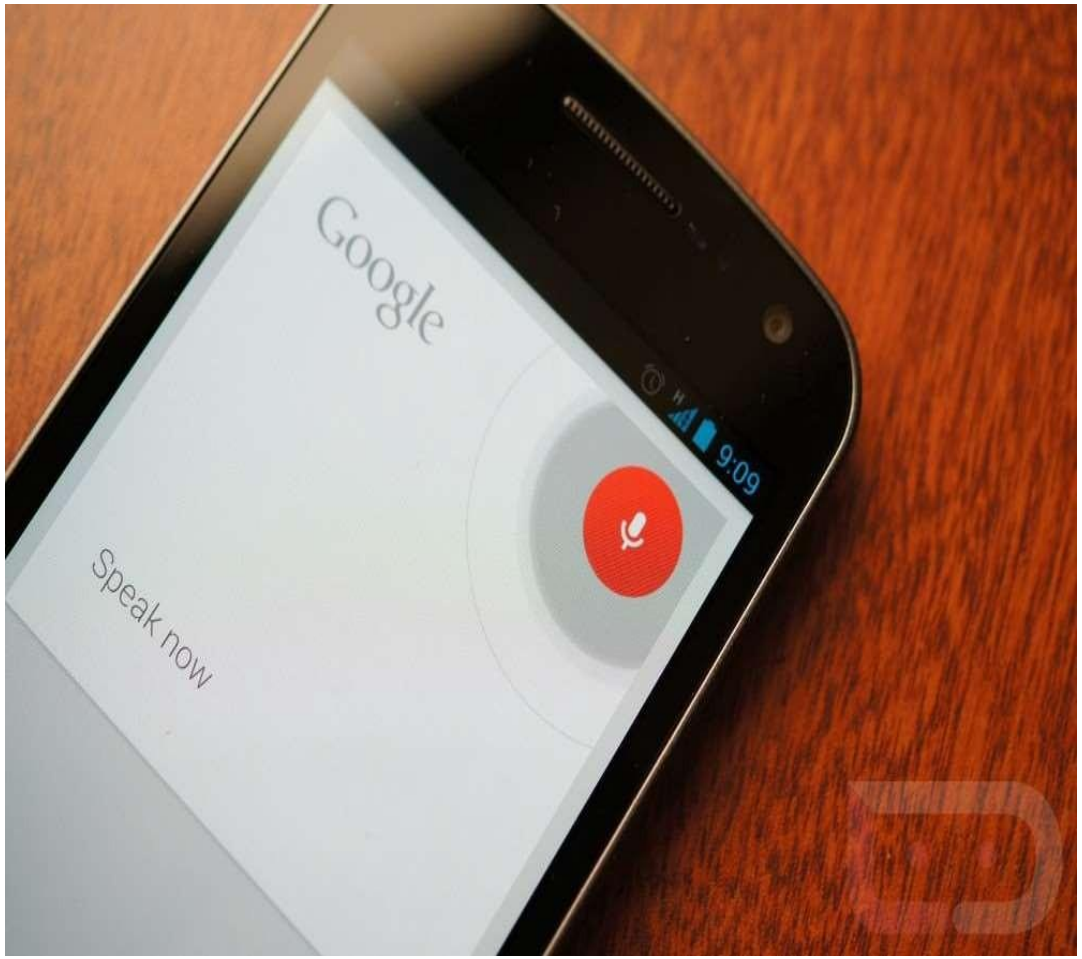
Applications of ML- Facebook

Applications of ML- Google

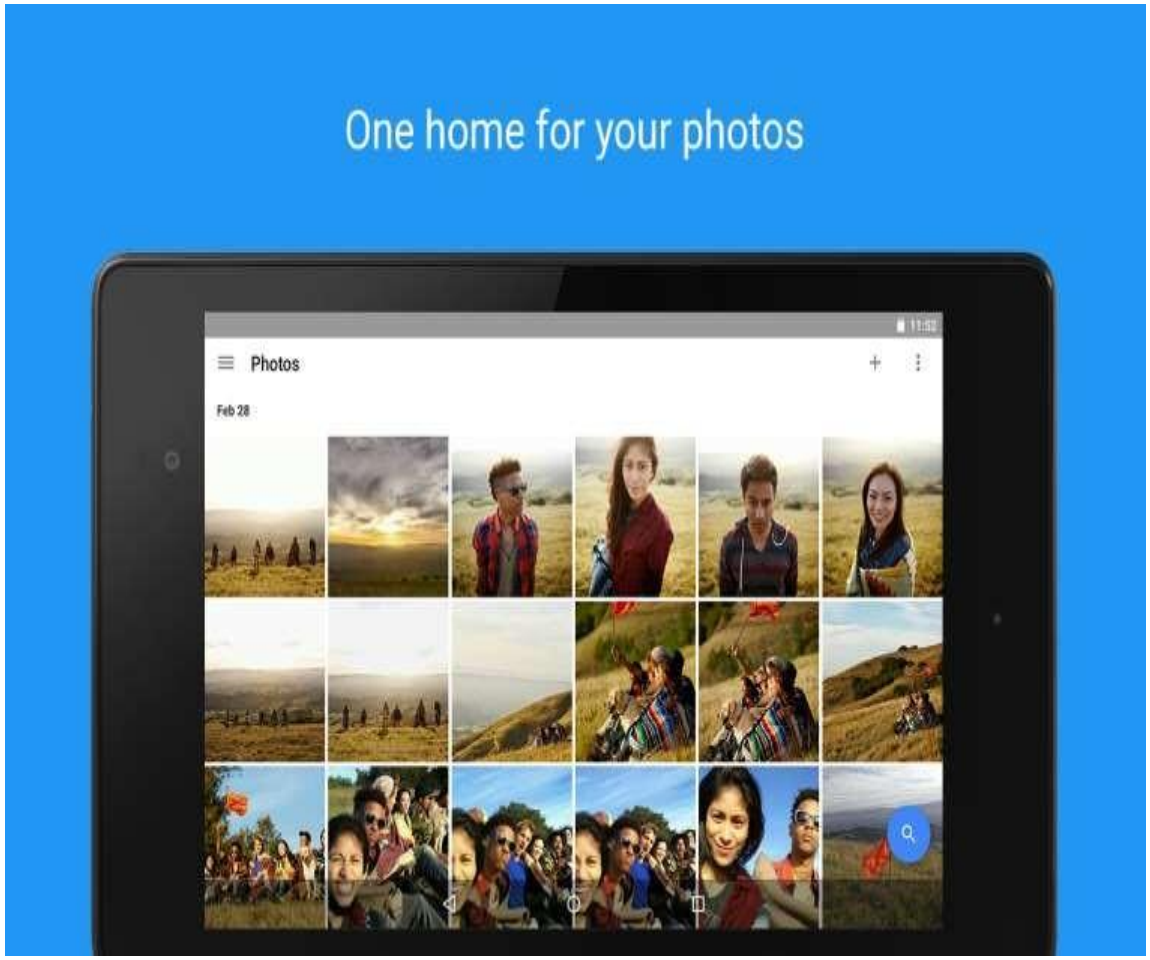
Google Translate



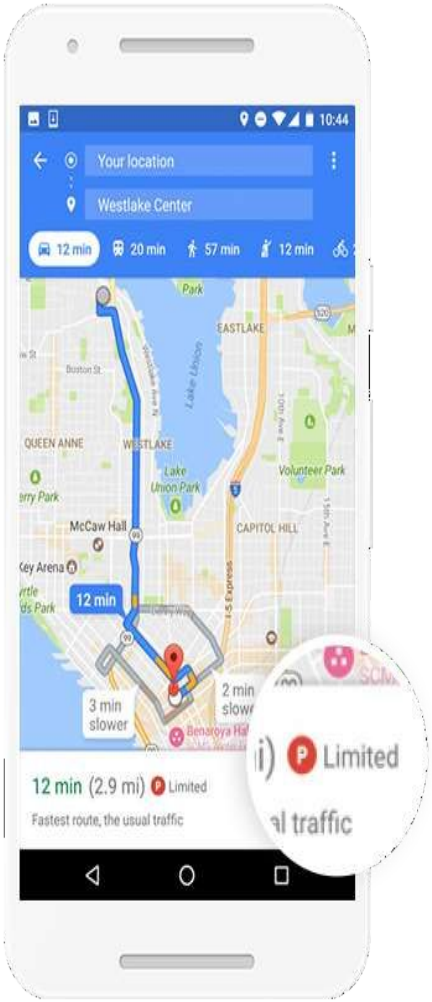
Google Voice search



Google Photos



Google Maps


10:44
Your location
Westlake Center
12 min
20 min
57 min
12 min
Park
EASTLAKE
Boston St.
Lake Union
QUEEN ANNE
WESTLAKE
Lake Union Park
Volunteer Park
McCaw Hall
CAPITOL HILL
Key Arena
12 min
3 min slower
2 min slower
Limited
12 min (2.9 mi) Limited
Fastest route, the usual traffic

Machine learning

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Q.1 Define Machine Learning?

Q.2 Explain Growth of Machine Learning in today's world?

Q.3 Brief difference between traditional and ML programming approach?

Q.4 What are the applications of ML?

Q.5 What are the ML based applications you are using ?