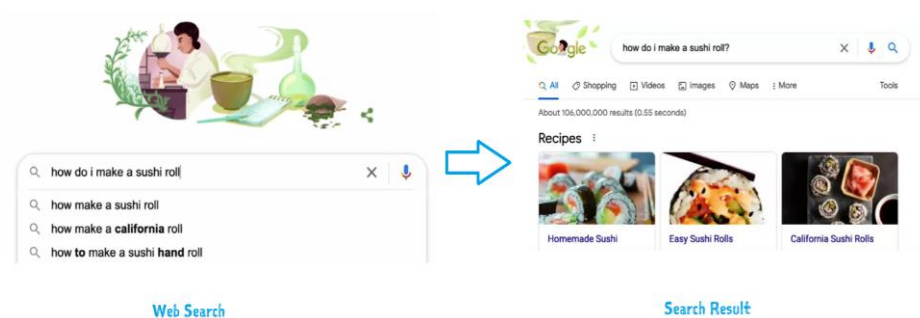## What is Machine Learning?

- We probably use Machine Learning many times a day without even knowing it

Use-case-1

- **We want to find out how to make a sushi roll**

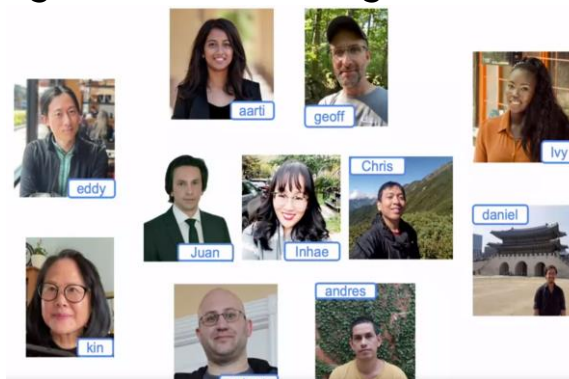Do a web search on Google to find out how to make a sushi roll

Web Search   Search Result

Such search works so well because- their Machine Learning software figures out how to rank web pages

Use-case-2

- **Upload pictures in Instagram or snapchat- Tag friends so that they can see their pictures**

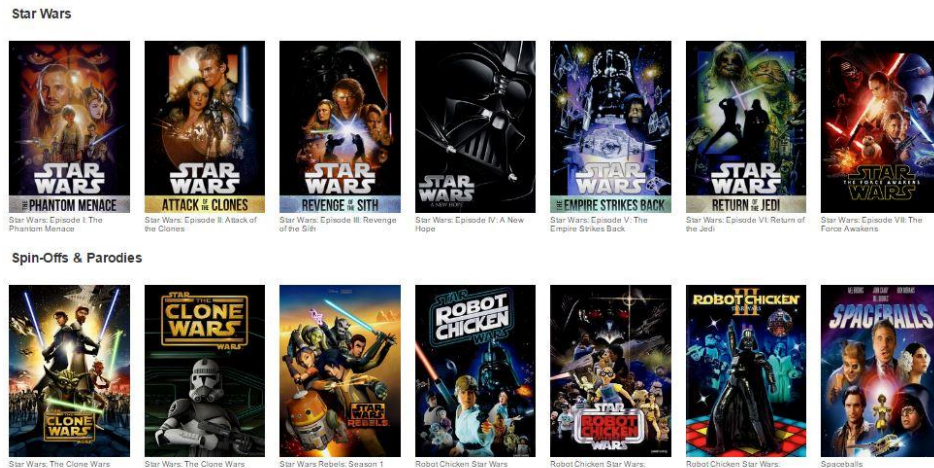These apps can recognize friends and tag them

No need explicit tagging friends to see those picture- instead these apps can automatically recognize friends and tag them

How those apps recognize and tag them? By using **Machine Learning** these apps recognizes and tags them.

Use-case- 3
• **Finding movies in Netflix similar to Star Wars**

Netflix using **Machine Learning** to recommend something as per your like e.g., star wars
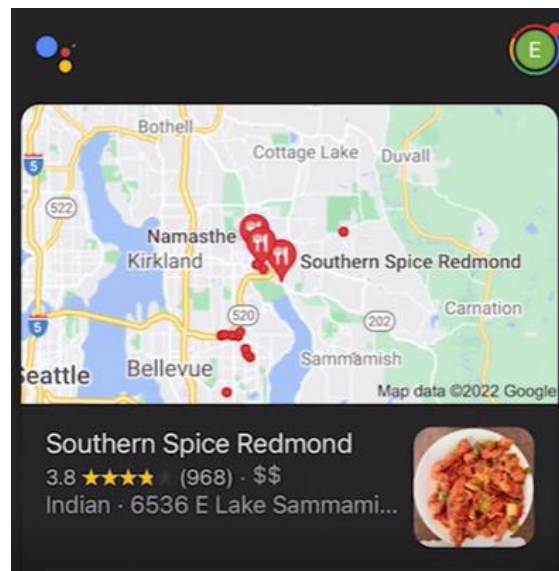

Use-case- 4
• **Use voice in phone to find something**

Voice Search: "Ok, Google, show me Indian Restaurants nearer to me"

Output: Following output is return by Google

It is also possible due to use of **Machine Learning** by the program

Use-case- 5
• **Spam detection**

See the email titled "Congratulations! You've won million dollars!"

Output: Email service flag it as spam

Flagging such fake email as spam is done by **Machine Learning**

- **These were some uses-cases of using AI's in consumer Applications**

- **But the uses of AI is not limited to consumer applications**

- **AI is also growing up and uses into big companies for industrial applications**

- **Let's see some use-cases of such**

Change of climate is deeply concerning issue.

Climate change causes *forest fire*

Climate change causes Floods as well

Machine Learning is using for optimize wind turbine power generation that can save the world from climate changing

Use-case- 7
• **Medicine and Healthcare**

Machine learning makes a way into hospitals to help doctors make accurate diagnosis

Use-case- 8
• **Defects identification**

Using computer vision into factories to inspect if there any defects in assembly line

All there are the different use cases of Machine learning- a science to getting computers to learn without being explicitly programmed.

Questions and Answers : Use as flashcard for review often

What is Machine Learning?

A science to getting computers to learn something without being explicitly programmed

In search engine where Machine Learning works?

In search engine Machine Learning uses to figure out how to rank web pages and thus returns search result as per page ranking

How instagram or snapchat tags friends?

After upload photos- Instagram or Snapchat-
- Uses their Machine Learning Algorithm to recognize friends
- Finally tags them as per recognition
- No explicit tagging mechanism needed to use

How Netflix recommender system works?

The Machine Learning Algorithm of Netflix recommends movies as follows-
- Checkout the movie types those you are watching most
- By this way it learns about your favorite movie type
- Based on that learning the recommender system recommends similar type movies

Example-
- You watched Star Wars
- It will learn that Star Wars type movies are your favorite
- Based on that learning it will recommend all movies those are of star wars type

How voice recognition system works in your phone?

- We provide a command to voice recognition system like follows-
  "Ok, Google, Please suggest me some good Machine learning
  MOOC's"

- Google's Machine Learning system recognize my voice and return
  some good Machine Learning MOOC's with link like Machine Learning
  Specialization by Andrew NG

How machine learning Spam detection helps to detect Spam?

- Machine learning spam detection checks patterns of those mails
  those are marked as spam by mail users like tittle pattern, keyword
  patterns, subject pattern, sender mail pattern, body test pattern
  etc.

- From them Machine learning learns about the pattern of Spam
  emails

- From these learning it detects Spam mail and flag them as Spam

What are the technology uses Machine Learning to prevent climate changing and save the world

Wind turbine power generation that will generate power by using wind so no fuel burning will needed so bad impact of fuel burning will not impacting on the climate

In Healthcare sector how ML are helping?

By allowing doctors to make accurate diagnosis

What is the particular AI tool helps us identify defects in production line?

Computer vision – the particular category of Artificial Intelligence helps us to identify defects in production line.

Learning Style

- Start Pomodoro for 25 minutes
- Read and during read take notes
- Imagine and relate with real world metaphor what you are reading
- After reading recall whole reading without seeing the guide
- Practice spaced repetition to store the reading in long term memory