# Online Course on Machine Learning, Deep Learning and Neural Networks

## Day 1

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# Agenda

1. Demystifying Learning

2. Need for learning

3. What does learning means?

4. Practical Use cases of Machine Learning

5. Types of Machine Learning

# Visual Cliff Experiment



- Gibson and Walk (1960), Cornell University.

- Depth perception in human and other animal species.

- Experiment ⟷ Learning ?

- Learning:
  "do task-> fail -> experience -> repeat till success "

Source : https://en.wikipedia.org/wiki/Visual_cliff

# Need for Learning

improve
compete
interests passion
survival

- Blocks of Learning:
  - Information
  - Knowledge
  - Experience

# Need for Machines

- Data/ Speed of computing
- Time (Latency)
- Services / Applications

# Learning

A computer program is said to **learn** from **experience E** with respect to some class of **tasks T** and performance **measure P**, if its performance at tasks in **T**, as measured by **P**, improves with experience **E**

*-Tom Mitchell*

# Applications of Machine Learning in our day to day life
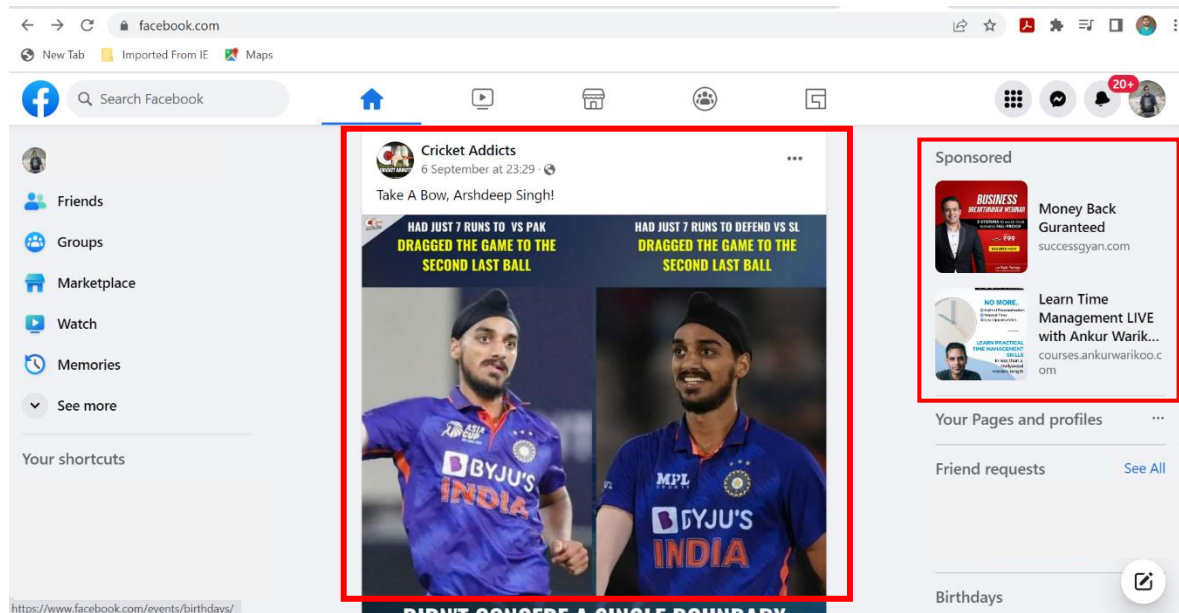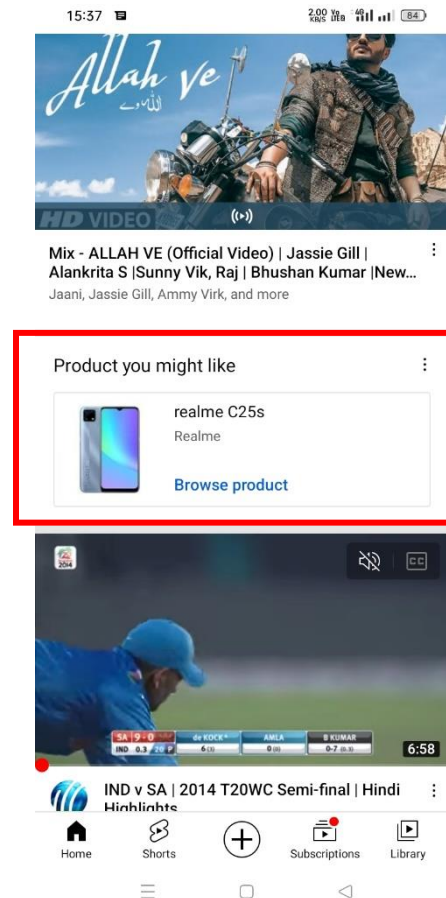


Google Maps



Voice Recognition



Finger Print Recognition

# Importance of Data



Facebook



YouTube

# Why its important to study ML now

- ✓ Abundant amount of data

- ✓ High Computational Resources

- ✓ Growing progress in the available platforms and algorithms

- ✓ Increase support from industry

- ✓ Facebook: 10 Million Photos uploaded per hour

- ✓ YouTube: 1 hour of video uploaded every minute

- ✓ Google: 24 Peta bytes of data per day

- ✓ Twitter 400 Million tweets per day
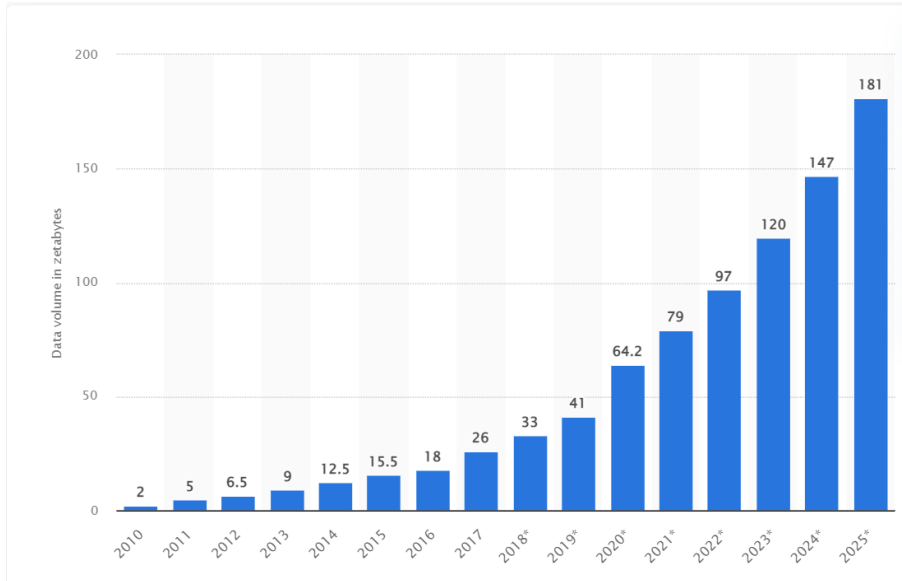
# Types of Machine Learning



**Supervised Learning**

**Un-supervised Learning**

**Reinforcement Learning**

# Importance of Data & Privacy



Growth of Data Generation



Privacy Concerns

**How to bridge this gap? Data vs privacy --- Open research problem**

Source: https://www.statista.com/statistics/871513/worldwide-data-created/
Source: https://www.statista.com/chart/16400/internet-online-privacy/

# Thank You

For your Attention!

Any Questions?