

AI DEMO BATTERY RECOGNIZER

PRESENTED BY WING CHAN

AGENDA

- Al vs Machine Learning vs Deep Learning
- Azure Cognitive Services
- Demo
- Q&A

AI = THINKING MACHINE?



AI VS MACHINE LEARNING VS DEEP LEARNING

Artificial Intelligence

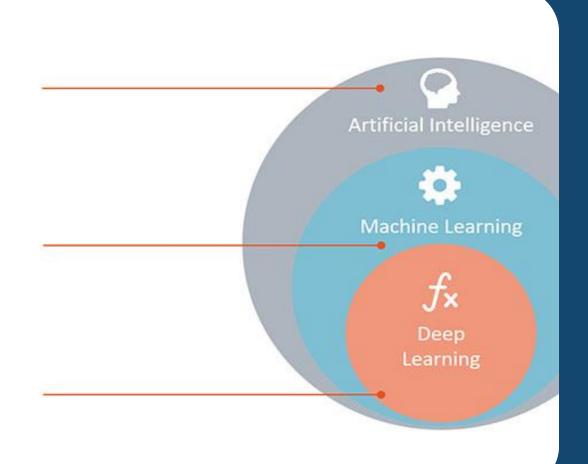
Any technique which enables computers to mimic human behavior.

Machine Learning

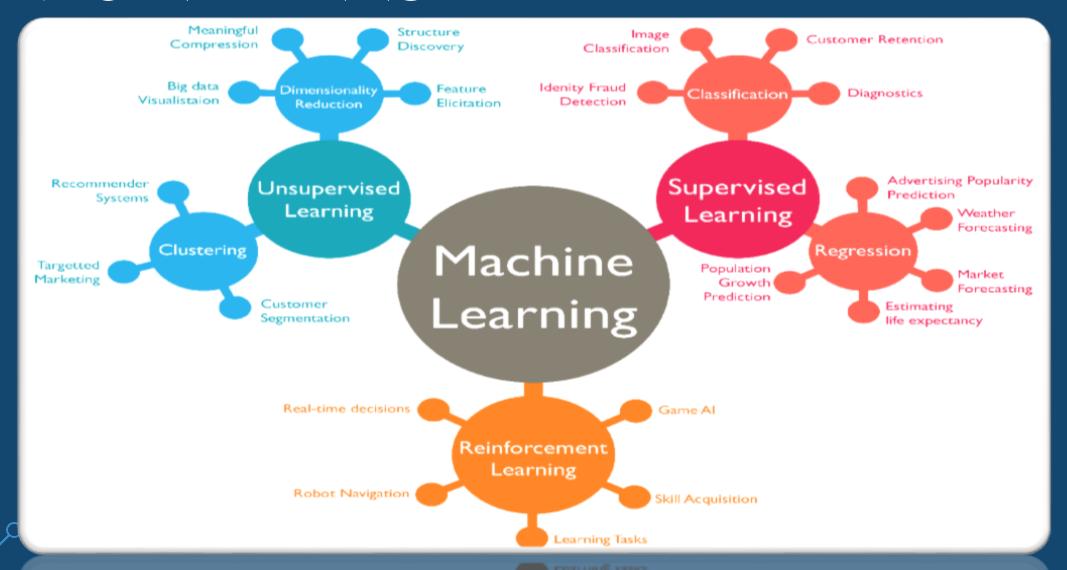
Subset of AI techniques which use statistical methods to enable machines to improve with experiences.

Deep Learning

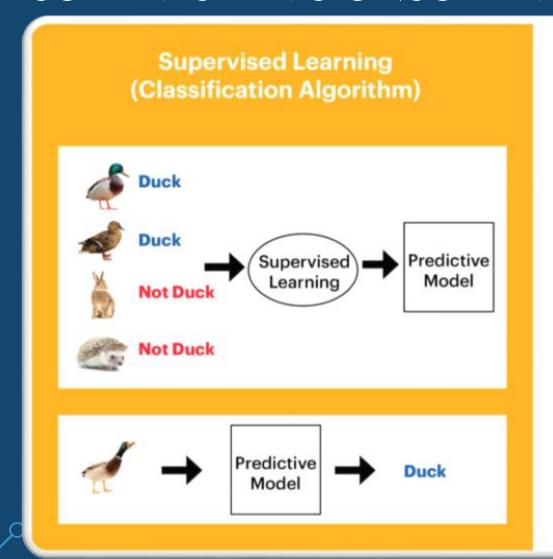
Subset of ML which make the computation of multi-layer neural networks feasible.

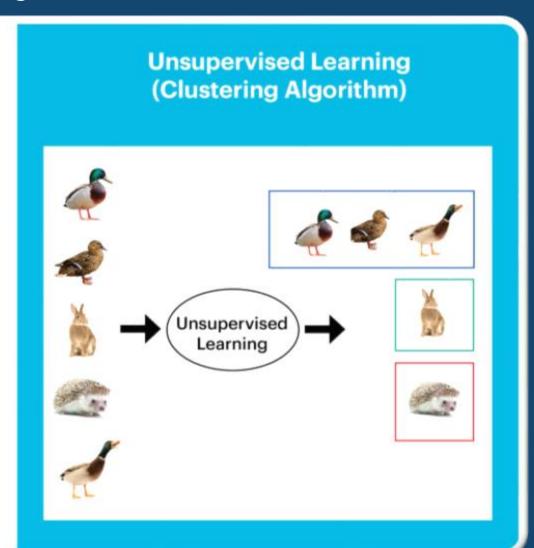


MACHINE LEARNING



SUPERVISED VS UNSUPERVISED





REINFORCEMENT LEARNING



MACHINE LEARNING VS DEEP LEARNING

Machine Learning



Input





Feature extraction







Output

CAR **NOT CAR**

Deep Learning





Feature extraction + Classification



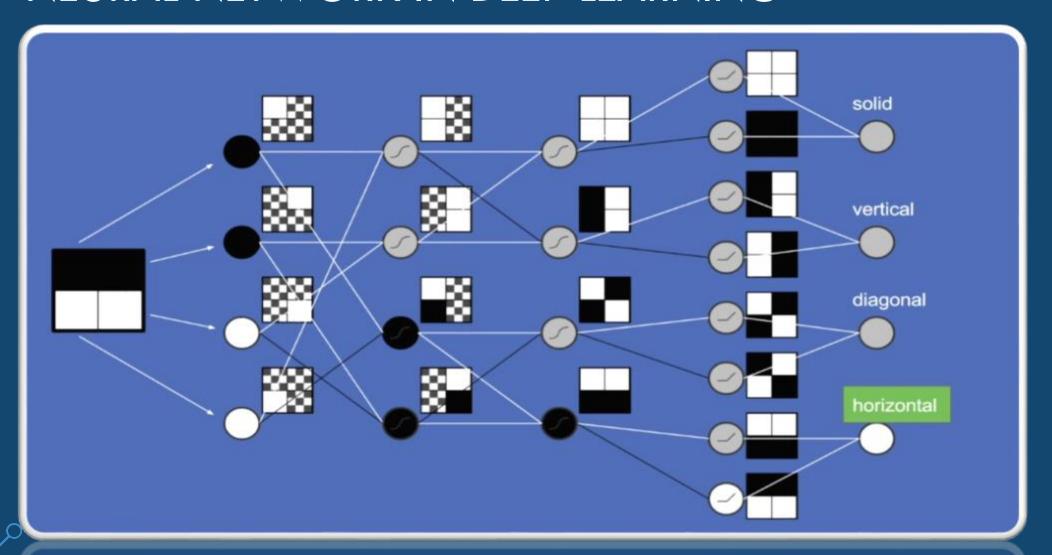
Output

CAR **NOT CAR**

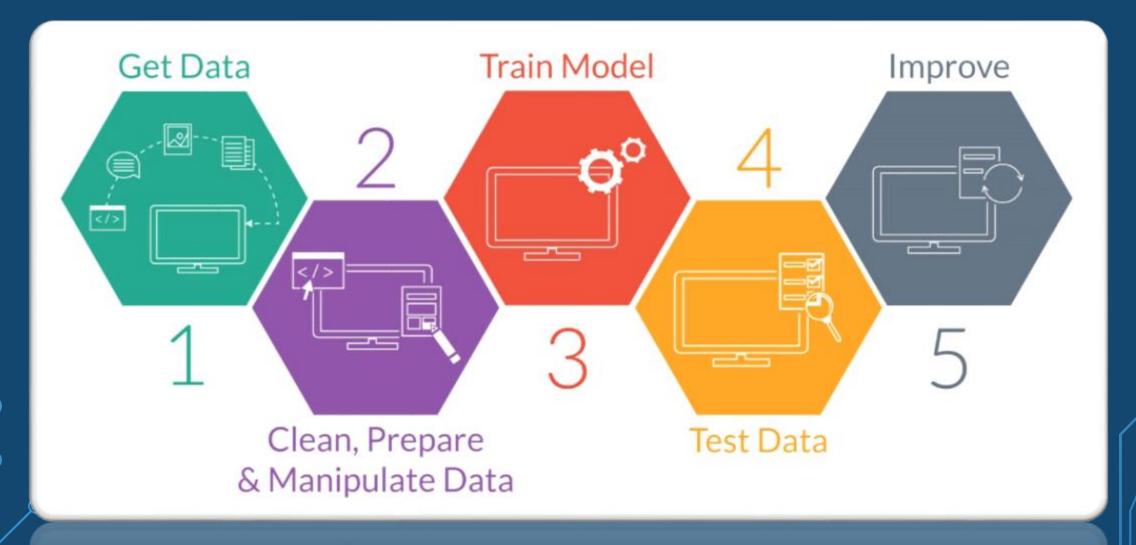




NEURAL NETWORK IN DEEP LEARNING



MACHINE LEARNING WORKFLOW



AZURE COGNITIVE SERVICES

Give your apps a human side













Vision

Computer Vision

Content Moderator

Emotion

Face

Video

Video Indexer

Custom Vision Service

Speech

Bing Speech

Speaker Recognition

Custom Speech Service

Language

Bing Spell Check

Language Understanding

Linguistic Analysis

Translator Text & Speech

Web Language Model

Text Analytics

Knowledge

Academic Knowledge

Entity Linking

Knowledge Exploration

Recommendations

QnA Maker

Custom Decision Service

Search

Bing Autosuggest

Bing Image Search

Bing News Search

Bing Video Search

Bing Web Search

Bing Custom Search

Labs

Project Prague (gesture)

Cuzco (events)

Johannesburg (routing)

Nanjing (Isochrones)

Abu Dhabi (distance matrix)

Wollongong (location)

Enduring Freedom

(just kidding @)

DEMO

Setup Service

 Create Custom Vision Service in Azure Cognitive services

Input data

 Upload Battery Images

Classification

 Tags battery images per battery model types

Training Model

 Generate a trained model by training model

Export Models

 Export CoreML and TensorFlow models for offline usage

Use Your Models

 Embedded the exported models to your iOS and Android apps



QUESTIONS?

Demo App Source code

https://goo.gl/AcY2Qd