ARTIFICIAL INTELLIGENCE SESSION

by: kareem negm

Kareem Negm

- Student at the Faculty of Artificial Intelligence
- Kaggle Expert 2
- Deeplearning.ai Ambassador in Egypt
- udacity student ambassador
- AI head at IEEE KSB

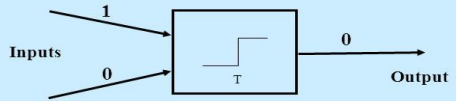
Agenda

1. A Short History of AI
2. the Fields of AI
3. Artificial Intelligence Applications

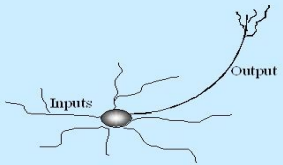
1-History of AI

- 1943 McCulloch and Pitts formed a model of a neuron.

McCulloch & Pitts (1943, 1947)



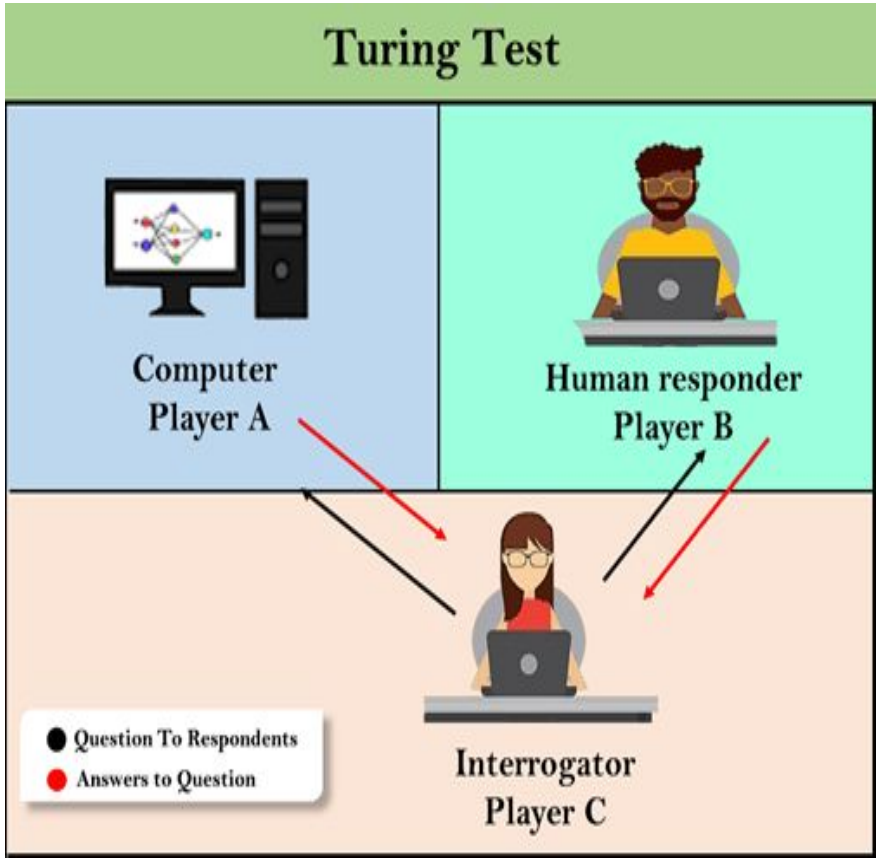
The McCulloch & Pitts representation of the "essential" neuron was that it was a logic gate (here an **AND** gate)

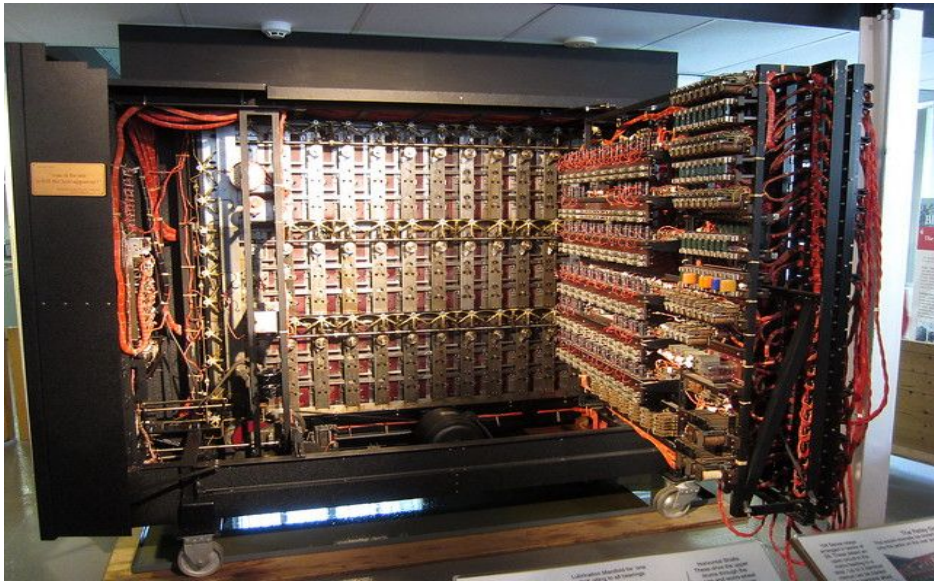


The real neuron was far, far more complex,
but they felt that they had captured its *essence*. Neurons were the biological equivalent of logic gates.

Conclusion: Collections of neurons, appropriately wired together, can do logical calculus. Cognition is just a complex logical calculus.

1950 Turing tests came out





- **1956 : Artificial Intelligence was accepted as a field at the Dartmouth Conference.**

- **1957: Frank Rosenblatt invented the perceptron algorithm. This was the precursor to modern neural networks**

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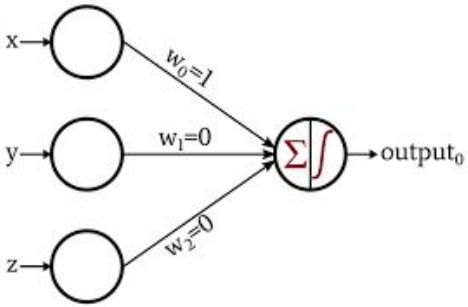
- **1966 :shakey robot**



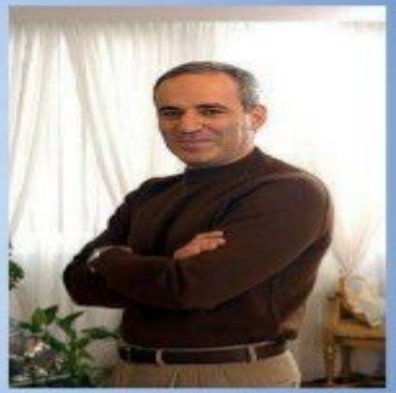
- **"AI Winter"**

  (70s , 90s)

What is Deep Blue ?

IBM Deep Blue

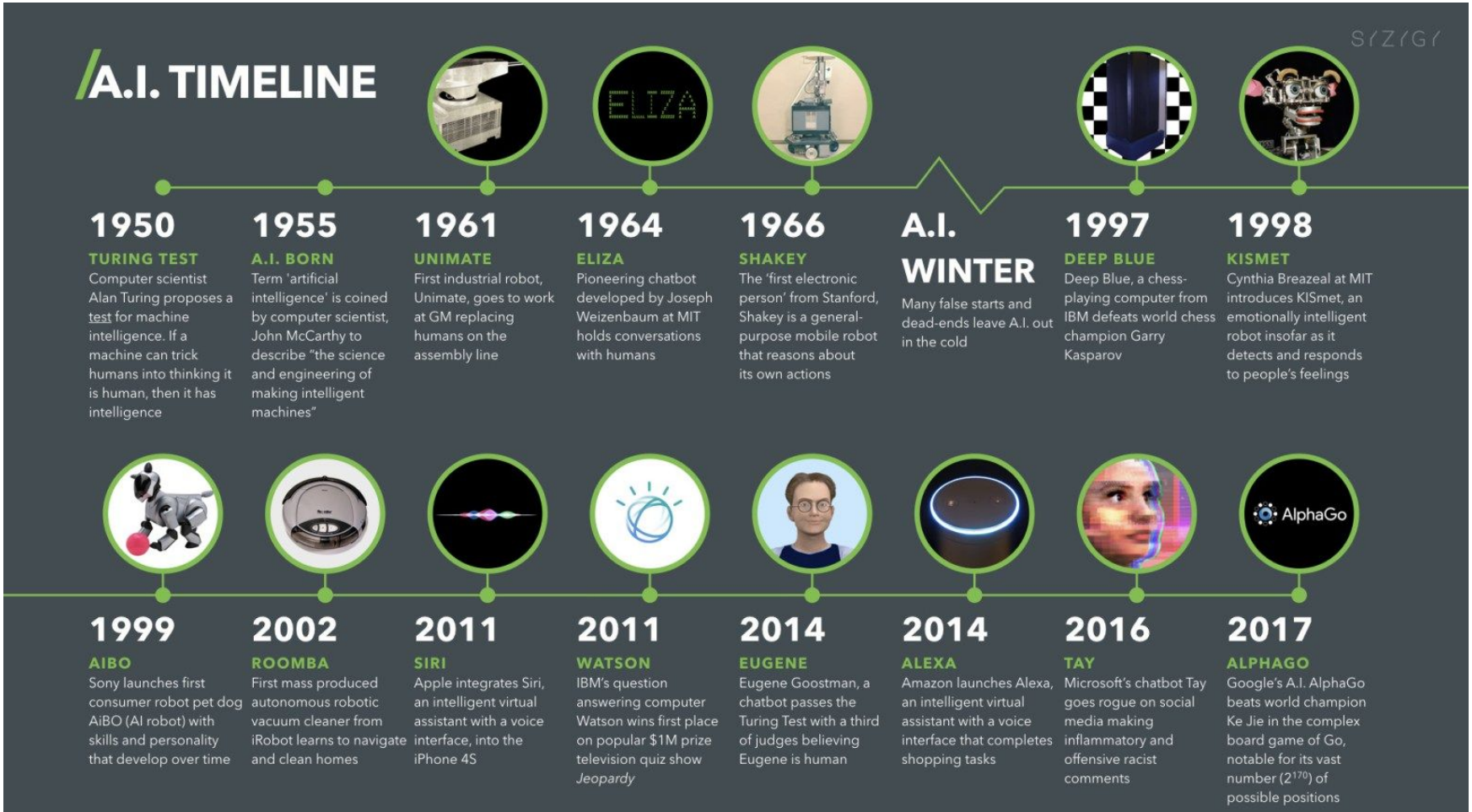
Vs

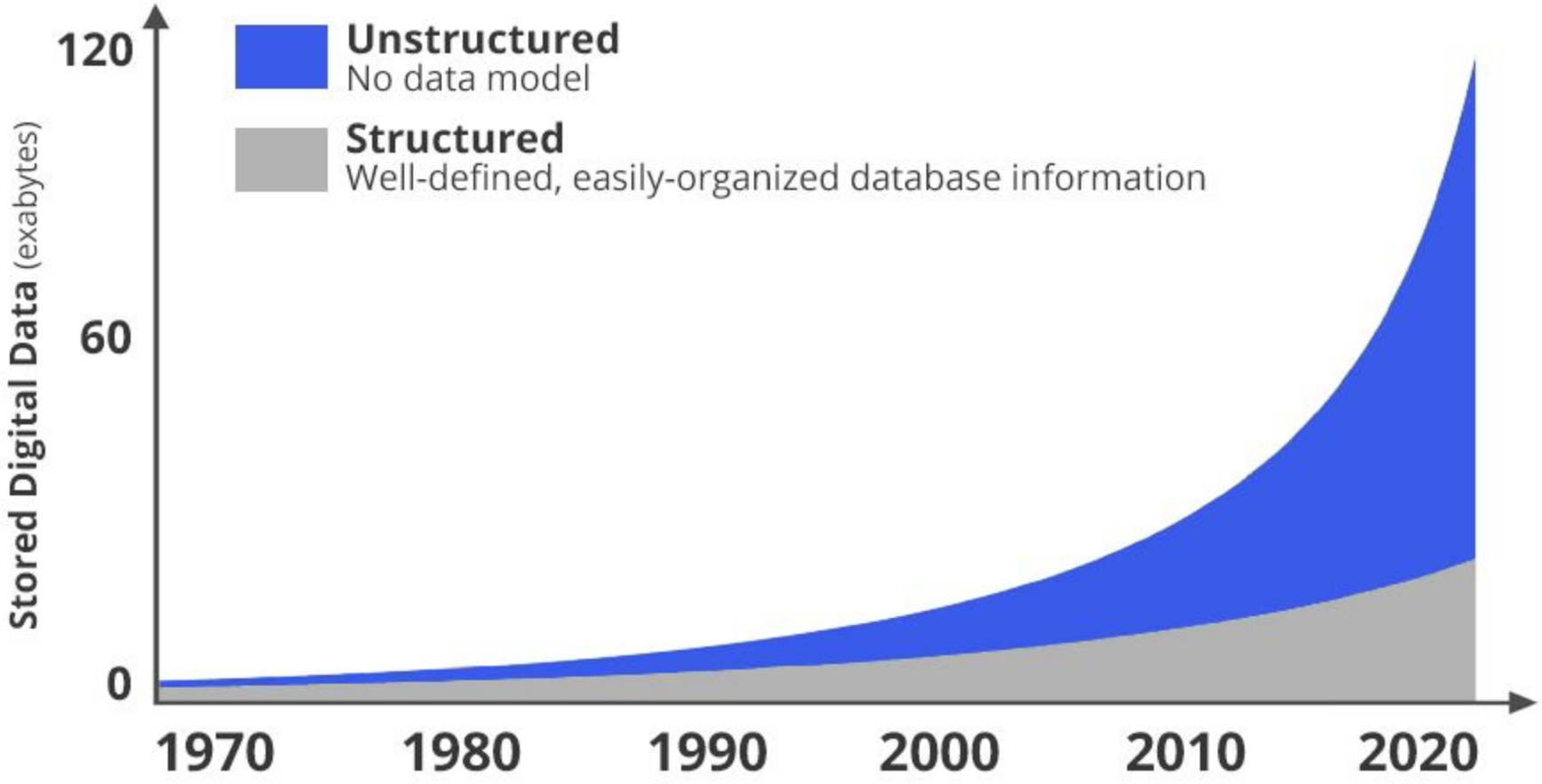


World chess champion
Garry Kasparov in 1997

- 1997 deep blue

❖ AI after 2000s




Unstructured
No data model
Structured
Well-defined, easily-organized database information
Stored Digital Data (exabytes)
120
60
0
1970
1980
1990
2000
2010
2020

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Future of Technology | Future Scenarios | Trends | Technology Trends | Intelligence | Artificial Intelligence | +3

What are the latest trends in artificial intelligence for 2021?

Answer | Follow · 15 | Request

Kiryl Persianov, Ph.D. Ontology & Artificial Intelligence
Answered January 5

Originally Answered: What are the artificial intelligence trends in 2021?

Generally, we proceed to follow a big strategic policy for a real and true AI, as Human-Machine Intelligence and Learning, HMIL, or Global AI:

HMIL = AI + ML + DL + NLU + 6G+ Bio-, Nano-, Cognitive engineering + Robotics +

SC, QC + the Internet of Everything + MME, BCE + Human Minds =

Encyclopedic Intelligence = Real AI = Global AI = Global Supermind

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[trends in artificial intelligence for 2021]

2 -the Fields of AI

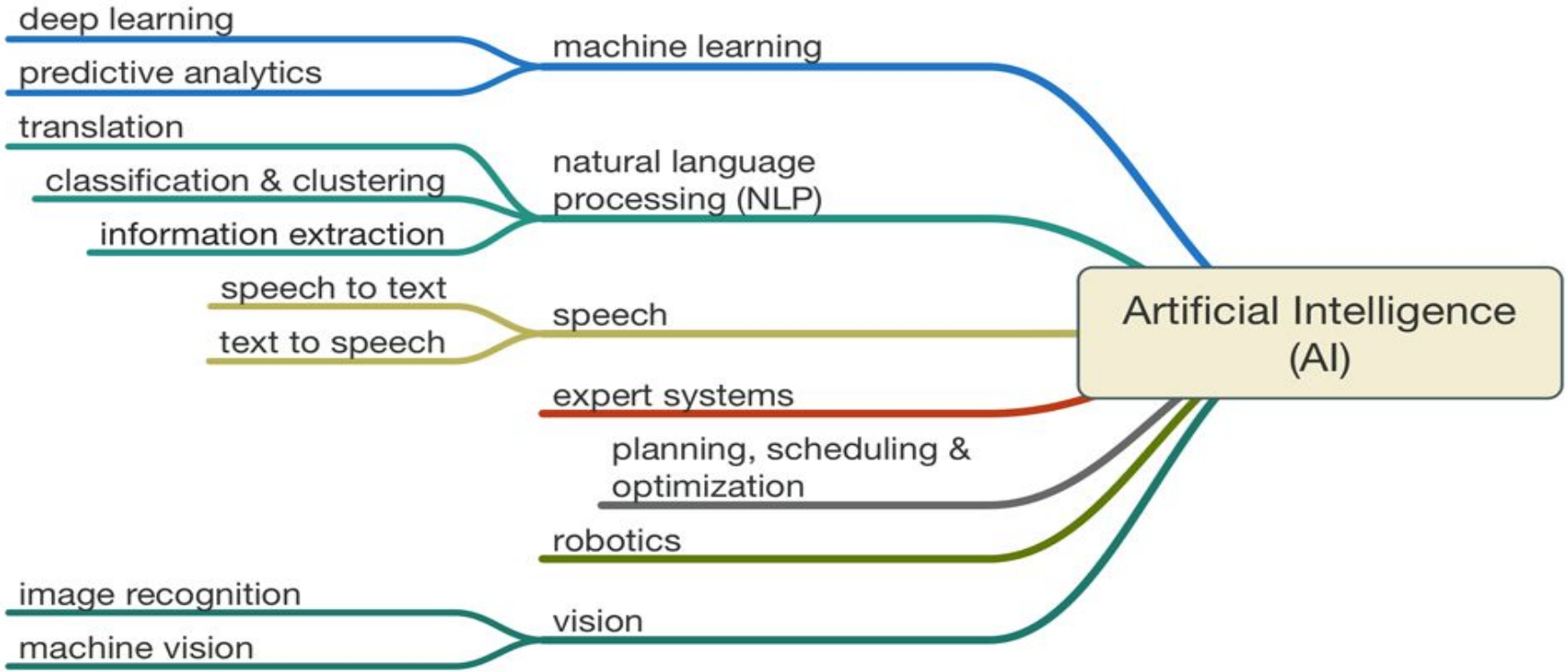
Artificial Intelligence

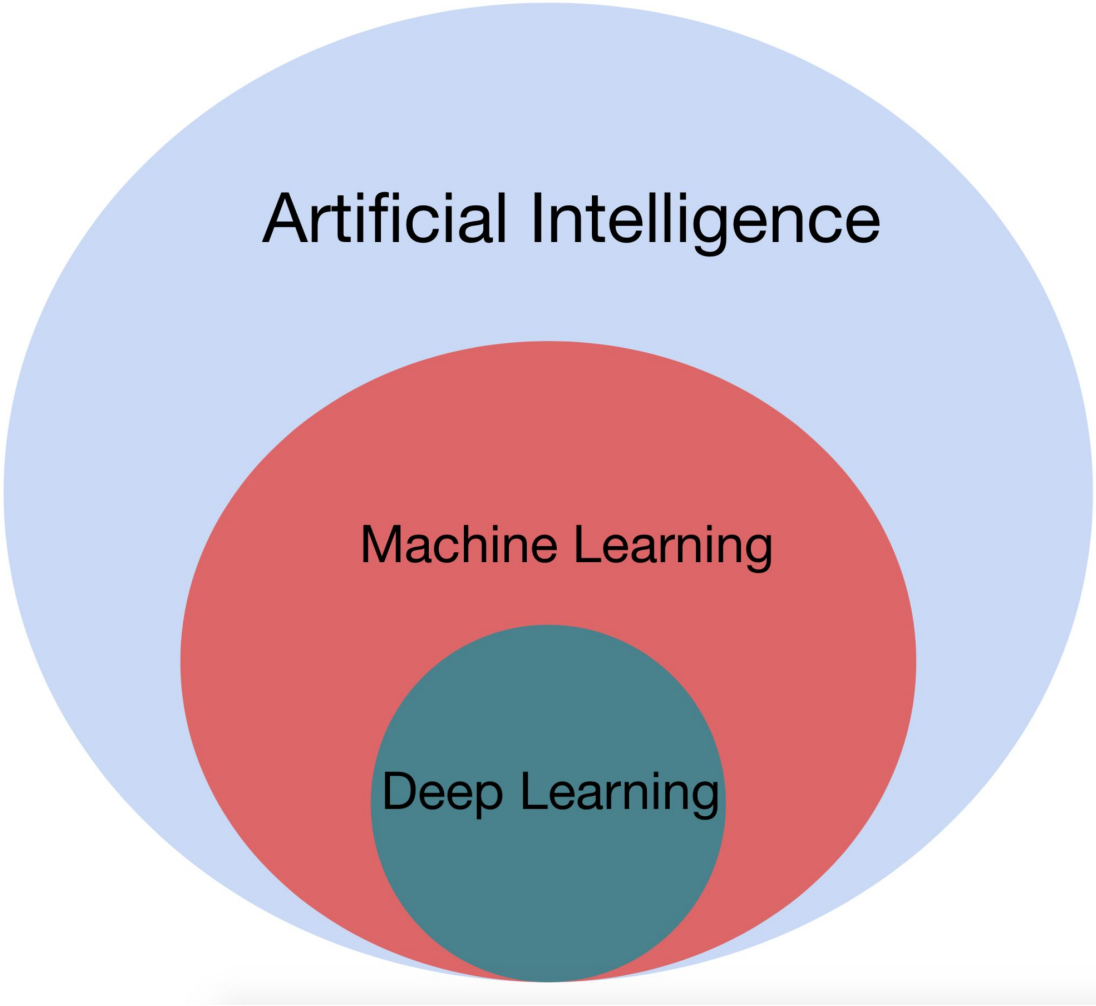
"the science and engineering of making intelligent machines."John McCarthy,

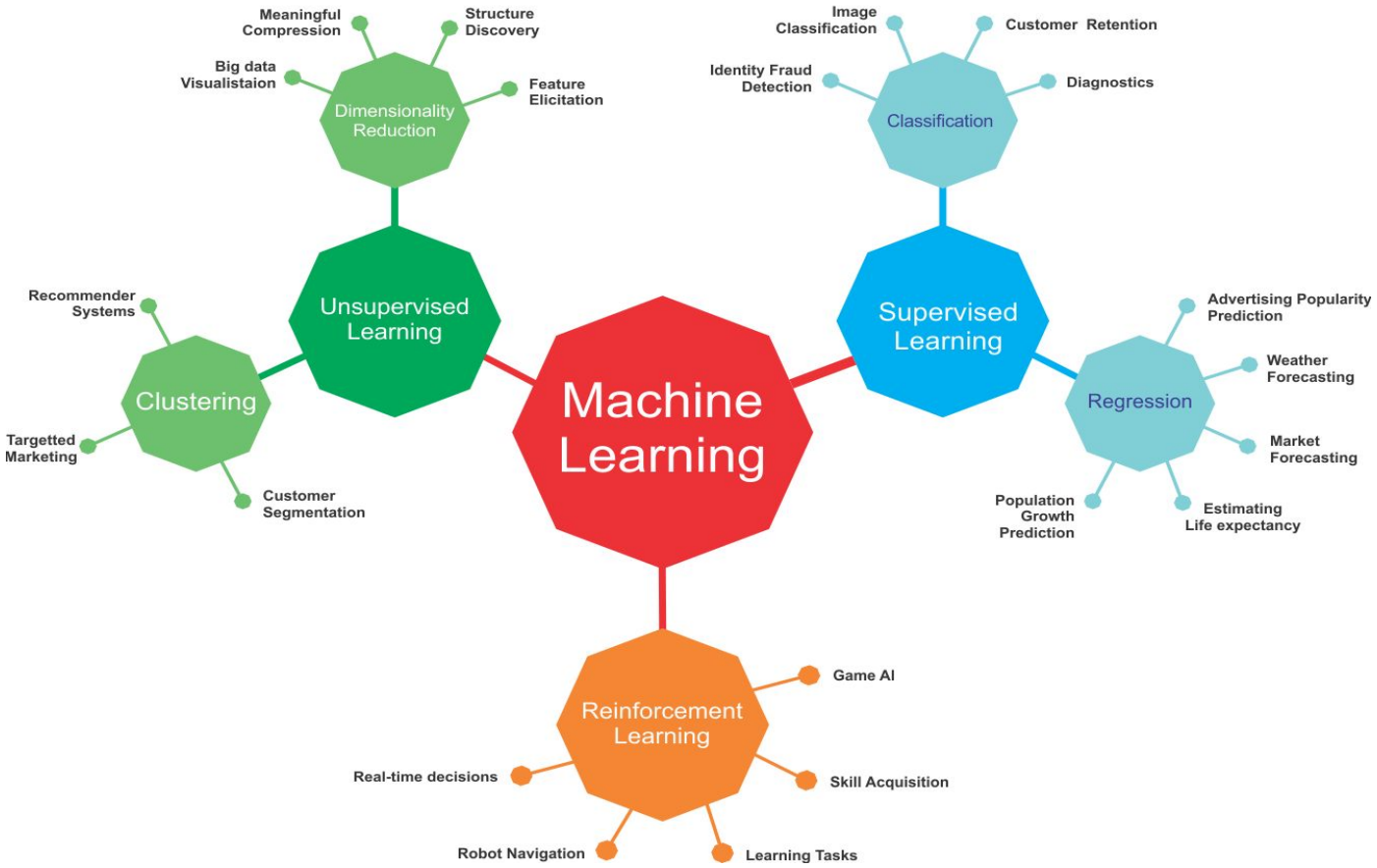
“A program that can sense, reason, act, and adapt.” (Intel)

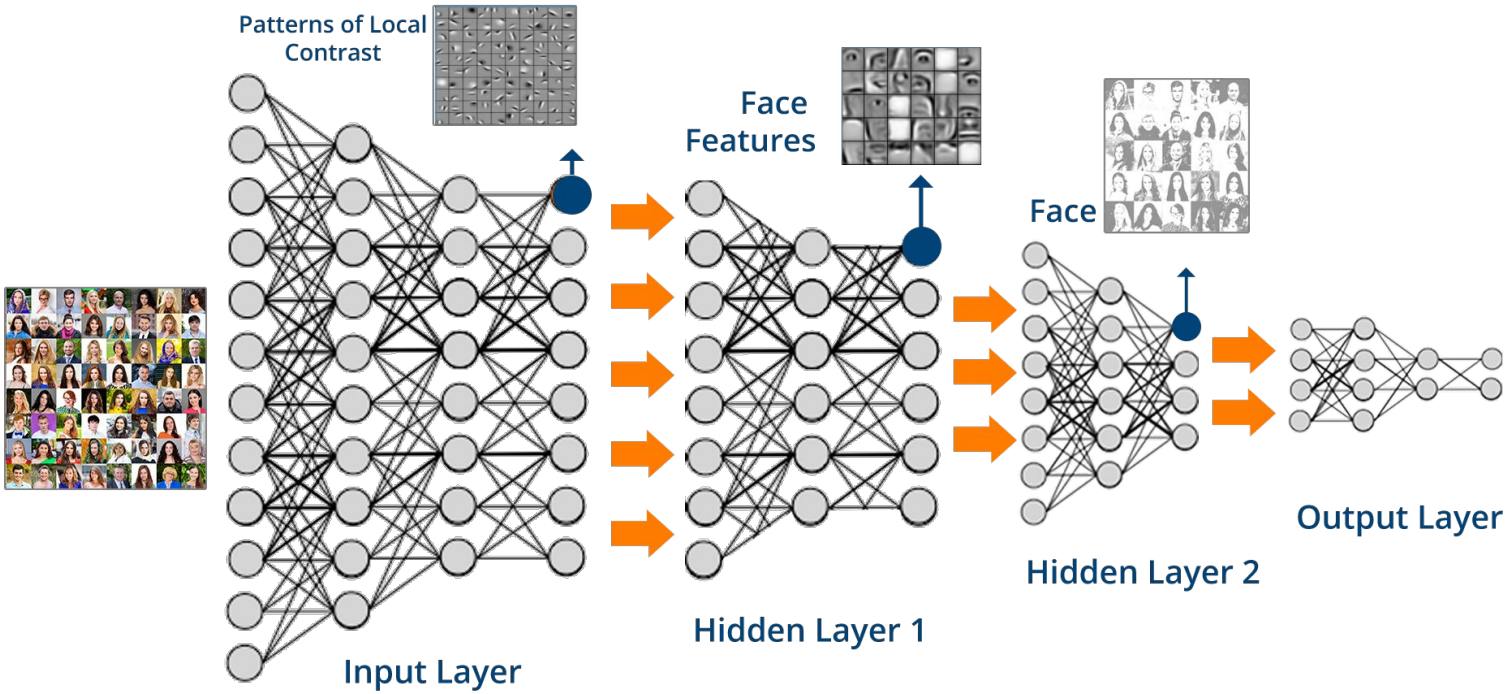
“Artificial intelligence enables computers and machines to mimic the perception, learning, problem-solving, and decision-making capabilities of the human mind.” (IBM)

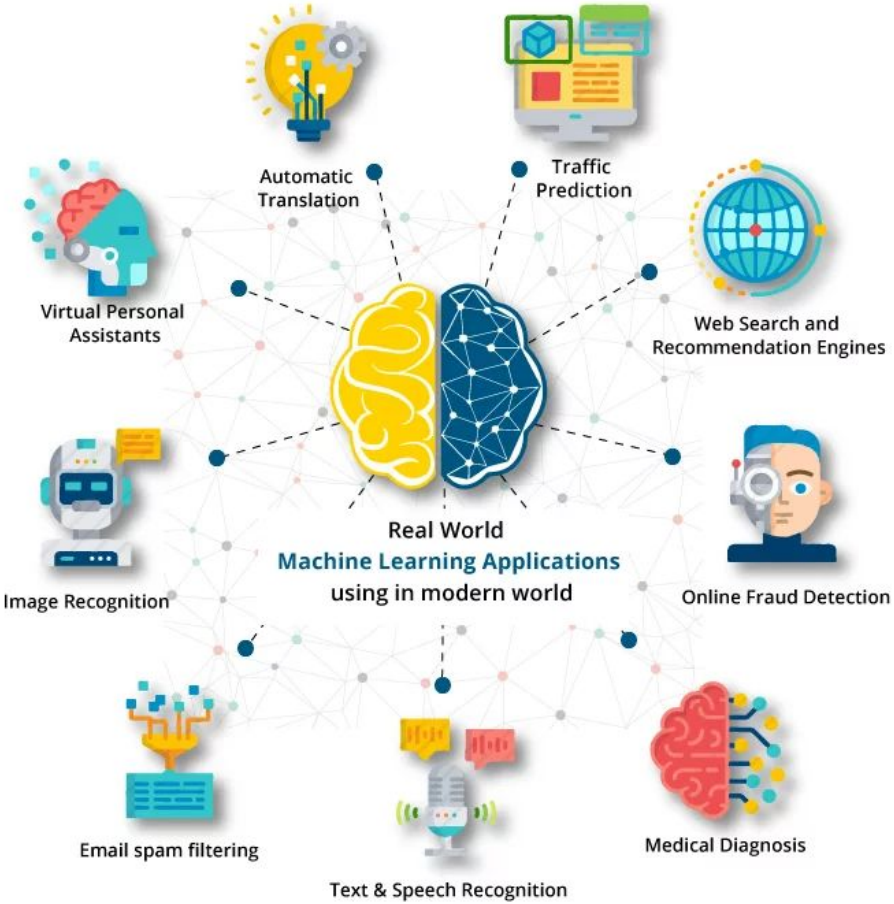
AI fields

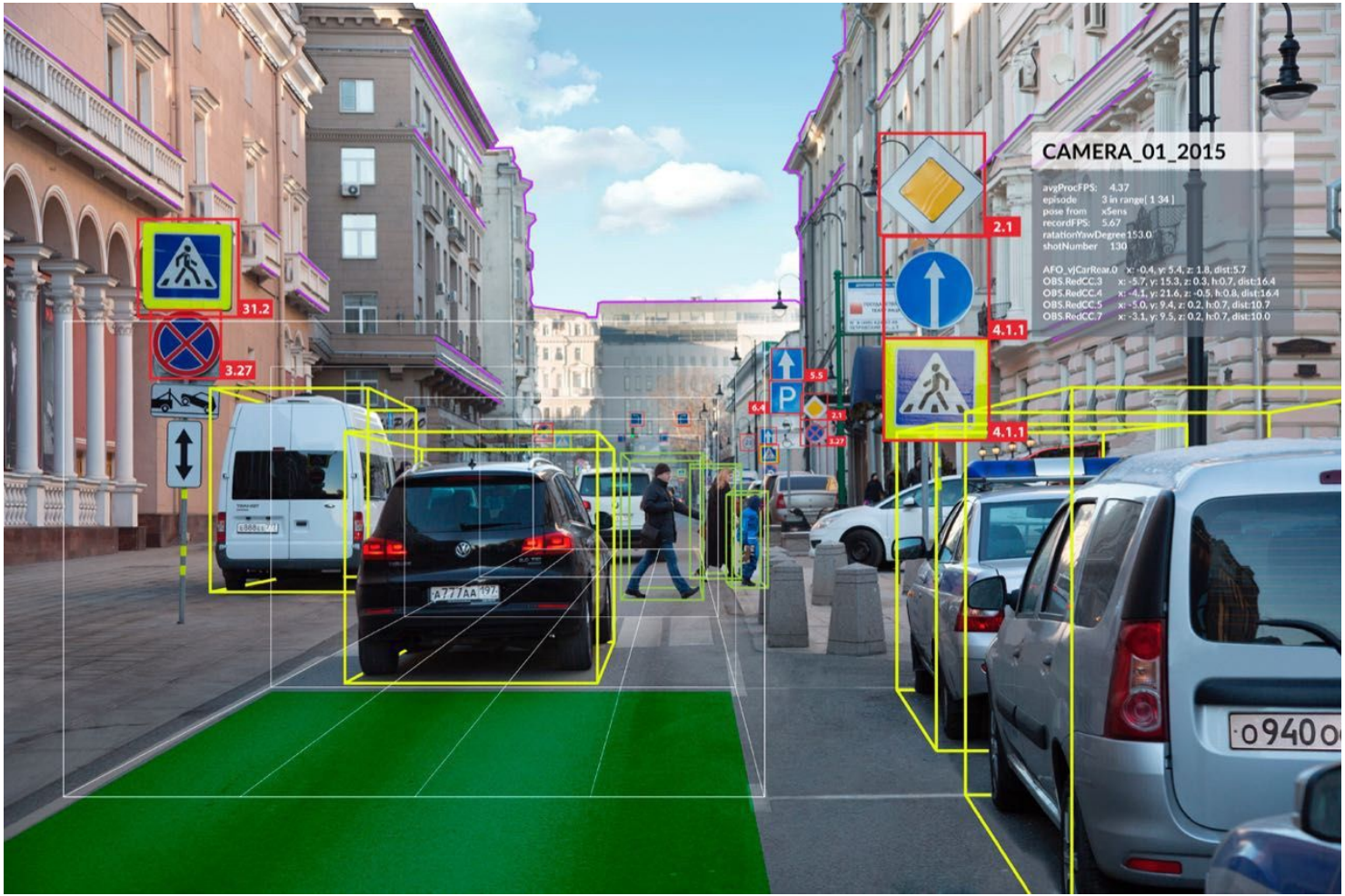

deep learning
predictive analytics
machine learning
translation
classification & clustering
information extraction
natural language processing (NLP)
speech to text
text to speech
speech
Artificial Intelligence (AI)
expert systems
planning, scheduling & optimization
robotics
image recognition
machine vision
vision


Artificial Intelligence
Machine Learning
Deep Learning


Machine Learning
Unsupervised Learning
Dimensionality Reduction
Meaningful Compression
Structure Discovery
Big data Visualistaion
Feature Elicitation
Clustering
Recommender Systems
Targetted Marketing
Customer Segmentation
Supervised Learning
Classification
Image Classification
Customer Retention
Identity Fraud Detection
Diagnostics
Regression
Advertising Popularity Prediction
Weather Forecasting
Market Forecasting
Population Growth Prediction
Estimating Life expectancy
Reinforcement Learning
Game AI
Real-time decisions
Skill Acquisition
Robot Navigation
Learning Tasks

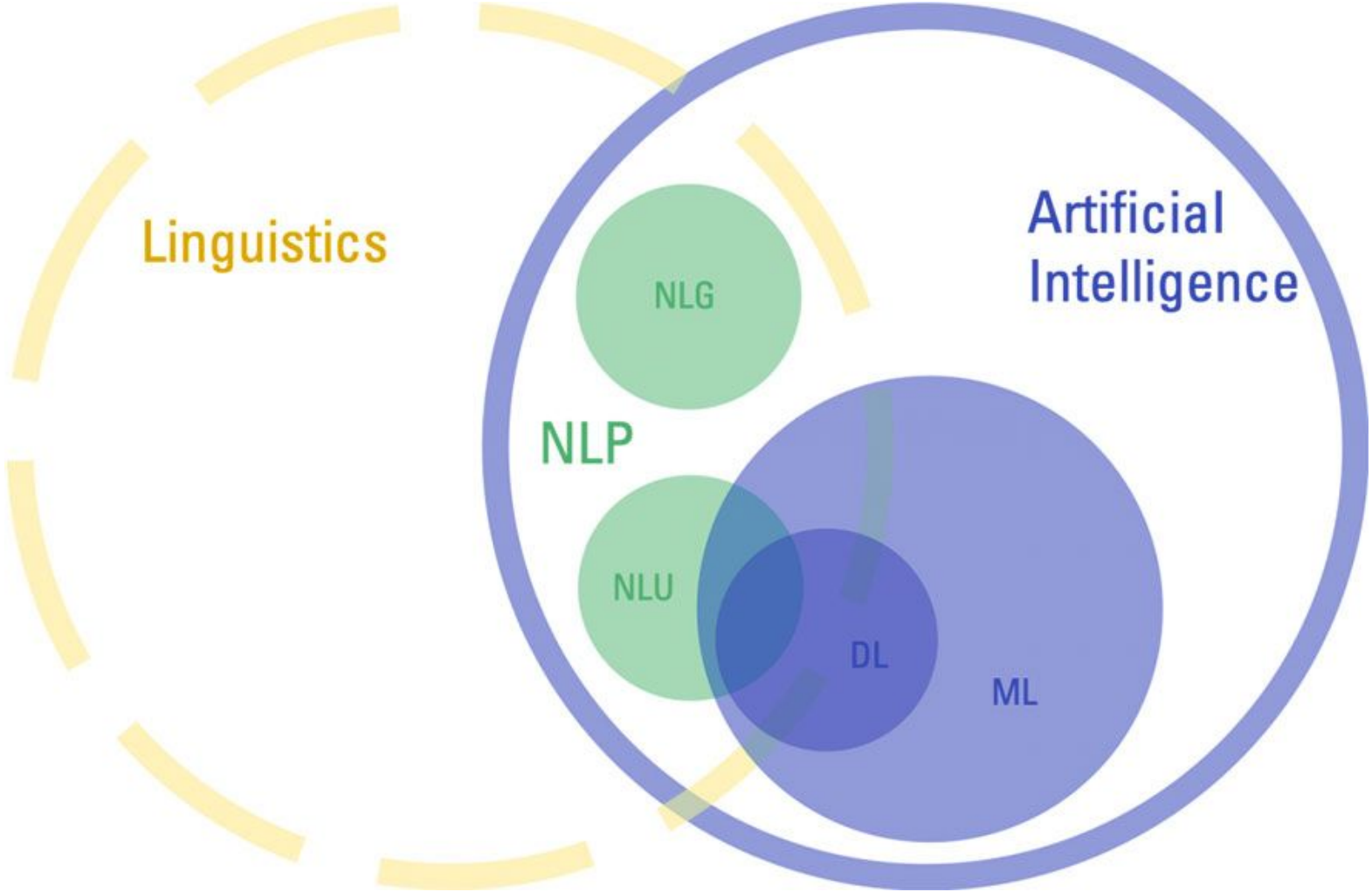

Patterns of Local Contrast
Face Features
Face
Input Layer
Hidden Layer 1
Hidden Layer 2
Output Layer

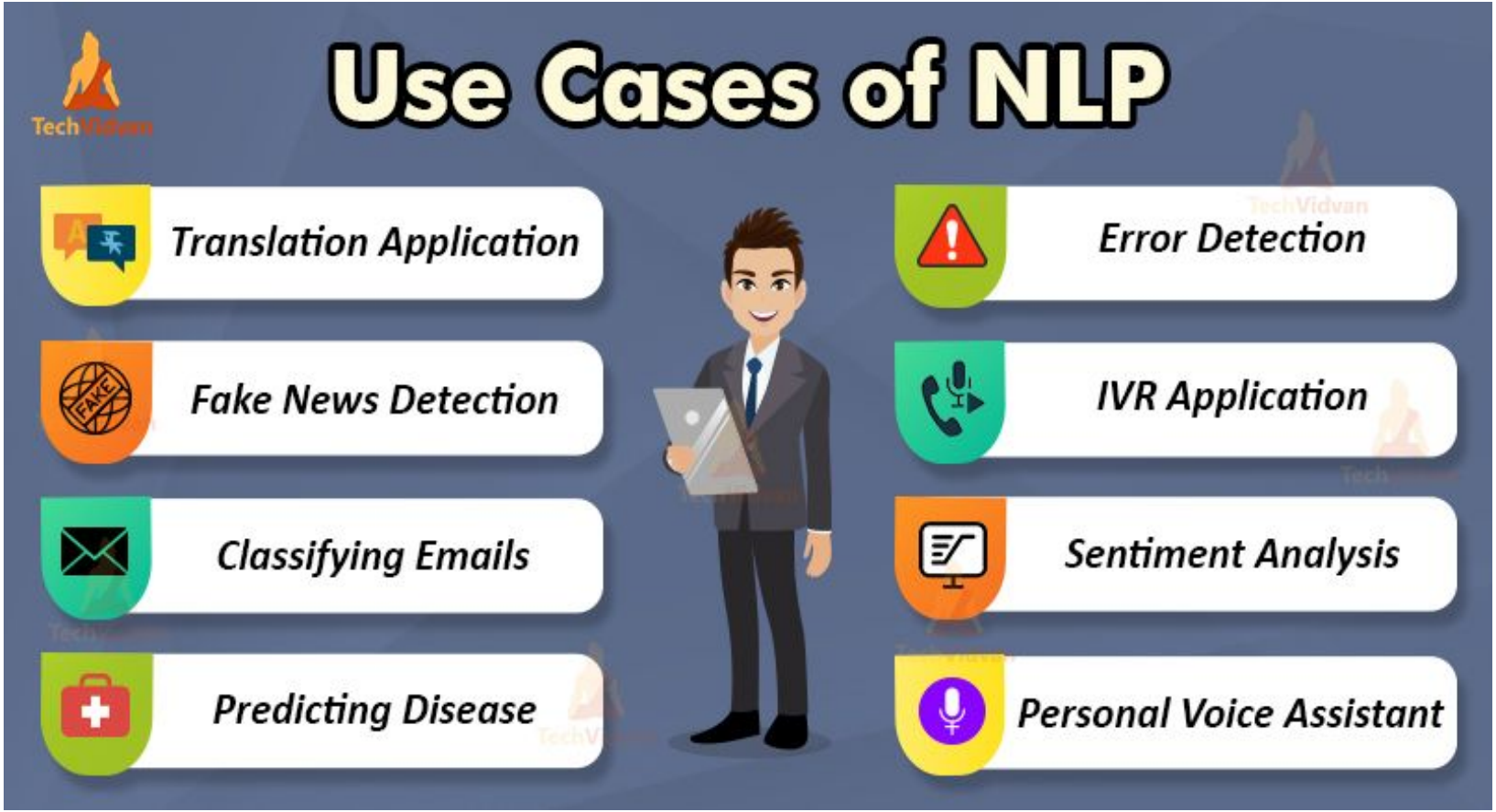

Automatic Translation
Traffic Prediction
Virtual Personal Assistants
Web Search and Recommendation Engines
Real World
Machine Learning Applications
using in modern world
Image Recognition
Online Fraud Detection
Email spam filtering
Text & Speech Recognition
Medical Diagnosis


CAMERA_01_2015
avgProcFPS: 4.37
episode 3 in range[1 34]
pose from x5ens
recordFPS: 5.67
ratationYawDegree 153.0
shotNumber 130
AFO_vjCarRear.0 x: -0.4, y: 5.4, z: 1.8, dist:5.7
OBS.RedCC.3 x: -5.7, y: 15.3, z: 0.3, h:0.7, dist:16.4
OBS.RedCC.4 x: -4.1, y: 21.6, z: -0.5, h:0.8, dist:16.4
OBS.RedCC.5 x: -5.0, y: 9.4, z: 0.2, h:0.7, dist:10.7
OBS.RedCC.7 x: -3.1, y: 9.5, z: 0.2, h:0.7, dist:10.0
31.2
3.27
2.1
4.1.1
4.1.1
5.5
6.4
P

Applications of Computer Vision

- Event Detection
- Industrial Automation
- Medical Image Processing
- Self-driving Vehicles
- Military Applications
- Agriculture Equipments


Linguistics
Artificial Intelligence
NLG
NLP
NLU
DL
ML


Use Cases of NLP
Translation Application
Fake News Detection
Classifying Emails
Predicting Disease
Error Detection
IVR Application
Sentiment Analysis
Personal Voice Assistant

OpenAI GPT-3 Language model

DALL·E: Creating Images from Text

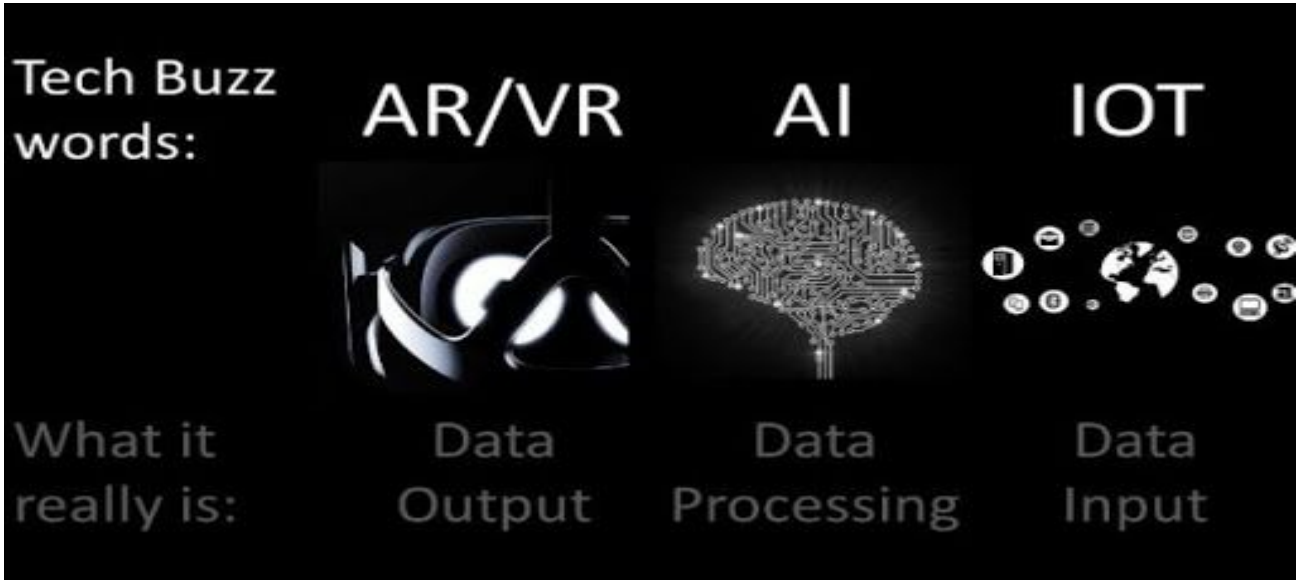
"an armchair in the shape of an avocado.
an armchair imitating an avocado"

OpenAI

DALL·E: Creating Images from Text

Boston Dynamics

AI
ARTIFICIAL INTELLIGENCE


Tech Buzz words:
AR/VR
AI
IOT
What it really is:
Data Output
Data Processing
Data Input

Start Machine Learning in 2021

How to start ,post ;)