Introduction to AI,ML,DL

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Introduction

- Raghu Prasad – BE, MS
- Total of 29 years of experience
- 7 years as a lecturer in Engineering College
- 22 Years into IT
- Worked with companies like CISCO,CSC,ICICI,First Apex – NTT Data
- Currently into Corporate training and consultancy
- Worked with corporates and public sector
- Technologies – Java,Python,Data Sciences,Web technologies,Java Script technologies (MEAN stack),IOT,Test Automation – Selenium,JMeter

Topics

- Introduction to AI,ML and Deep Learning
- Introduction to Cognitive Computing
- Applications of Artificial Intelligence
- History of AI
- Scope of AI/ML in BFSI

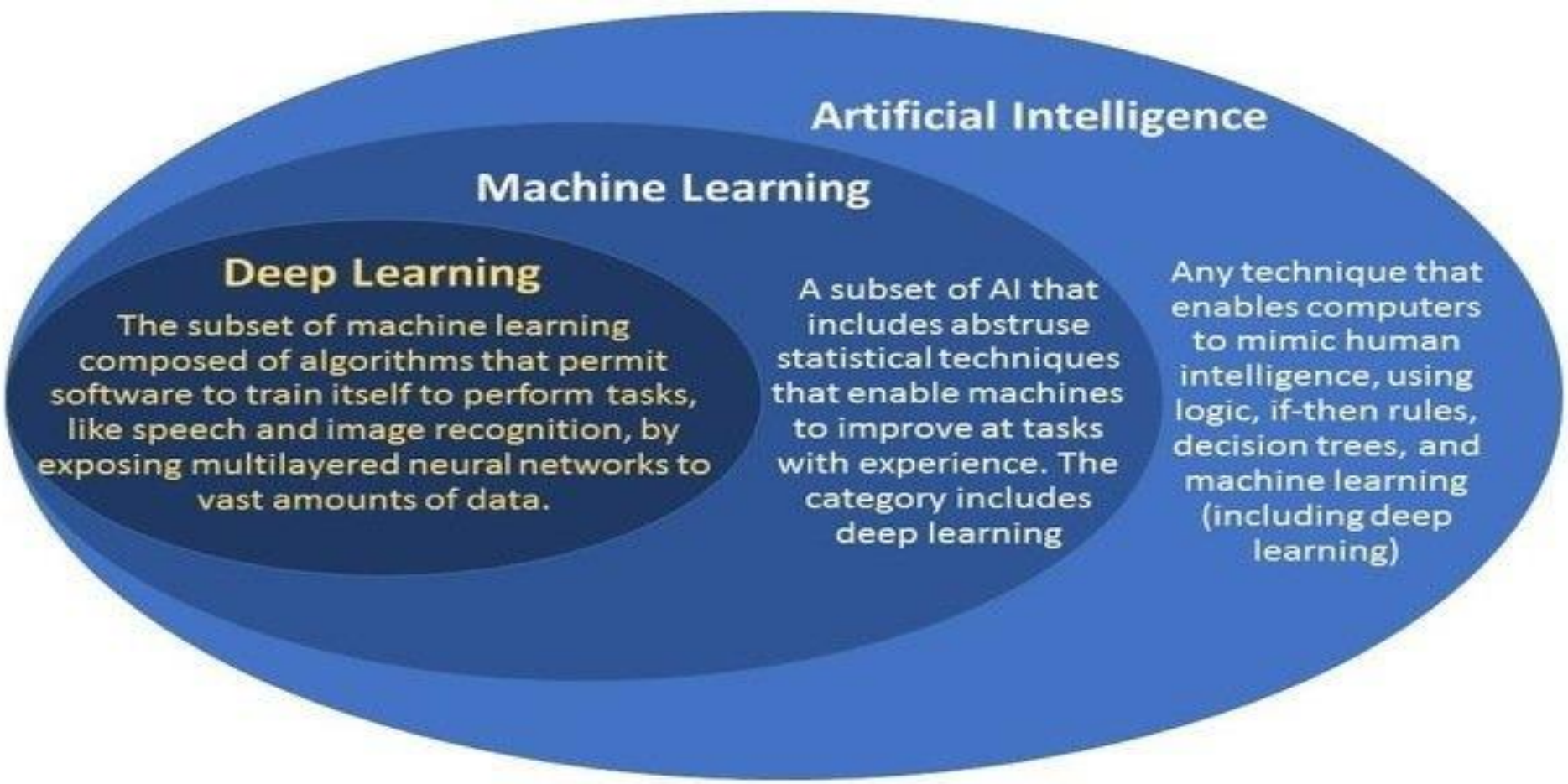
What is Artificial Intelligence ?

- In computer science, **artificial intelligence** (**AI**), sometimes called **machine intelligence**, is intelligence demonstrated by machines, in contrast to the **natural intelligence** displayed by humans. Colloquially, the term "artificial intelligence" is often used to describe machines (or computers) that mimic "cognitive" functions that humans associate with the human mind, such as "learning" and "problem solving"

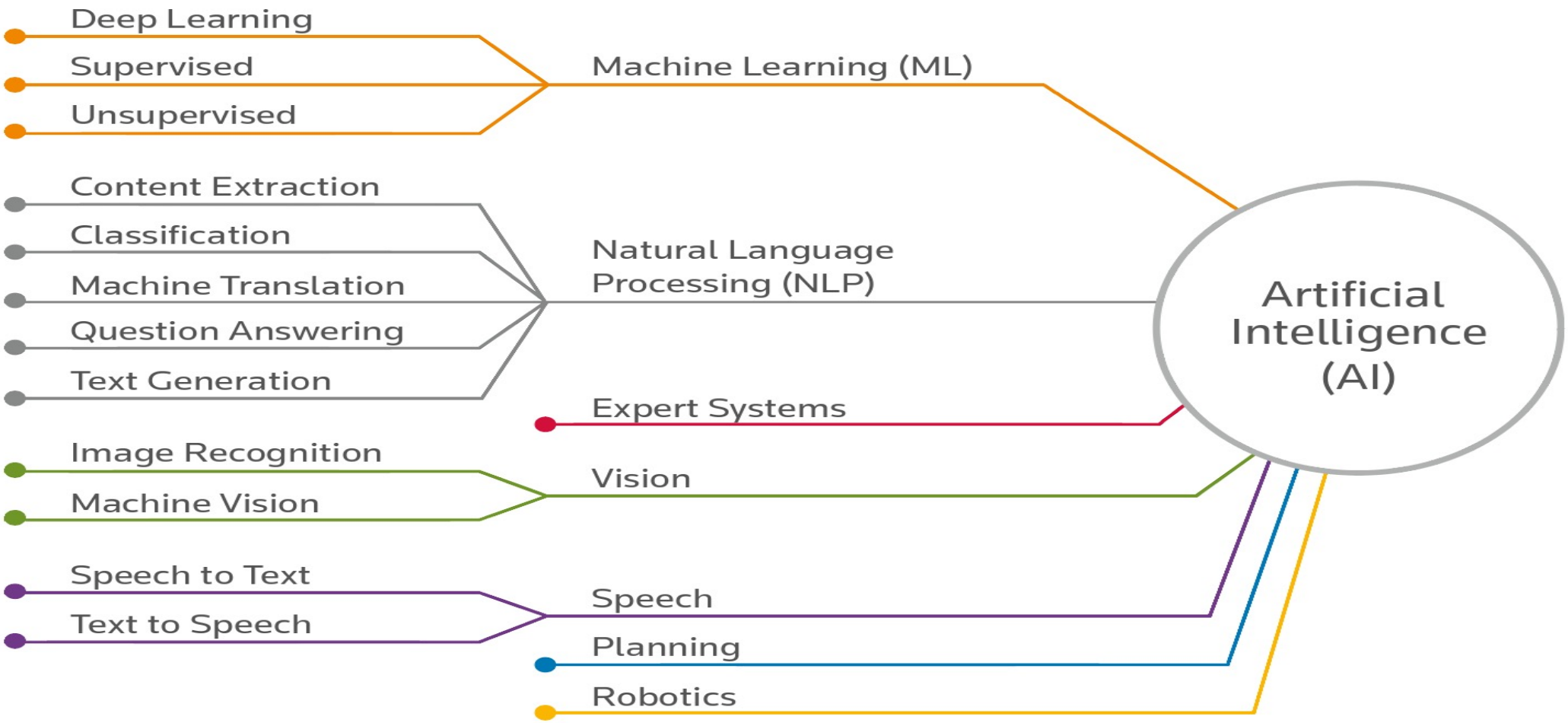
What is Cognitive Computing ?

- **Cognitive -**
- **Relating to or involving the processes of thinking and reasoning**
- **Cognitive computing** (**CC**) describes technology platforms that, broadly speaking, are based on the scientific disciplines of artificial intelligence and signal processing. These platforms encompass machine learning, reasoning, natural language processing, speech recognition and vision (object recognition), human–computer interaction, dialog and narrative generation, among other technologies

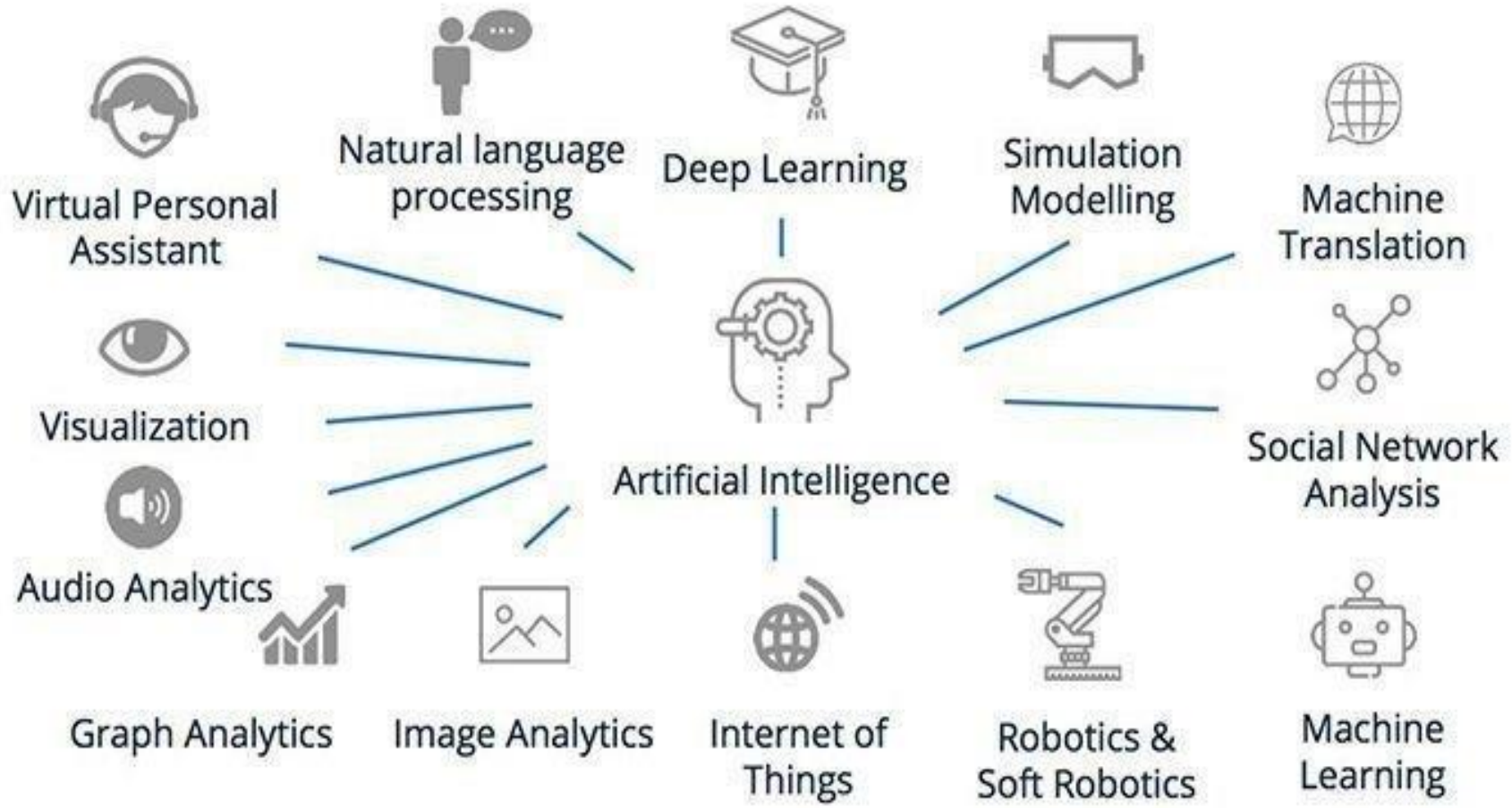
What is AI/ML/DL ?



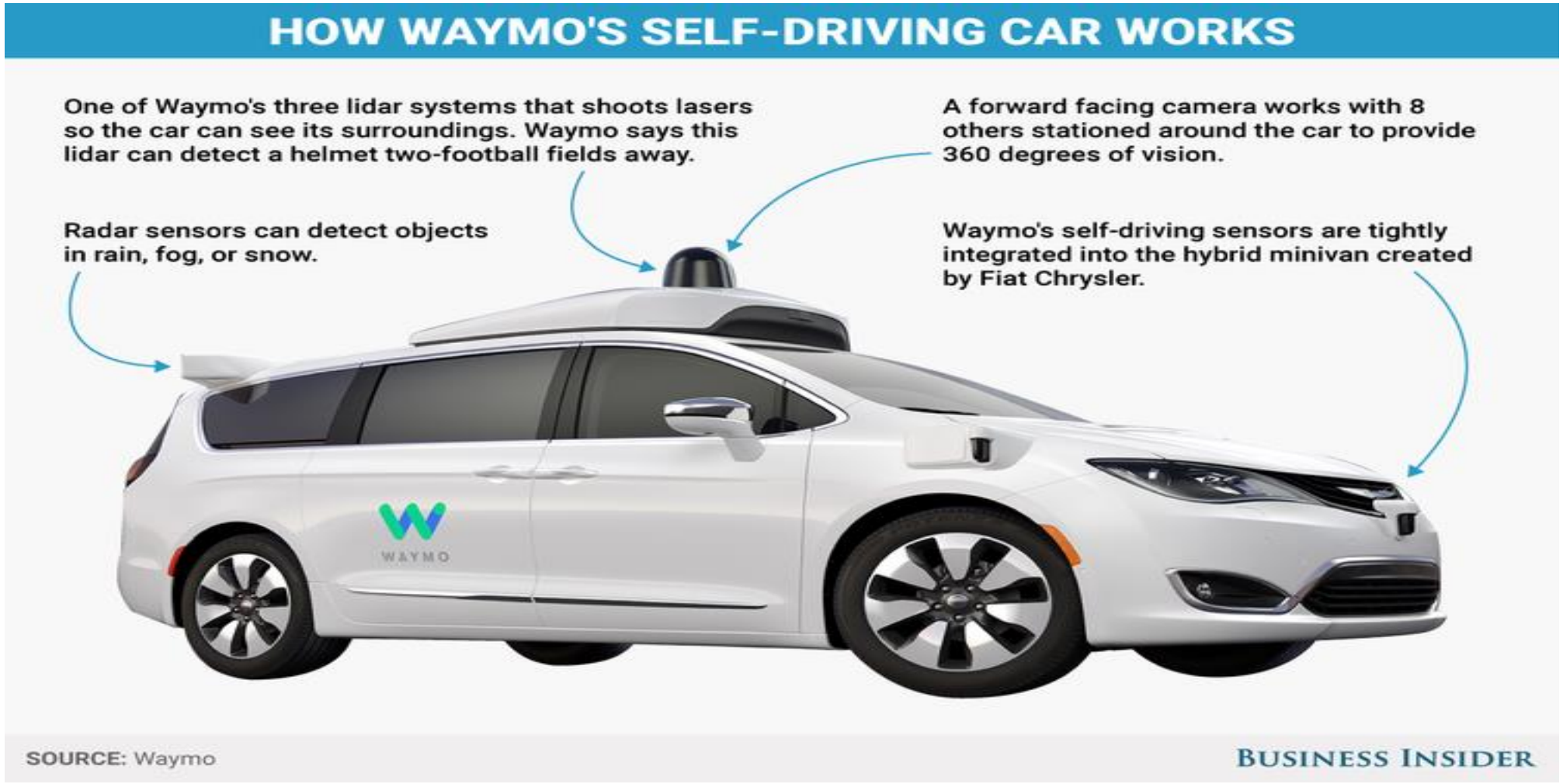
What is Artificial Intelligence ?



Possible applications for Artificial Intelligence



Google’s AI Products



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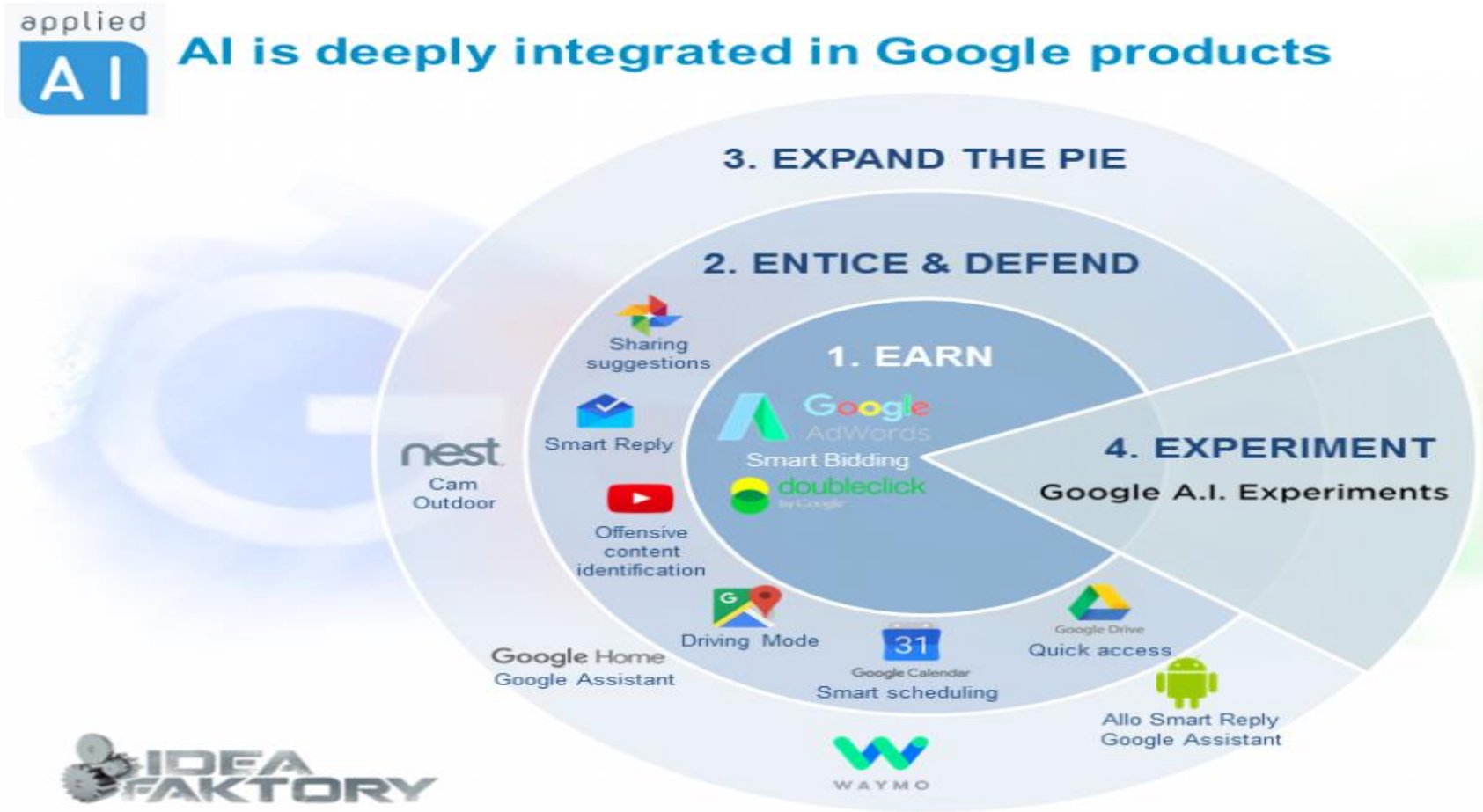
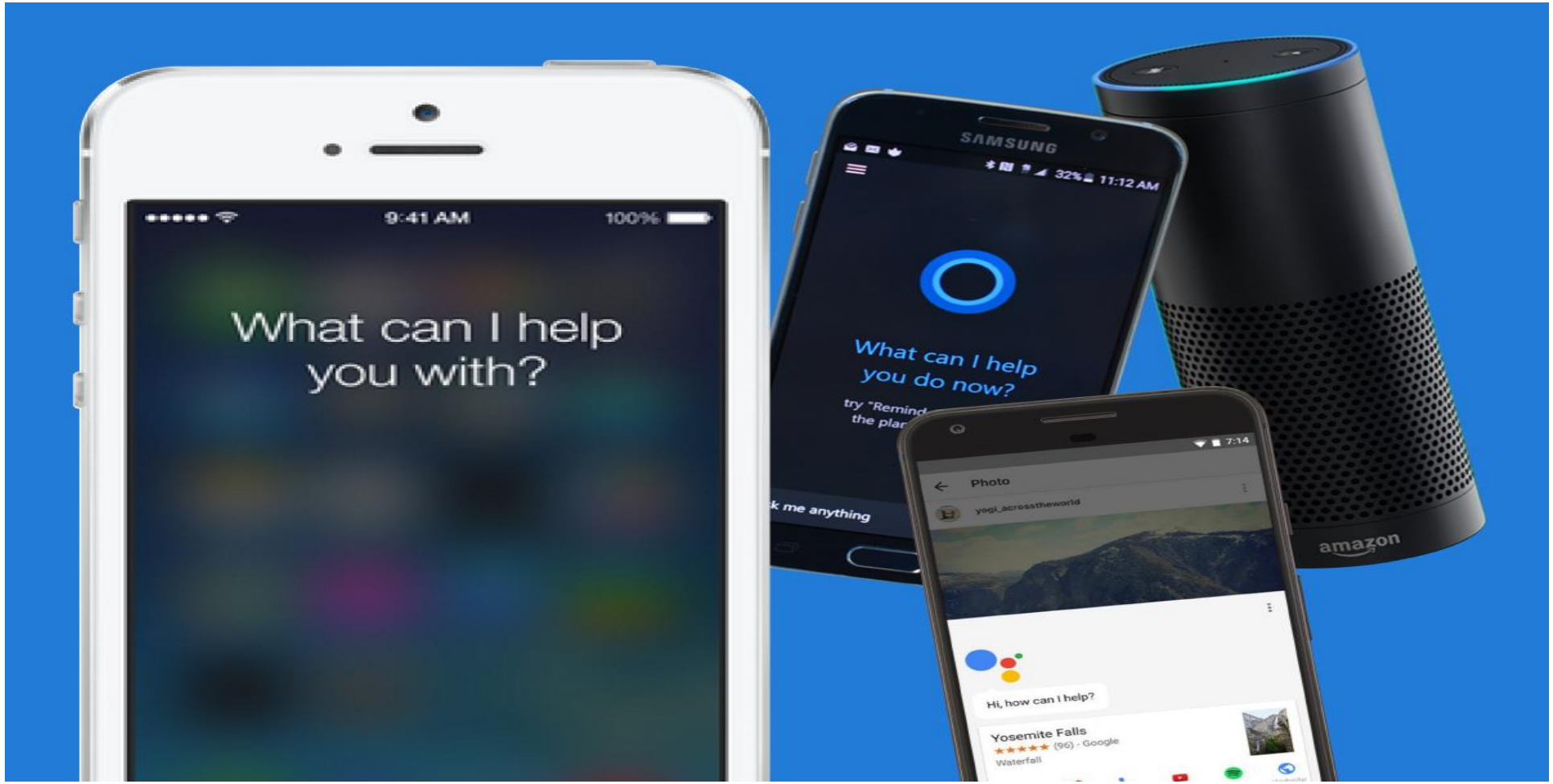
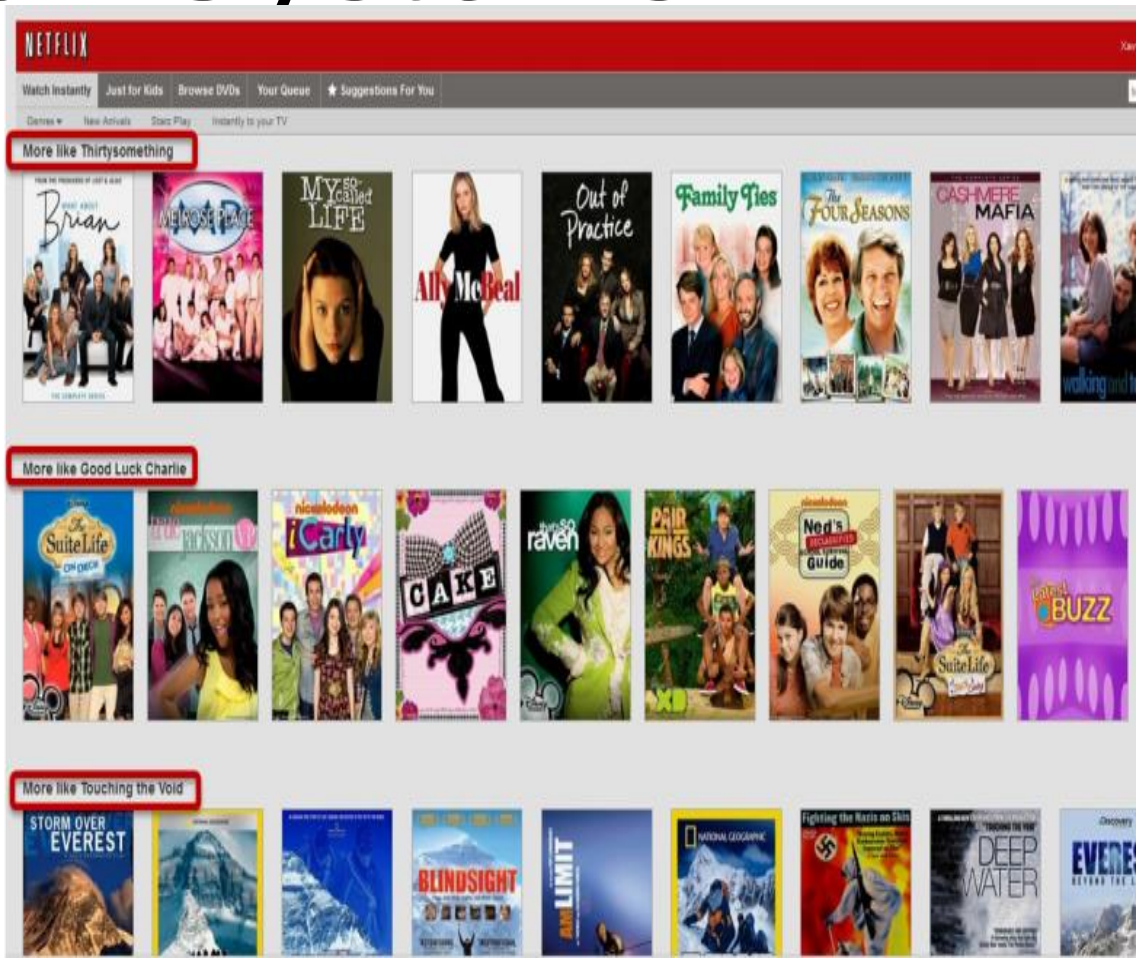


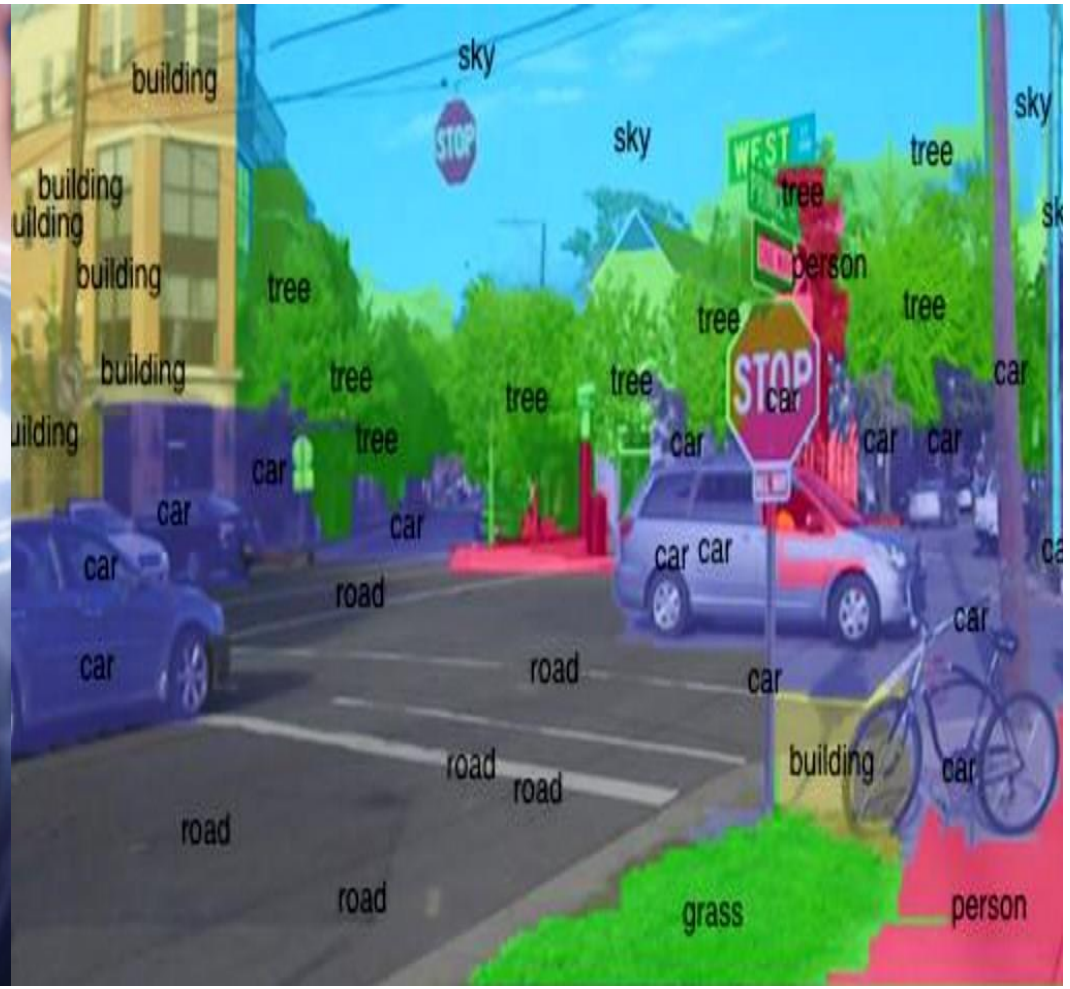
Personal Assistants



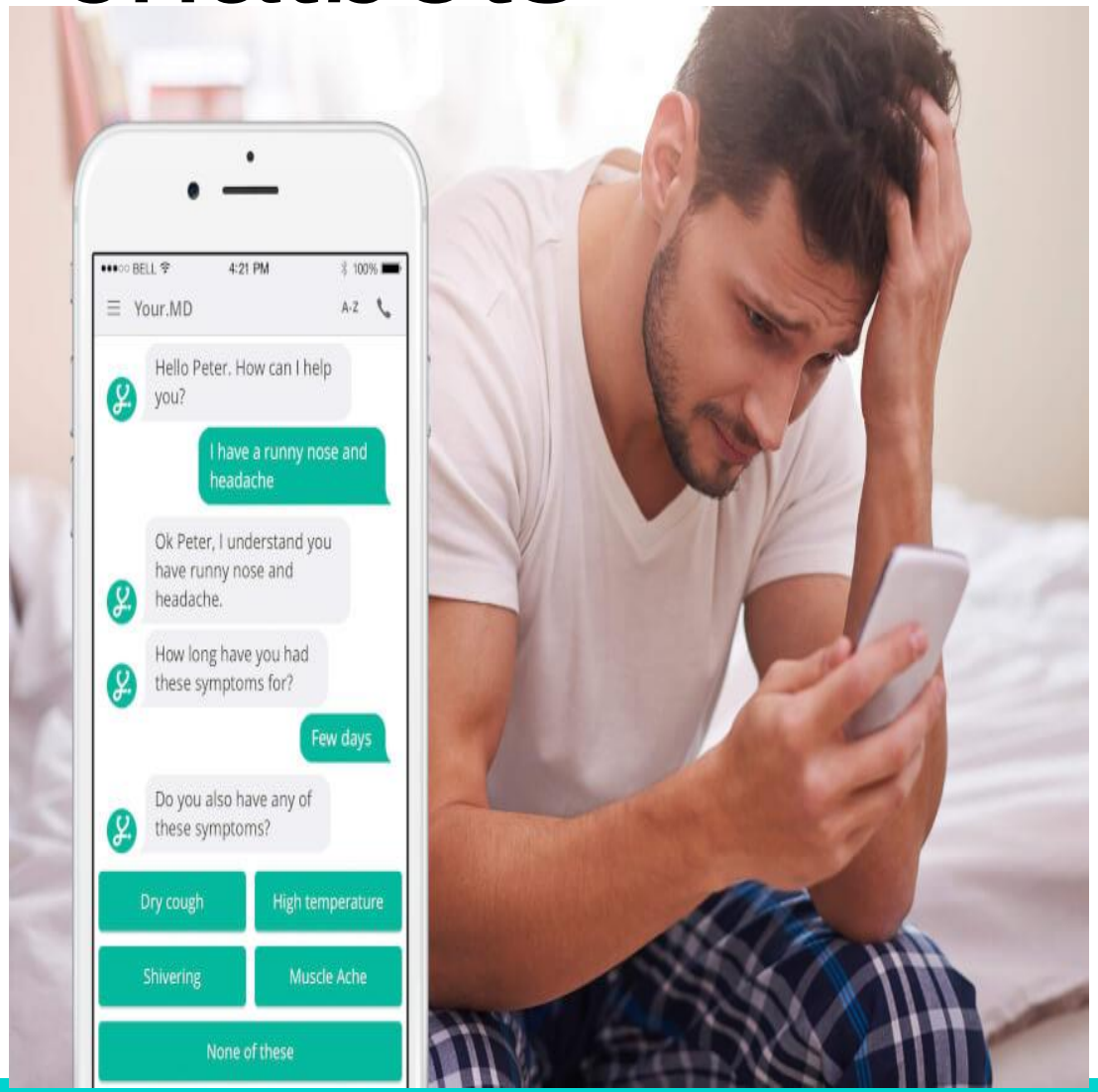
Recommendation Systems



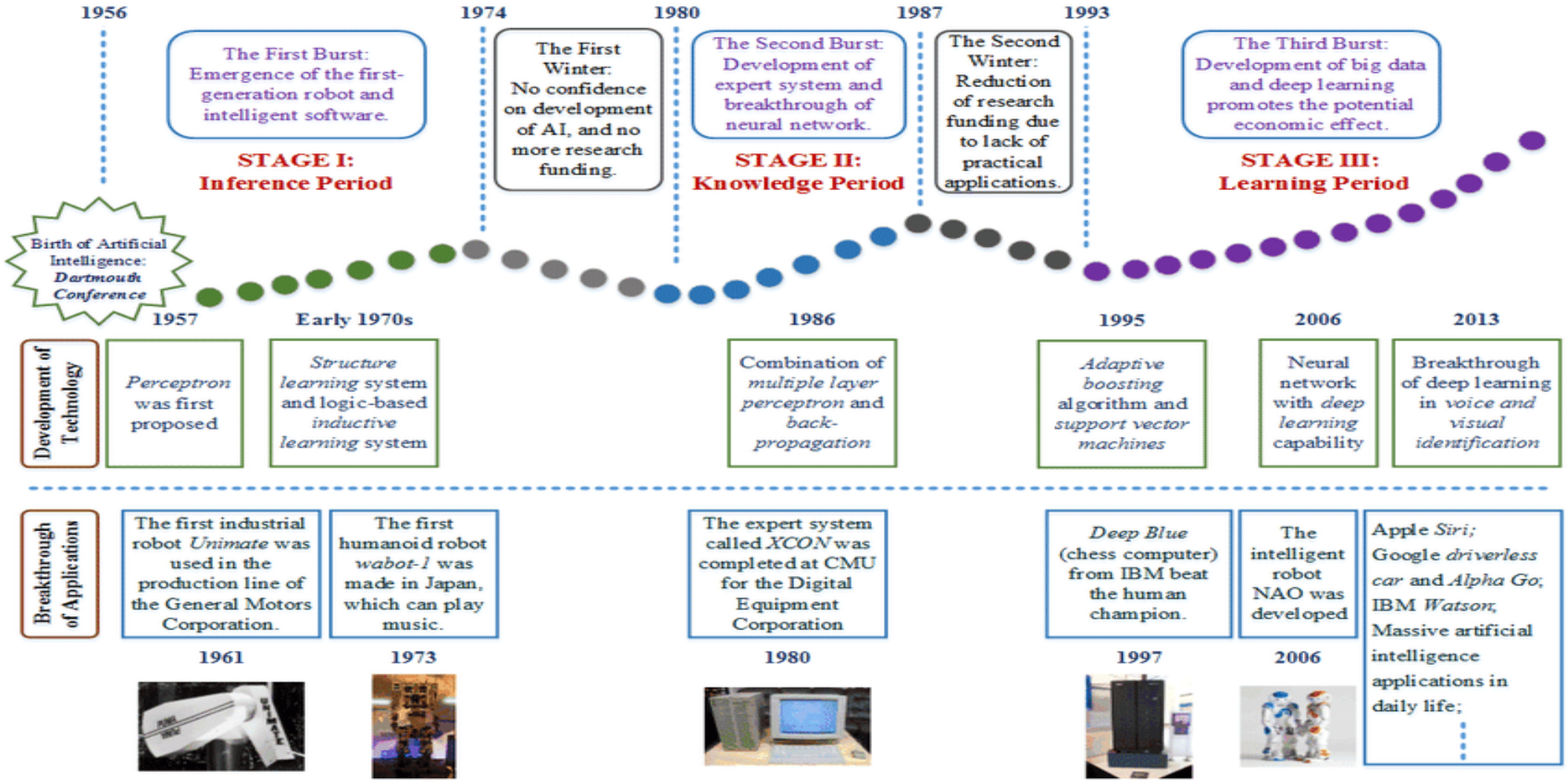
Face/Object detection



AI – Healthcare chatbots



AI – History


1956
1974
1980
1987
1993
The First Burst: Emergence of the first-generation robot and intelligent software.
STAGE I: Inference Period
The First Winter: No confidence on development of AI, and no more research funding.
The Second Burst: Development of expert system and breakthrough of neural network.
STAGE II: Knowledge Period
The Second Winter: Reduction of research funding due to lack of practical applications.
The Third Burst: Development of big data and deep learning promotes the potential economic effect.
STAGE III: Learning Period
Birth of Artificial Intelligence: Dartmouth Conference
1957
Early 1970s
1986
1995
2006
2013
Development of Technology
Perceptron was first proposed
Structure learning system and logic-based inductive learning system
Combination of multiple layer perceptron and back-propagation
Adaptive boosting algorithm and support vector machines
Neural network with deep learning capability
Breakthrough of deep learning in voice and visual identification
Breakthrough of Applications
The first industrial robot Unimate was used in the production line of the General Motors Corporation.
The first humanoid robot wabot-1 was made in Japan, which can play music.
The expert system called XCON was completed at CMU for the Digital Equipment Corporation
Deep Blue (chess computer) from IBM beat the human champion.
The intelligent robot NAO was developed
Apple Siri; Google driverless car and Alpha Go; IBM Watson; Massive artificial intelligence applications in daily life;
1961
1973
1980
1997
2006

AI in News

SENSOR-BASED ANTI-CRASH DEVICES

KSRTC officials said they have installed sensor-based anti-collision devices in buses running on Hyderabad and Pune routes on a pilot basis. The sensor is connected to the engine control unit (ECU) and sends an alert if a vehicle/obstacle is detected within a 10-20 metre distance. It automatically reduces the speed of the bus and stops it.
KSRTC officials said they have received good response from drivers for the pilot project over the past two months. The system will help buses plying on highways, along dense forests or amid mist or fog. "It will be effective only when buses are plying at a speed of over 50 kmph," an official said.

Photo for representation only

HOW SYSTEM FUNCTIONS

- Cameras installed in cabin are pointed at bus driver
- Detect face and eye movements of driver
- Analyze facial expressions like eye closure, abnormal blink frequency, head jerk and yawn to estimate driver's attention level
- System raises warning if attention level of a driver falls below a certain threshold or in case driver is not looking straight
- Driver's seat vibrates and an alarm wakes him/her up
- Driver will have to turn off alarm to ensure he/she is awake

EXCELLENCE AWARD FOR CORPORATION

KSRTC has bagged the runner-up position in the International Road Transport Union Bus Excellence Award. It's city-services initiative has won the award, which was presented to S R Umashankar, managing director (KSRTC), by Yadhuvir Singh Mallik, secretary, ministry of road transport and highways. KSRTC is the first state road transport undertaking in the country which has introduced city bus services in tier-II and III cities and towns.

TECH SAVIOUR: Parthasarathy, a retired civil engineer, logged into his home's CCTV feed and found two men ransacking the house

ACTION IN THE DEAD OF NIGHT

3.30am | Parthasarathy, staying in the US, gets alert on his cellphone and cautions his neighbours in Bengaluru

3.33am | One of the neighbours alerts police

3.40am to 3.43am | Two Hoysalas arrive at the spot

3.50am | Dilip spots police team from terrace

4am | Dilip manages to dodge police and neighbours; escapes

4.30am | They nab Rajkumar, who was hiding under a chair

AI in News – Amazon Go and Tesla

AI in News – Google Lens

Scope of AI-ML in BFSI

Customer Engagement

- Consistent and faster customer-engagement by quickly addressing the basic inquiries with the ability to understand natural language.

AML Pattern Detection

- Anti Money laundry application is programmed with a set of rules, process and laws and regulation which help the financial organization to detect income from an illegal source.

Chatbots

- Chat Bots will automate the chat support system by identifying the query and responding with the most appropriate reply.

Scope of AI-ML in BFSI

Investment Predictions

Allows the traders to have an order placed on a predetermined price and also allows to exist on predetermined selling price which saves the traders from unbearable loss as it sells the stock automatically when the price drop down from the certain limit.

Fraud Preventions

Machine learning has the ability to compare each transaction against the account history and any such unusual activity like out of state purchase, large cash withdrawal etc. raise the red flag which delays the transaction until user confirmation.

Scope of AI-ML in BFSI

Scope of AI-ML in BFSI

Realtime Analytics

- Data was processed in batch in traditional analytics, i.e, using the historical data not the real-time data.
- With the rise of new technologies, it is now possible to access data with minimal latency
- By applying AIML in BFIS, institutions are able to track transactions, credit scores and other financial attributes without any issue of latency.

Thank You