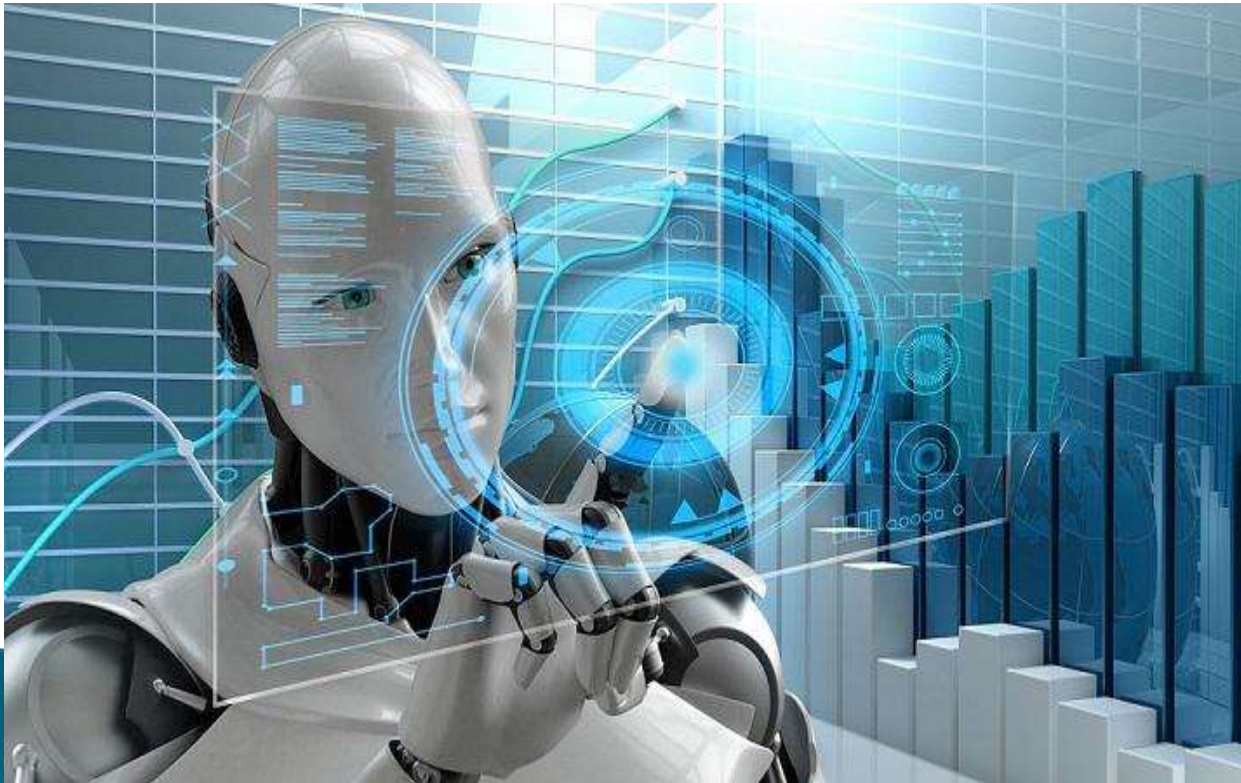
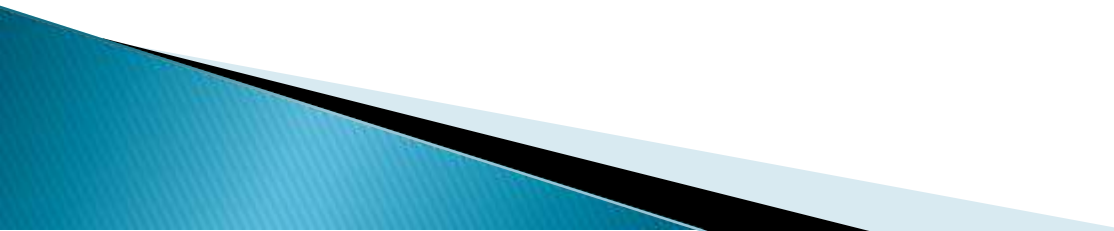


# ARTIFICIAL INTELLIGENCE



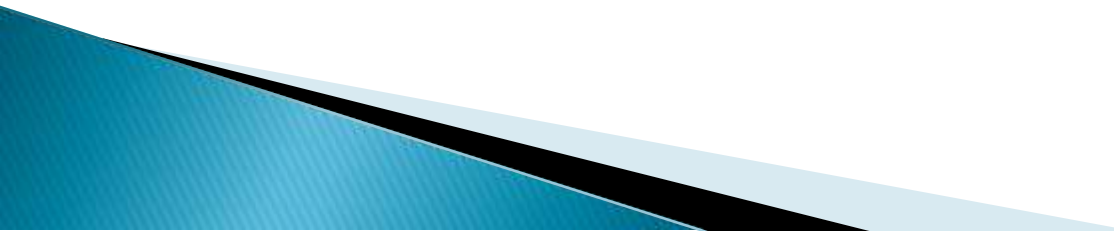
By  
GIRISH  
SUJI  
KEERTHIVASAN

# TOPICS TO BE COVERED

- ▶ INTRODUCTION TO ARTIFICIAL INTELLIGENCE
  - ▶ PYTHON BASICS
  - ▶ ARTIFICIAL INTELLIGENCE
  - ▶ MACHINE LEARNING
  - ▶ DEEP LEARNING
  - ▶ COMPUTER VISION
  - ▶ NATURAL LANGUAGE PROCESSING
- 

# TODAY'S TOPIC

## ▶ INTRODUCTION ARTIFICIAL INTELLIGENCE

1. WHAT IS AI ?
  2. WHY AI ?
  3. HOW AI?
  4. REAL TIME APPLICATION IN SCHOOL
  5. APPLICATION OF AI
  6. ADVANTAGES OF AI
  7. DISADVANTAGES OF AI
- 

# WHAT IS AI ?

- ▶ Intelligence demonstrated by the Machines in contrast to Natural Intelligence delivered by Humans
- ▶ Intelligence is given by feeding the experience of human to machines in the form of data

“AI WILL BE THE BEST OR WORST THING EVER FOR HUMANITY.”–Elon Musk



# WHY AI ?

- ▶ AI automates repetitive learning and discovery through data
- ▶ AI adds intelligence
- ▶ AI analyzes more and deeper data
- ▶ AI achieves incredible accuracy
- ▶ 24x7
- ▶ Reduces Man power

“Success in creating AI would be the biggest event in human history. Unfortunately, it might also be the last, unless we learn how to avoid the risks.”– Stephen Hawking

# HOW AI ?

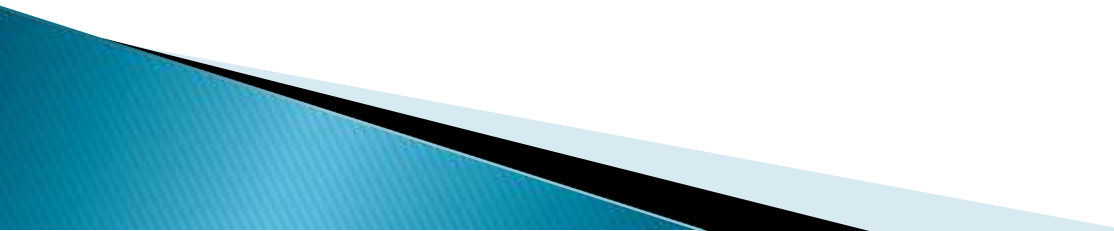
- ▶ See & Recognize: Computer Vision & Deep learning Eye – Camera
- ▶ Analyze & Learn: Machine Learning Sensing organs – Sensors
- ▶ Listen & Speak: Natural Language Processing  
Ear & Mouth – Mic & Speaker
- ▶ It also has many application in day today life



# REAL TIME APPLICATION IN SCHOOL



# APPLICATIONS

- ▶ AI IN MEDICALS
  - ▶ AI IN AGRICULTURE
  - ▶ AI IN VOICE ASSISTANCE
  - ▶ AI in Autonomous Vehicle
  - ▶ AI in Search Engine.
  - ▶ AI in Social Media & Other
- 



# AI IN MEDICALS



## AI Doctor

It is kind of machine analyses the symptoms and cause and suggesting the Medicine for the patient. Those knowledge is fed by tons of Medical data, based on the applications.



## Physical Applications for handicap

With the help of Bio sensors like EMG & EEG sensors, handicaps movement is analysed and trained to move the robotic Arm/Leg even don't have those



## Prediction of Disease from Medical Image

It is the application uses medical images, to classify the diseased and healthy like Diabetic Retinopathy



## Voice recognition for ALS Patient

ALS (amyotrophic lateral sclerosis) is a kind of disease which causes speech problems, the voice of the patients completely non understandable. AI helps to train the voice of ALP patients to deliver voice based assistance for them.

# AI IN AGRICULTURE

AI applications to analyse the weather, and forecasting the weather to give the vegetation suggestion based on crops in a field. Which decreases spoiling the crops due to natural disaster

This AI application is to monitor the crops 24x7 to detect the disease using image processing and to spray the suitable pesticide

After cultivation, Fruits and Vegetables needed to be segregated based on the quality like Rotten or Healthy. AI application will done this with great accuracy

It is little weird !!!, There is a possibility of predicting once countries vegetation by using satellite image. Prediction on Type, Quality and Quantity of specific country.



# AI IN VOICE ASSISTANCE

Google assistance / Alexa / Siri / ChatBot  
Google Home, Amazon Echo, Hike Natasha

## Reply

This is the part which has high computation uses AI to understand the meaning of sentence and form the sentence to reply back.

## Recognition - word

From the signal, AI helps to identify the each word.

## Speak

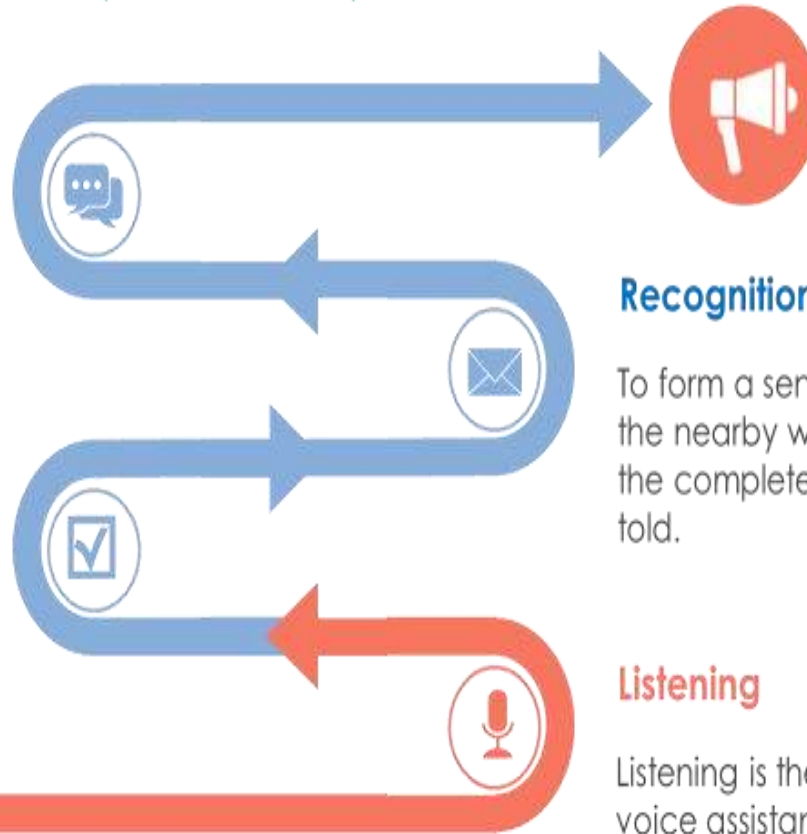
Sentence is converted to Audio signal

## Recognition - Sentence

To form a sentence, AI analyses the nearby word signal to identify the complete sentence what user told.

## Listening

Listening is the first process in voice assistance, which the voice nothing but a signal.

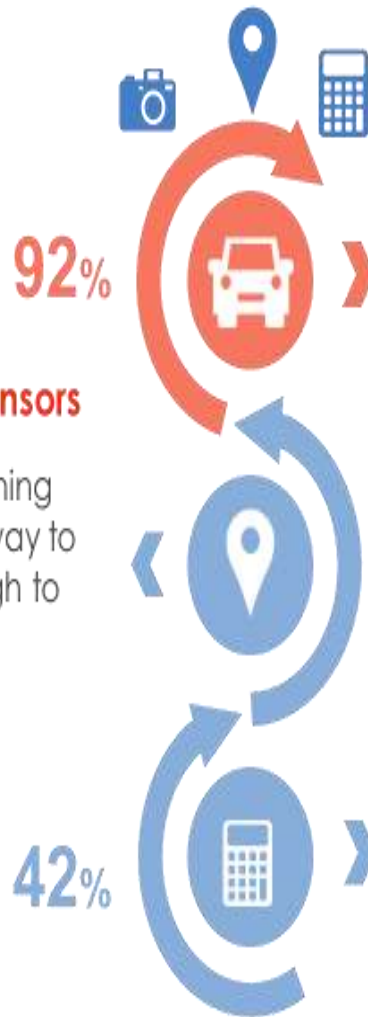


# AI in Autonomous Vehicle



## Autonomous vehicle with GPS & Sensors

In a vehicle, sensors and Global positioning system allows vehicle to navigate the way to reach destination. But still it is not enough to drive the car on road autonomous.



## AI with Sensor Fusion

### Vehicle with LIDAR, RADAR, Camera and other Sensors

Current Autonomous vehicle uses sensor fusion, by applying AI application on camera, 3D LIDAR, RADAR, GPS etc. So that chance of colliding is reduced and Smooth driving is achieved by autonomous decision.

## AI on Autonomous Vehicle with only sensors

In a Autonomous vehicle, only with sensors chances of colliding is high. Even accuracy is good, it is not enough to have Autonomous car in real-time.

# AI in Search Engine.



01

## Google Suggestion

AI is used to predict and suggest the result based on the search history.

02

## SEO- Search Engine Optimisation

AI helps to analyse the content of the website to show in priority

03

## Result

AI helps to understand the need from the search, and filter out related result in short time.

04

## Web Ads

AI analyses every users to identify their interest, so that related ad's are delivered right users.

# AI in Social Media & Other

## Music – Composing | Recommendation

In **composing**, AI is used to identify the pattern of every musician to compose music for certain situation in the style of certain composer or by itself. AI in **recommendation** used in Spotify kind of application to recommend the type of song based on users

## E-Commerce

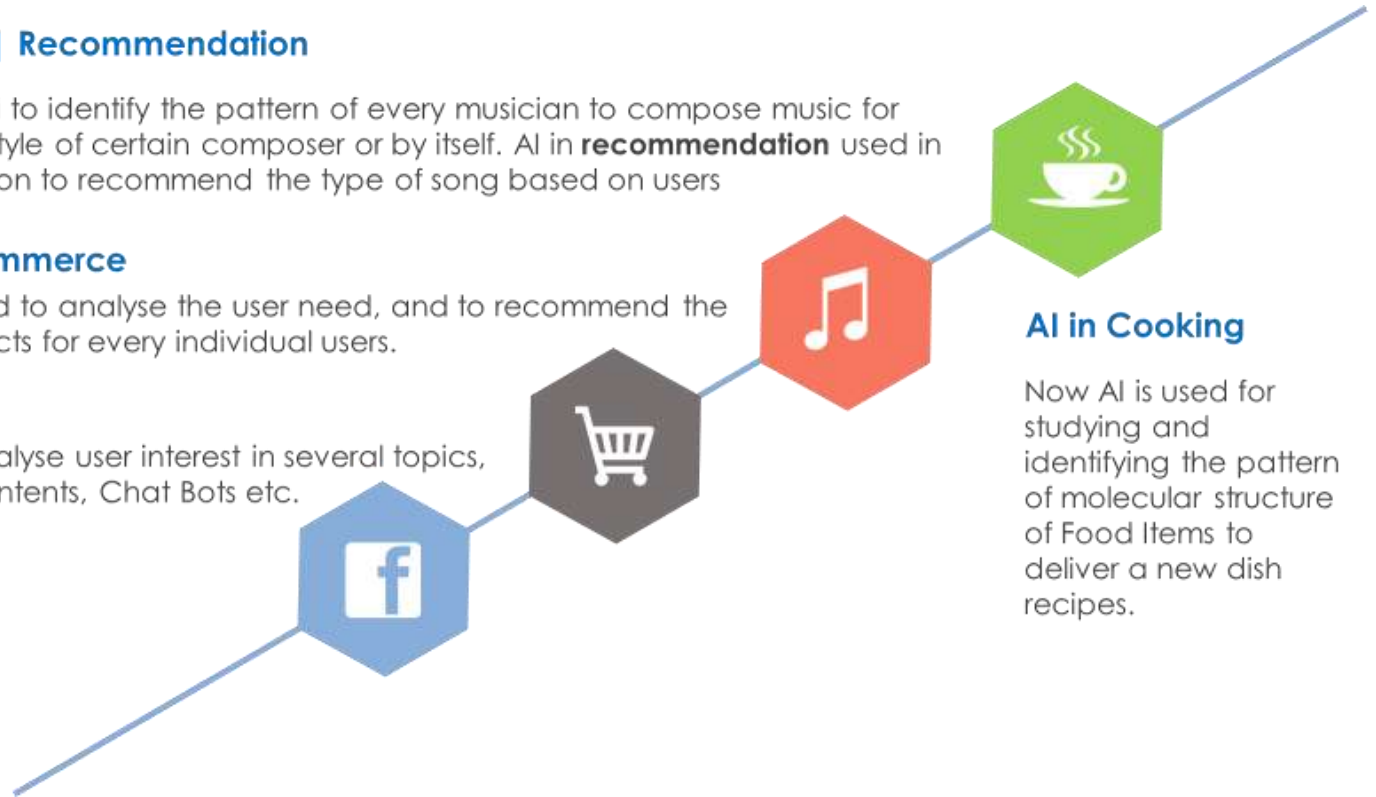
AI used to analyse the user need, and to recommend the products for every individual users.

## Social Media

AI is used to analyse user interest in several topics, Finding bad contents, Chat Bots etc.

## AI in Cooking

Now AI is used for studying and identifying the pattern of molecular structure of Food Items to deliver a new dish recipes.





*“Hey Siri”*



2011

*“Hey Cortana”*



2014

*“Alexa”*



2014

*“OK Google”*



2016

*“Hi Bixby”*



2017

# ADVANTAGE OF AI

## ➤ Reduction in Human Error

One of the biggest advantages of Artificial Intelligence is that it can significantly reduce errors and increase accuracy and precision. The decisions taken by AI in every step is decided by information previously gathered and a certain set of algorithms. When programmed properly, these errors can be reduced to null.

Example:

An example of the reduction in human error through AI is the use of robotic surgery systems, which can perform complex procedures with precision and accuracy, reducing the risk of human error and improving patient safety in healthcare.

## ➤ Zero Risks

Another big advantage of AI is that humans can overcome many risks by letting AI robots do them for us. Whether it be defusing a bomb, going to space, exploring the deepest parts of oceans, machines with metal bodies are resistant in nature and can survive unfriendly atmospheres. Moreover, they can provide accurate work with greater responsibility and not wear out easily.

Example:

One example of zero risks is a fully automated production line in a manufacturing facility. Robots perform all tasks, eliminating the risk of human error and injury in hazardous environments.



### ➤ 24x7 Availability

There are many studies that show humans are productive only about 3 to 4 hours in a day. Humans also need breaks and time offs to balance their work life and personal life. But AI can work endlessly without breaks. They think much faster than humans and perform multiple tasks at a time with accurate results. They can even handle tedious repetitive jobs easily with the help of AI algorithms.

Example:

An example of this is online customer support chatbots, which can provide instant assistance to customers anytime, anywhere. Using AI and natural language processing, chatbots can answer common questions, resolve issues, and escalate complex problems to human agents, ensuring seamless customer service around the clock.




# DISADVANTAGES OF AI

## ➤ High Costs

The ability to create a machine that can simulate human intelligence is no small feat. It requires plenty of time and resources and can cost a huge deal of money. AI also needs to operate on the latest hardware and software to stay updated and meet the latest requirements, thus making it quite costly.

## ➤ No Creativity

A big disadvantage of AI is that it cannot learn to think outside the box. AI is capable of learning over time with pre-fed data and past experiences, but cannot be creative in its approach. A classic example is the bot Quill who can write Forbes earning reports. These reports only contain data and facts already provided to the bot. Although it is impressive that a bot can write an article on its own, it lacks the human touch present in other Forbes articles.



### ➤ . Unemployment

One application of artificial intelligence is a robot, which is displacing occupations and increasing unemployment (in a few cases). Therefore, some claim that there is always a chance of unemployment as a result of chatbots and robots replacing humans.

For instance, robots are frequently utilized to replace human resources in manufacturing businesses in some more technologically advanced nations like Japan. This is not always the case, though, as it creates additional opportunities for humans to work while also replacing humans in order to increase efficiency.

### ➤ Make Humans Lazy

AI applications automate the majority of tedious and repetitive tasks. Since we do not have to memorize things or solve puzzles to get the job done, we tend to use our brains less and less. This addiction to AI can cause problems to future generations.

