ARTIFICIAL INTELLIGENCE

Introduction to Artificial Intelligence (AI):UNIT-1

Topic	Learning Outcomes
Excite	- To identify and appreciate Artificial Intelligence anddescribe its applications in daily life. - To relate, apply and reflect on the Human-MachineInteractions. - To identify and interact with the three domains of AI: Data, Computer Vision and Natural Language Processing. - To undergo an assessment for analyzing progress towardsacquired AI-Readiness skills. - To imagine, examine and reflect on the skills required for futuristic job opportunities.
Relate	- Application of Artificial Intelligence in their daily lives. - To unleash their imagination towards smart homes andbuild an interactive story around it. - To relate, apply and reflect on the Human-Machine Interactions
Purpose	To understand the impact of Artificial Intelligence on Sustainable Development Goals to develop responsible citizenship.

Possibilities	- To research and develop awareness of skills required forjobs of the future. - To imagine, examine and reflect on the skills required forthe futuristic opportunities. - To develop effective communication and collaborative work skills.
AI Ethics	- To understand and reflect on the ethical issues around AI. - To gain awareness around AI bias and AI access. - To let the students analyse the advantages anddisadvantages of Artificial Intelligence

Excite Artificial Intelligence begins with the understanding of the meaning of these words: Artificial and Intelligence

Artificial Intelligence is made up of two words. As you know, **Artificial** refers to something which is made or produced by human beings rather than occurring naturally, especially as a copy of something natural.

Intelligence refers to the ability to acquire and apply knowledge and skills.

EX: smartphones, smart televisions, smart calendars, smart cards etc. These appliances basically works on technology which is a part of Artificial Intelligence.

Meanwhile, in the new technological world, you hear words something like big data, machine learning, neural networks, etc. These all words are directly or indirectly connected to Artificial Intelligence.

Who coined the word Artificial Intelligence?

John McCarthy is one of the "founding fathers" of **artificial intelligence**, together with Alan Turing, Marvin Minsky, Allen Newell, and Herbert A. Simon in 1955.

Definition of AI

AI can be defined as the ability of computer systems i.e. hardware and software, to do tasks that normally required human beings to use intelligence.

According to various organizations

Artificial Intelligence is defined by different organizations in a different manners.

Niti Ayog: National Strategy for Artificial Intelligence

AI refers to the ability of machines to perform cognitive tasks like thinking, perceiving, learning, problem-solving, and decision making. Initially conceived as a technology that could mimic human intelligence, AI has evolved in ways that far exceed its original conception. With incredible advances made in data collection, processing, and computation power, intelligent systems can now be deployed to take over a variety of tasks, enable connectivity, and enhance productivity.

World Economic Forum

Artificial intelligence (AI) is the software engine that drives the Fourth Industrial Revolution. Its impact can already be seen in homes, businesses, and political processes.

In its embodied form of robots, it will soon be driving cars, stocking warehouses, and caring for the young and elderly. It holds the promise of solving some of the most pressing issues facing society but also presents challenges such as inscrutable "black box" algorithms, unethical use of data, and potential job displacement.

As rapid advances in machine learning (ML) increase the scope and scale of AI's deployment across all aspects of daily life, and as the technology itself can learn and change on its own, multi-stakeholder collaboration is required to optimize accountability, transparency, privacy, and impartiality to create trust.

European Artificial Intelligence (AI) leadership, the path for an integrated vision

AI is not a well-defined technology and no universally agreed definition exists. It is rather a cover term for techniques associated with data analysis and pattern recognition. AI is not a new technology, having existed since the 1950s.

While some markets, sectors and individual businesses are more advanced than others, AI is still at a relatively early stage of development, so that the range of potential applications, and the quality of most existing applications, have ample margins left for further development and improvement.

Applications of AI in our daily life

Smartphones: The smartphone has many applications that running and provided services with the help of AI. Ex. Google Assistant, Alexa, Apple Siri, etc.

Social Media:

❖ Social media websites like Twitter, Facebook, Instagram, or Snapchat sending notification and managing timelines by AI.

❖ AI takes all your past behavior, web searches, interactions, and everything else that you do when you are on these websites and tailors the experience just for you.

Music and Media streaming:

❖ Apps like Spotify, NetFlix, or Youtube AI is making a decision for the users.

❖ AI records playlist history and generating some recommendations for watching or playing songs.

Video Games

❖ Video games companies are most earlier adopters of AI. AI generate random levels in video games.

❖ In many games, AI defeated world champions. PUBG, Dota 2, Fortnite all are AI integrated games.

Smart Home

❖ Many smart home devices use AI to learn the behavior of the members of the family and can adjust settings accordingly.

❖ Smart voice assistants playing a vital role in smart homes.

❖ Smart thermostats used to adjust the temperature based on the user's preferences.

❖ Smart lights change the color and intensity of lights based on time and much more.

Security and Surveillance

- Thousands of cameras keep monitoring at the same time by AI only.

- Object recognition and face recognition getting better and better day by day.

Smart Keyboard and Apps

- Smart Keyboards provide comfort for users while typing on the screen.
- It generates suggestions based on the writing style of users.

- It also displays a few words and emojis.

Healthcare

- With an introduction to AI-powered machines detection of disease and treatment becomes a bit easier and convenient.

- AI-powered machines make the process of treatment and management simplified research to cure some disease done by AI- based systems.

More applications of AI

E-Commerce

➢ Online shopping on Amazon and eBay like websites using chatbots to collect data of customers and building a good rapport with buyers.

Smart Email

➢ Modern email apps like spark provides the facility to get rid of spam email and unwanted emails.

➢ It also categorizes email, so users can quickly read the important ones.

➢ The smart reply concept also giving a few suggestions with a reply text like in Gmail.

Smart Cars

➢ Tesla is a prime example of AI is impacting in our daily life.

Smart Drones

➢ Companies like Amazon and Walmart are heavily investing in drone delivery programs and it will become a reality far sooner than what you expect.

Banking and Finance

➢ The banking and finance industry relies on AI for providing customer services, protection against fraud, investment suggestions, and so on.

➢ While using the chat service of banks the chat is represented by Bots only. In the finance industry, AI is used to analyze data.

Online Ads Network

➢ AI just not tracking records of users but also serve the ads based on statistics.
➢ With the help of AI Ads network displaying random Ads online.

Navigation and Travel

➢ While traveling or enjoying rides like ola, uber, or any other services, google map navigation help to find a perfect route for the journey.
➢ Moreover, AI can give you real-time traffic data.

History of AI

The continuous development in IT sector leads many revolutions in recent decades. Many tools are available in personalized manner in our hands such as smart phone, smart cards, smart vehicles, smart homes etc.

Machines are developed rapidly to understand and work with human intelligence. As of now you may have seen that YouTube is showing videos according to your recent searches, Amazon is displaying brands of your choices, google assistant, Alexa and many more devices are result of these revolutions.

Between 1940s and 1950s many scientists were encouraged to think of intelligent machines. They thought about those machines capable to perform the task which needs human intelligence.

In 1956 at Dartmouth conference (was considered as 'brainstorming session'), Sir John McCarthy an American Computer Scientist coined the work Artificial Intelligence for the first time.

Artificial Intelligence is concern with development of machines those are capable to perform the tasks which needs human intelligence.So this means that the involvement of artificial devices to capture the idea of human intelligence. Some of the tasks which human performs are very easy, easy, or hard.

ACTIVITY 1: Dream Smart Home

☐ Learners to design a rough layout of floor plan of their dream smart home.

Rough Layout of the floor plan of a dream smart home.
Think about how your dream smart home would look like?
What would be its features and amenities? What kinds of
gadgets and sensors would it have? Imagine looking at the
home from above. How does it look? Draw it.

Game 1: Rock - Paper - Scissors

It is a game of hand movements. Rules are:

1.   Requires two or more players.
2.   Each player simultaneously forms one of the three shapes with an outstretched hand. These shapes have meanings as following:
1.   Flat hand → Paper
2.   Closed fist → Rock
3.   A fist with index finger and middle finger like V → Scissor
3.   This game has only two results: i. Draw or ii. Win
4.   A player who decides too play a rock wins over the one who shows scissors (rock crushes scissors) but lose to one who plays a paper (Paper covers a rock). Scissors win over a paper (as Scissors cut paper). If both player shows same shape, the game is draw.
5.   The players usually count 1,2,3 or speak Rock, Paper, Scissor and swing it in front of another.

https://rockpaperscissors-ai.vercel.app/

Game 2 Mystery Animal

This game is based on Natural Language Processing (NLP). Rules of the game are:
1. A microphone must required to connected to the computer.
2. Ask question to computer that answer must "YES" or "NO".
3. The participant gets a chance to ask 20 questions to decide upon the name of animal.

Game 3 Emoji Scavenger Hunt

This game is based on Computer Vision (CV)
1. A camera is required any a webcam or smartphone camera.
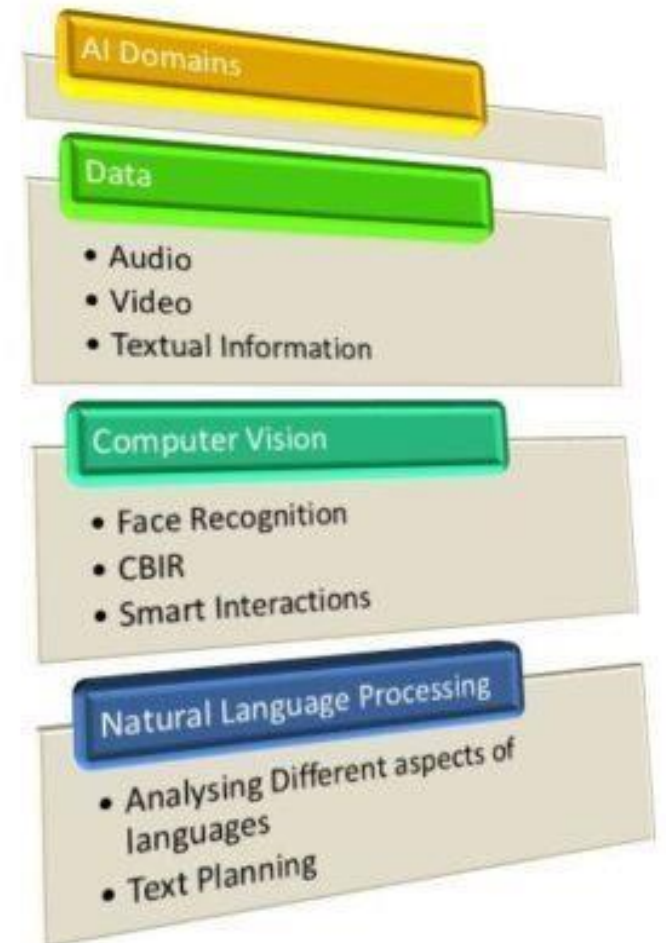2. The player must have access to a few of objects used in everyday lives.

AI Domains

Human-Machines interactions

Human-machine interactions refer to the contact between humans and machines to fulfil a specific task or operation.

In AI human-machine interactions done through the following domains:

1. Data
2. Computer Vision (CV)
3. Natural Language Processing (NLP)

Data

If a person thinks of automate any system or want a report or analysis of customers' feedback, data is required.

For example: Taking student's daily attendance we need data of students like class, roll number, student name, etc.

Data can be the backbone of AI. Almost 98% of AI systems are dependent on data. As system development grows processing of data also increases.

This data can be in any form textual information, audio, video, big data like predictions, insights, forecasts, decision making, etc.

Computer Vision (CV)

It is a field of science that deals with how computers gain a high level of understanding from digital images or videos. It is a flown that studies how the human visual system works.

The computer vision includes the following methods to produce information:

- ✓ Acquiring Images
- ✓ Processing Images
- ✓ Analyzing Images
- ✓ Understanding Images

APPLICATIONS OF CV

❖ Computer Vision is mainly used for Face recognition systems to recognize the faces in images and videos. The application areas like google photos, spam chat, Facebook, Instagram etc.

❖ Content-Based Image Retrieval systems identify images based on image properties like composition, colour, texture etc. The application areas are search engines like google & bing, used in different CT scans and MRIs in hospitals, etc.

❖ Computer Vision also helpful in smart interactions to supply input to computers. It is mainly used in games, systems designed for differently- abled individuals, etc.

❖ Computer vision also helps in Environment Perception such as analyzing videos, images, or video feeds for identifying patterns and perceiving the environment. Application areas are Home security systems, Office security systems, Drone-based surveillance systems etc.

Natural Language Processing (NLP)

The programming languages work on their own principles, syntax, and keywords. The aim of NLP is developing such systems that work on human natural language on oral as well-spoken language.

It has two main components:

Natural Language Understanding (NLU): NLU understands human language and converts it into data. It is used for spoken or written language to provide a link between natural language inputs and what they present. It analyses different aspects of language.

Natural Language Generation (NLG): NLG uses structured data and generates meaningful narratives out of it. It helps to produce meaningful phrases and sentences along with Text planning, Sentence Planning, and Text realization.

NLP=NLU+NLG

Relate Applications of AI in Daily Life

1. Introduction Smart Cities

There is no standard definition is found for a smart city yet. Because it depends on a few factors. These factors are:

1. **Country:** If we talk about countries then there is a huge difference between the two countries in the adaptation and implementation of technology.

2. **City:** Cities of one country have a great difference in term technological development.

3. **Level of development:** The level of development of cities based on their administration, city residents and government.

4. **Willingness to change and reform:** This is also one important factor because technological evolution bring changes in many things. Because technology requires its latest equipment and component to which it is compatible. Some AI systems may not work on a few devices. So first we need to update that one. So change and reform is necessary.

5. **Resources and aspirations of city residents:** A city is made up of resources and aspirations of city residents. A city can be defined by the people living in the city

Smart city refers to the city that use AI along with other digital and ICT based components to make life of inhabitants better and more comfortable.

In smart cities smart homes can connect with each other to provide number benefits. Following are few benefits provided by smart cities:

1. Providing door step services
2. Communicate with each other
3. It has few censors
4. It can provide data and use data to analyze different aspects of citizens

2. Smart Home

The term "smart home technology" refers to any suite of appliances that can be independently and remotely controlled through a common network.

For example, let's assume that the thermostat, audio speakers, lights, security cameras, TV, etc., are connected to a network. As a part of smart home technology, it will be possible for you to control them from a single device – your smartphone.

Advantages Of Having A Smart Home

Benefit – 1: Managing Everything From A Single Location

With a smart home, you can keep up with everything in your house by using a single device. In some cases, you may only need to install a single app to activate your security camera, ACs, TV, and other appliances.

Benefit – 2: Better Energy Efficiency

Considering how you're using your smart home technology, it will also be possible for you to make everything much more energy efficient. For example, with these programs, you will have precise control over the cooling or heating system of your house.

Benefit – 3: Maximize Home Security

Incorporating your surveillance features with a smart home technology can also skyrocket your house's overall security system.

3. Smart Schools

A smart school more than just using advanced technologies for teaching and learning purposes

Advantages Of Having A Smart School

1. Ability to Interact With Anyone Around any Corner of the World
The smart technology allows one to remotely interact with any person through collaborating via virtual learning platforms. Educational institutions can interact with students and manage the huge user base without worrying about communication gaps.

2. Go 'Green' by Replacing Paper with Digital Tools
The dynamic sharing of information and resources cuts down the need for paper, pen, printouts, etc. required for the learning process, and is the most vital advantage of smart school.

3. Improved Productivity and Instant Access to Resources
The visual model of the data shared through intelligent technology provides better engagement. Plenty of resources related to a single topic itself can be stored securely, and the users can have access to every single bit of it.

Smart building data connect to smart cities

Smart building data work on many areas, few of them are as following:

1. **Electricity:** In terms of electricity uses, smart building records the need and use of electricity in homes. They can reduce and save electricity as per the behavior of family members. It can regulate power generations supply by helping power companies.
2. **Maintenance:** The smart building data helps to provide better maintenance services and replacement.
3. **Health:** It can also help to provide data of sick people from the building. Doctors can also provide monitoring to patients at their doorsteps.

Smart citizens

- Smart cities required smart citizens or may converted them into smart. Smart cities help government to attain the sustainable development goals. It can reduce the wastage, save water, work on data of poverty line etc.
- Smart citizens lives life smartly called smart living. Smart living is the next topic of Relate Applications of AI in Daily Life.

Smart Living

- Smart living refers to using AI enabled technologies into daily life. It involves gadgets which are using such sensors and alerts to deal with environmental conditions. Closing and opening the doors, windows etc., Maintaining room temperature etc.
- In such critical situation like fire or gas leak or any other emergencies it can help by generating alerts.
- Smart buildings can also generate danger alerts and warning systems in disasters. It also helps to the government in disaster management.
- It provides information alerts to the people at different level.

Purpose

The impact of AI on Sustainable Development Goal (SDG):

There are <u>17 SDG Goals</u> adopted in the General Assembly in 2015 by the United Nations. It was built upon **"leaving no one behind"** principle.

They were adopted for:

1. Better Environment
2. Better Society
3. Better Economy

The major challenges for the world are to provide clean water, clean air, natural resources, sustainable energy, and education. As we all know that there so many problems we are facing with environments, problems with people like poverty and starvation. So far with the advancement of technological growth, we did not succeed with these problems yet. So Artificial Intelligence can help to solve such problems.

AI societal Impacts

- **No poverty (SDG - 1)**

- **Zero Hunger (SDG - 2)**

- **Good Health and Well Being (SDG - 3):** AI can help in preparing data for people living under the poverty line and help them by providing food, health, water, and energy easily.

- **Quality Education (SDG - 4):** AI systems can be trained for quality education and can provide the solution.

- **Gender Equality (SDG - 5):** AI tools don't recognize gender. In some areas, AI can result in negative impacts also. For example, the AI systems or tools are trained based on the situation and requirements of the country where they developed. If we talk about SDG 5 - Gender Equality, there is inefficient research done. The tools which are available such as voice agents and chatbots like Alexa or Siri gendered as female only. To improve this more research required for smart algorithms, image recognition, reinforced learning, or discrimination.

- **Clean water and Sanitation (SDG - 6):** AI tools can be used for supplying clean water and sanitation to the people.
- **Affordable and Clean Energy (SDG - 7)**: AI can be trained to provide affordable and clean energy but the IA product design should require proper resources and tools.

- **Decent Work and Economic Growth (SDG - 8):** The market heavily relies on data analysis. These data may not available in low and middle-income countries. Hence the work culture may be impacted.

- **Industry Innovation and Infrastructure (SDG - 9):** AI system helps in industry innovation in terms of solving complex problems. It can handle complex operations easily. It can also handle the infrastructural issues with advancement.

- **Reduce Inequalities (SDG - 10)**: By using AI tools inequalities can be reduced as AI tools do not have any emotions. They can produce the results better than other tools. If we take the example of AI used by social media websites to show up the contents of users' interest in his profile. Another example is job creation using AI tools.

- **Sustainable Cities and Communities (SDG - 11):** AI is capable to create smart cities that provide efficient resources to the people.

- **Responsible Consumption and Production (SDG – 12)**
    Ensuring sustainable consumption and production patterns, as a goal, aims to reduce climate change and negative environmental impacts

- **Climate action (SDG - 13):** AI can be useful in generating an alert in climatic situations. It can produce the alerts and warn the concerned department about climate change and leads to act accordingly.

- **Life below water (SDG - 14):** The life below water like animals living under the sea, under the river plays an important role in maintaining temperature and makes the earth suitable for all of us. AI can impact on these by recording their needs and improve the supply chain.

- **Life on Land (SDG - 15):** AI systems can be helpful for life on land as well. It can promote the use of ecosystems through various platforms like social media, search engines, and so on.

- **Peace Justice and Strong institutions (SDG - 16)**: Justice and strong institutions based on the rules formed by the different groups of people. So it is very highly impacted through AI. The tools can be trained for the laws and enforcement according to the need.

- **Partnerships for the goals (SDG - 17)**: AI can help to provide a partnership and support the partner to achieve the goal.

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Skills required for jobs of the future

1. **Communication skills**: This is an essential skill for every job. Communication helps a person in many ways.
2. **Knowledge of Basic Maths and Science**: A person must have good knowledge of basic maths and science principles to understand and work with AI.
3. **Applied mathematics**: Many systems and AI tools using applied mathematics concepts. Some AI research also requires applied mathematics principles.
4. **English speaking and Listening:** As dealing with technology and other concerns the English language will be an added advantage for future high paying jobs.
5. **Techno Savvy**: Techno savvy refers to the knowledge of basic computers and online communication medium which is very essential in today's scenarios too.
6. **Machine Learning**: It essential for future jobs related to AI. A person who deals with AI that also deals with Machine Learning projects.
7. **Data Science**: As you are familiar with the domain of AI, Data is playing a key role in jobs related to AI.
8. **Programming Languages**: Programming languages like python, R, Go, etc. are part of AI tools and technology. So it is also a mandatory part for job seekers.
9. **Data Analysis**: Many big companies have a job role as a Data Analyst who is responsible for data analysis. Data analysis help in taking the right decision.
10. **AI research**: It is advanced skill for job for future development and implementation of AI as well current growth

Possibilities of Artificial Intelligence technology in Health

Infervision

It is developed in China that uses Artificial Intelligence in medical services. It is using deep learning and computer vision. Recently, it was used in China for fighting against COVID-19. In China, it generates about 1.5 billion CT scans per year only for lung cancer. It detects cancer accurately and efficiently and helps radiologists.

DeepMind

DeepMind is created by Google influenced by Neuroscience. It is designed to copy the human brain's behaviour. In past, it defeated many human players in different games. Now Google is expanding this system to the healthcare sector to reduce the time required for planning treatments and diagnose the sickness

Possibilities of Artificial Intelligence technology by Google

Google Fishing watch

This can be used by law agencies to prevent illegal fishing. It is also product of google that uses cloud computing, machine learning and geo-mapping using AI and Satellite to predict the for vessels at sea. It identifies the instances of illegal fishing.

Google Brain

It was started in 2011 and used for image recognition at initial stage. As time goes, now it used for many purposes as following:
1. Image Enhancement
2. Natural Language Processing
3. Youtube video recommendations

Possibilities of AI technology for customer experience

Walmart
It is a mall and retailer like D-mart which is serving through its offline stores as well as online stores. It is using AI technology for improving its customer experience for in-store and online. It uses AI with IoT with Scan and Go, Pick up towers. It is also experimenting with facial recognition technology to measure a customer's mood is happy or sad inside the store.

Hello Barbie
In the market, dolls are available which can talk with human beings. These toys use AI concepts like Language Processing, Machine Learning, and Advanced Analytics. These toys having a microphone that records the voice of the child and selects the dialog from the server and gives the response.

Talking with machines
It is one audio drama created by BBC. It allows listeners to have a conversation with machines and allows listeners to answer the questions. By these questions and add to something to the story. It works with google Echo and Google Home.

Possibilities of AI technology for vehicles

Volvo

Volvo is a car company, use AI for car servicing and replacement of different components. It collects data of vehicles and improve in stressful situations and increasing the driver and passenger experience. It also used these data for research and development.

BMW

30 million raw parts handled by BMW's logistic team daily, shipped from 4500 suppliers around 31 different countries. BMW uses AI to perform some tasks and handle the manufacturing of cars for quality control. In 2019 BMW released on Open Source algorithm so by that software developers can review, edit and improve the source code for quality control. Even AI helps to make some decisions from car manufacturing to sales and sales-servicing. BMW has set target that they will manufacture a self-driving car without any human interventions by 2021.

IBM Watson

IBM Watson facilitates enterprise-based services, apps, and tools for developing and managing products or apps or various corporate services. It is using many services like IBM Cloud, AWS, Azure, Google, or your own private cloud platform. Click here to read more....

John Deer

It provides farm vehicles that use GPS and AI technology named Fram Sight for automatic ploughing and sowing the farms. This company uses AI technology in Agriculture. It checks the availability of pest on the crop and report any pesticides needs to be applied or not.

Possibilities of Artificial Intelligence technology for Media

RADAR (Reporters and Data Robots)
It is popularly used as RADAR AI. It is a service which collects data fro various sources like government, local authorities, and public services and release news. It writes around 30K stories monthly and using Natural Language Technology to write them.

Netflix
Netflix using AI for predictions of watch of their customers. Then this data will be provided to content providers and content creators. Based on AI recommendations new contents will be created and this way AI helps netflix to commit new seasons on the new shows.

Cortana
Cortana is a product Microsoft. If you have windows 10 installed then you might have used it or you might have seen it. It is a virtual assistant performs various roles. For example - it can be work as chatbot on skype, display news, weather travels etc.

AI Ethics

AI ethics refers to the basic principles of AI system design that use the good code of conduct and produces the results.

In other words ethics means what is right and unethical means what is wrong.

AI ethics are classified into two categories:

1. AI bias
2. AI access

When you tap on allow button on your mobile or smart phone you are giving your details for simple access. That means whatever data you fed in that particular app is your identity according to the app you have used.

As you have seen that most of the robots or assistants are available in female voice only. This is because the computer system trained on the specific data and common observation for those kind of jobs.

Components of a good AI Policy

Good policy refers to the concerns which should be in consumers' favor. The following topics can be considered as good AI policy:

1. Transparent System
2. Right of data collection
3. Freedom of leaving the system
4. Design
5. Data deletion

1. Transparent System

A transparent system refers to the guideline and system purposes should be very clear to its users. While collecting data the purpose and the detailed guide about what to be done with the data should be known to the users.

2. Right of data collection

When the data is collected by the AI system it must be right to the data which the system is collecting. Without the collection of data, it cannot take the right decision for the user.

3. Freedom of leaving system

The user must have the freedom to leave the system. After using such system if user want to leave the system, the freedom should be given to the users.

4. Design

The system should be designed in such a manner that the data collection and purpose should be limited. This helps the users to stay and use the system in a good manner. The interface itself provides such controls to users.

6. Data Deletion

When the user leave the system, his data should be deleted. Or sometimes user requests to delete their data it should be provided in the system itself.

AI Access

Ethical concerns related to AI access

If you are developing a system or a new technology, you may face some ethical issues related to that system or new technology. Similarly AI systems also facing these ethical concerns.
Data management is the first concern because AI is mostly rely on data. The AI system is nothing without data.

Now a days internet has the entire world. We are using smartphones and internet. Daily we are accessing lots apps and websites. Can you answer these questions:
When we install any app on your mobile, the app is asking for permissions like

1. Contacts
2. Location
3. Email
4. Storage
5. Notes

These all data Google is using for the exchange of the details whenever such apps are used in your mobile. Sometimes it improves user experience as well. You will get the information from your app as per your previous transactions and actions on the app.

The AI access is a set of ethical concerns related to the adoption of AI systems.

These concerns are as follows:

1. Unemployment
2. Inequalities
3. Negative Adoptions
4. Black Box problem

AI Access

1. Unemployment
This is very the important topic of debate. Many says that AI adoption can increase the jobs and employment opportunities, many says that it reduces the employment and takes many jobs from human being and many says there is no effect of AI on employment.
Do a research on this topic on google.

2. Increasing Inequalities
By adopting AI, results in a reduction in the number of people required for particular jobs. It will definitely affect the economy and increase the gap in the economy hence increase inequalities.

3. Negative Adoptions
Negative adoptions are part of our life. The negative minded community like hackers, terrorists and some other mafias can use this technology for some other purposes and misuses them.

4. Black Box problem
The black box problem refers to the situation that is created by a system itself and the developer of system cannot resolve them. This happens quite often with AI systems.