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ARTIFICIAL INTELLIGENCE

"AI Toolbox :

A Handbook of Artifical Intelligence Tools and Techniques"

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ARTIFICIAL INTELLIGENCE

"AI Toolbox: A Handbook of Artificial Intelligence tools and techniques"

1. What is AI:

❑ AI Stands for Artificial Intelligence

❑ AI refers to the development of machine or computer system that can perform tasks that would require human intelligence like learning, problem solving, reasoning, language understanding, perception etc.

❑ AI refers to the simulation of human intelligence in machines that are programmed to think and learn like humans.
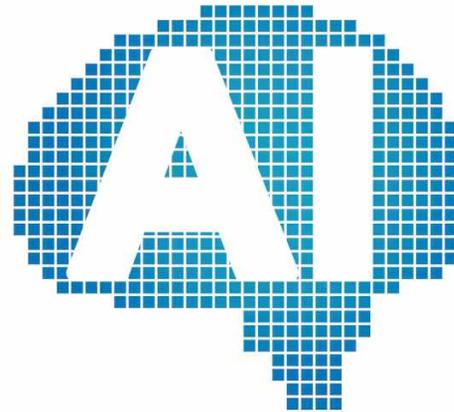
2. How AI works:

❑ AI is powered by algorithms and models which use techniques like machine learning, deep learning, natural language processing and computer vision to process vast amount of data, learn from it and make decisions or predictions based on that learning.

❑ AI works by combining data, algorithms and computing power.

3. Applications of AI:

❑ AI has the potential to revolutionize numerous fields such as health care, finance, education, transportation etc. by automating tasks, enhancing decision-making, improving efficiency, providing personalized experiences and by solving complex problems.

❑ **AI applications include:**

○ Virtual assistant (Siri, Alexa)

○ Image and speech recognition

○ Natural language processing

○ Expert System

○ Robotics

○ Predictive Analytics

○ Autonomous vehicles

○ Chatbots

❑ AI is transforming a wide range of industries right now and as AI evolves, it will play an even more prominent role in shaping the future of how we live and work.

❑ Some sectors (fields) where AI used and applications of AI in those sectors are as: -
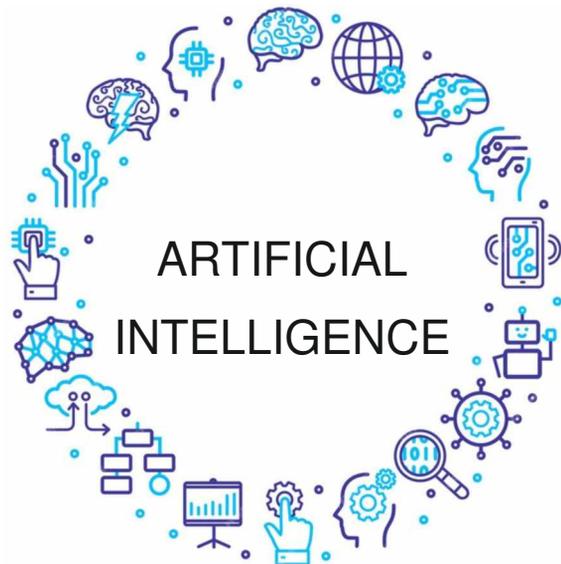
(a)   Health care:

•   Medical diagnosis

•   Medical imaging

•   Drug discovery

•   Robotic surgery

•   Personalized medicine

(b)   Finance:

•   Fraud detection

•   Trading

•   Risk management

•   Customer support (chatbots)

(c)   Retail and E-Commerce:

•   Personalized shopping

•   Inventory management

•   Price optimization

•   Customer service

(d) Transportation:

- Self-driving cars (Autonomous vehicles)
- Traffic management
- Optimize routes to solve transportation problems

(e) Manufacturing:

- Supply chain management
- Equipment predictive maintenance
- Quality control
- Autonomous robots to perform repetitive tasks like assembly, packaging etc. with high precision and efficiency.

(f) Agriculture:

- Weather prediction
- Autonomous Farming equipment
- Pest and disease detection

(g) Entertainment:

- Content creation (music, video, games, script)
- Content recommendation (Netflix, YouTube)
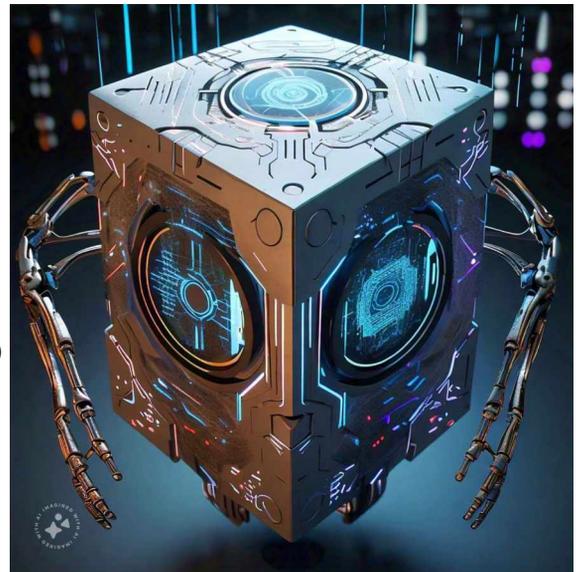
(h) Education:

- Personalized learning
- Automated exam and grading
- Content creation (Quiz, Assignment, PPT, Lesson Plan)

(i) HR (Human Resources):

- Recruitment
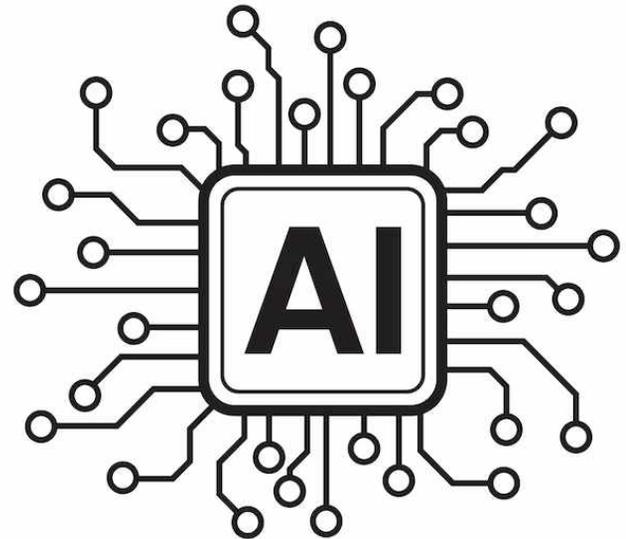- Employee monitoring
- Skill development

(j) Security:

- Facial recognition
- Smart surveillance
- Fraud detection

4. Why we need to use AI:

❑ You should have to adopt AI otherwise AI will replace you.

❑ Whenever a new innovation take place, slightly it replaces old tools. Its perfect example is smart phone. It replaces PCO telephone booth, camera, alarms clocks, cyber cafe etc.

❑ Use AI to stay competitive in a rapidly changing world.

❑ Use AI as a helping tool for your fast and efficient working.

❑ **Advantages of using AI are as:**

  ○ Automation

  ○ Accuracy

  ○ Scalability

  ○ Efficiency

  ○ Innovation

  ○ Personalization

  ○ Enhanced decision making

❑ **By using AI, we can:**

  ○ Solve complex problems

  ○ Improves lives

  ○ Drive economic growth

  ○ Enhance customer experiences

  ○ Stay competitive in a rapidly changing world

5. Should I fear by AI:

❑ We don't need to fear by AI. If we learn and use AI then only type of job role is change but no loss of job.

  Example: AI can do coding, designing in software company but still we need software engineers to train the AI models, to analysis them, to test them, to give commands or prompt to AI models or tools.

❑ AI is evolving very rapidly and it is not in our control. So simply accept and adopt AI and learn how we can use AI in our growth.

❑ AI is just a helping tool. It always needs human interaction.

❑ Elon musk said: "AI will not replace you, A person using AI will."

6. What is chatbot:

❑ Chatbot word is consist of two words chat & bot (robot) i.e. a software robot for chatting.

❑ Chatbot is a software application designed to simulate conversation with human users.

❑ Chatbot is a program that use Artificial Intelligence to understand and respond to human inputs or prompt (text/voice/command) for automated conversation.
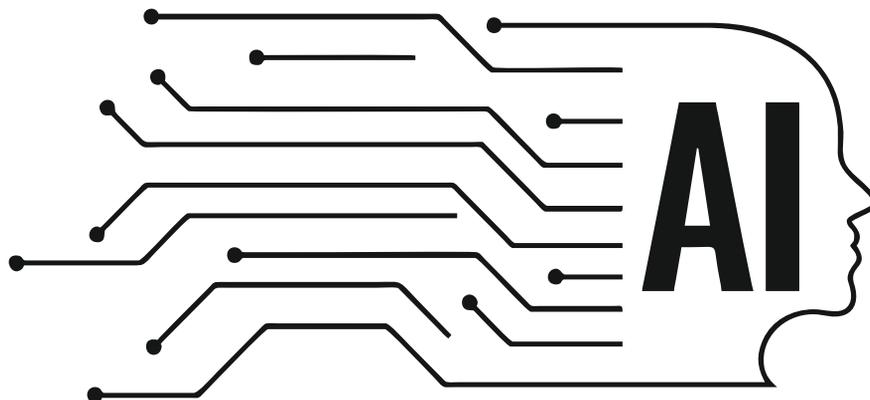
❑ Examples of chatbots are Meta AI, Chat GPT etc.

7. What is prompt and Prompt Engineering:

❑ Prompt is a command or message or text input or query given by user to AI model or chatbot for getting a response by them.

❑ Result provided by chatbot is depend on prompt given by the user.

❑ Prompt serves as a starting point for the AI model to generate text, answer a question or complete a task.

❑ Prompt engineering is the process of designing, optimizing and refining prompts to improve the performance and results of AI models. It is a language to talk with chatbot.

❑ **Prompt engineering aims to:**

○ Improve AI model accuracy

❍ Enhance output quality

❍ Reduce error

❍ Increase efficiency

❍ Optimize performance of AI model

8. What is AI tool:

❑ AI tool is a software application or platform that use Artificial Intelligence, Natural language processing and machine learning technologies to perform specific task that typically require human intelligence.

❑ AI tools can automate processes, analyze data, generate content, provide recommendations, virtual assistants, personalized services and decision making etc.

❑ **AI tools may be of following types:**

❍ Chatbot

❍ Language translation software

❍ Images recognition tools

❍ Predictive Analytics tools

❍ Content generation tools

❍ Virtual Assistants

❍ Robotic process Automation (RPA) tools

❍ Health care tools

❑ AI tools are used in various industries like healthcare, Marketing, Finance, Education, Customer Service, Entertainment etc.

❑ By using AI tools, organization can increase efficiently, drive innovation and gain a competitive edge.

❑ A wide variety of AI tools available today, enables both individuals and organizations to utilize the power of AI for a range of applications.

❑ Understanding the features, purposes and capabilities of these AI tools is crucial for effectively utilizing them in real world scenarios.

9. AI toolbox:

❑ A wide range of AI tools are available in present. AI tools have become a part of our daily lives in various ways. Some commonly used AI tools and their utilities are as: -

a) Meta AI:

• It is integrated directly into WhatsApp, required no additional downloads.

• It is most simple but powerful chatbot.

• Users can simply type their query and Meta-AI provides precise and relevant responses.

• It effectively replacing traditional search engines (like Google) for quick, precise and relevant responses.

• Meta AI also offers educational and entertainment value through games.

• Users can access a variety of learning games by simply typing "Game on Meta AI" and selecting the game from the list provided.

• Meta AI may also generate situation-based image. For this, first write /imagine and then write the situation for which we want to generate an image.

b) Claude (claude.ai):

• It is a powerful AI assistant tool.

• It can help us with a wide range of tasks like answering questions on various topics, helping in writing and editing etc.

• It is also used for creative writing, to create situation-based stories or poems, according to user prompts.

• This tool can generate content that resonates with the mood or theme making them perfect for personalized storytelling.

- It can write HTML/CSS code in seconds. Simply upload the picture of web page which we want to create, it writes code for you.

- Paste to any diagram on it and ask to explain the diagram, it creates notes of that images or diagram.

c) Chat GPT (chat.openai.com):

- It is a very powerful & popular AI tool which is developed by open AI.

- GPT stands for Generative Pre-trained Transformer.

- It can answer questions, can create content, provide explanations, assist in programming etc.

- ChatGPT is like loyal, intelligent, always ready to help type friend.

- It can search anything, translate the content, can code, can suggest, can create question paper, lesson plan etc.

- It is a package. When we explore it, it contains many AI tools for different specific tasks.

- Some tools in ChatGPT are as Website generator, Image generator, Write for me, Canva, Logo creator, DALL-E (Image creator), Presentation & Slide etc.

d) Gamma (gamma.app):

- This AI tool create PPT, website, Document for you in seconds.

- By using this, we can create attractive PPT in seconds.

- To create PPT simply click on generate PPT, specify subject topic, amount of text on each PPT (card), theme, color etc.

- It creates PPT, which is editable and shareable. To share the PPT, click on Export and Choose format PDF or PPT.

e) Questionwell.org (app.questionwell.org):

- It is a very important AI tool for teachers.

- By using this, can create question paper on any topic in seconds.

- To create question paper, simply specify number of questions, type of questions (MCQ / Fill in blank / Short type etc.), language of question (English / Hindi), class (Grade), topic. Click on generate questions and paper is ready which is editable and shareable.

- To share it click on export and choose format like Google form, MS Word etc.

- It also display you, correct answers of questions in paper.

f) Google earth (earth.google.com):

- This AI tool is beneficial for all but specially for history students.

- By this we can select any landmark on earth (like your college, Historical place etc.) and can view it in 3D.

- It is also useful for plan trips and explore new places.

g) Humata (app.humata.ai):

- This tool is useful to summarize a book or a large research paper.

- Simply upload the book or research paper on it and ask it to summarize it.

- You may also ask questions based on uploaded document.

h) Copy fish (ocr.space/copyfish):

- This tool is use to capture text from a video.

- Add copy fish to your chrome extension and then specify URL of video. It captures text from that video for you.

i) Gemini (gemini.google.com):

- It is use to explain subject or a topic in simple way. It can provide summary of a complete book.

- It can create notes from a long video. For this ask it :

   Please go to on YouTube video link/URL and provide key insight from this video.

- Gemini can access YouTube but ChatGPT can't. Since Gemini is product of Google and YouTube is also of Google.

j) Copilot:

- This is a LLM (Large Language mode) model of Microsoft.

- It is like you every day AI companion.

- It can create word document on any topic and also can do formatting of that.

- It can summarize on article, can create PPT.

- It can provide key insights, prepare strategy from large reports for managers.

- It can write mail for you. Simply give prompt as:

   Write email to HR to take two days seek leave.

- This generative AI tool provide human touch in AI generated content. So, it is difficult to detect by AI detector while ChatGPT content may detected by AI detector.

- You may search job using it. Simply write prompt as:

  Job vacancy for <u>profession</u> in <u>city</u> where package is above <u>10 lac</u>. It can also create ATS proof resume for you

- It can create an image for you on any specified situation like create an image of a boy sitting on moon with chocolate in hand. It creates image which can be download & share.

k) Sketch 2 Code:

- This tool is use to write HTML/CSS code in seconds.

- Just scan what you want on web page, upload it. It writes HTML/CSS code to design that web page.

l) VidIQ:

- This tool is use to promote your video on social media platforms & YouTube.

- By this we can increase reach of video to more users.

- This tool uses advanced SEO and analytics features.

- It provides us multiple keywords, title, description & help in creating tags.

- This tool also tells us interest of audience and strategies of your competitors, so that we can update our content.

m) Synthesia.io:

- By using this tool, we can create animated video in multiple languages based on our text content. Without showing our face we can create interesting videos.

10. Summary:

❑ A wide range of AI tools are available to make your life easier. So, use them as your requirement to save your time, to increase productivity & Quality.

❑ Focus on your prompts to get better outputs from Chatbots.

❑ AI is not a choice. It becomes compulsory for all to learn and use.

❑ You can't compete with AI. It is fast, cheaper, always ready to work, loyal. So, no need to compete with it, simply try to work using AI to win.

❑ AI don't replace you directly but a person using AI will.

❑ So, you have to adopt new situation, new technology, which is AI. Transform yourself using AI to stay competitive in this era.

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