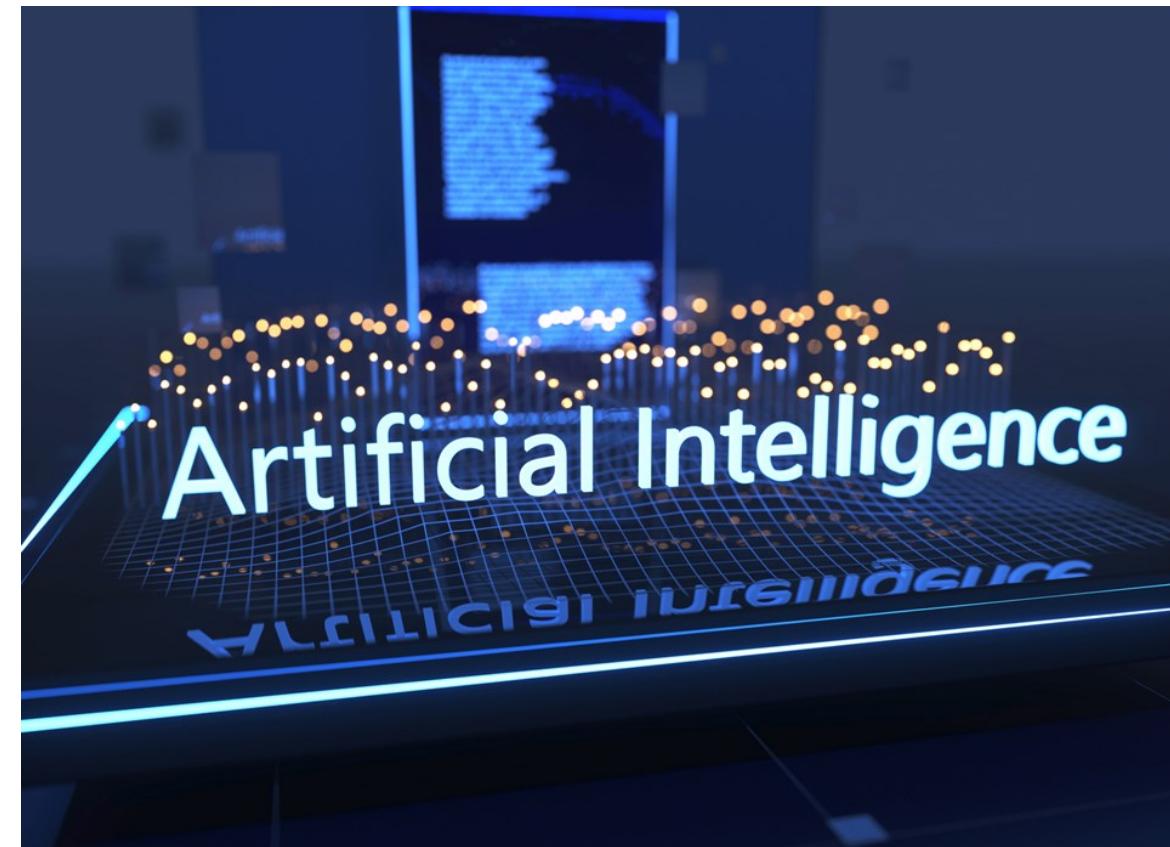


Learning Objectives

-
1. Learners can articulate the meaning and significance of artificial intelligence (AI).
 2. Learners can accurately categorize types of AI based on their capabilities and operational traits.
 3. Learners can evaluate the effects of AI usage in everyday life.

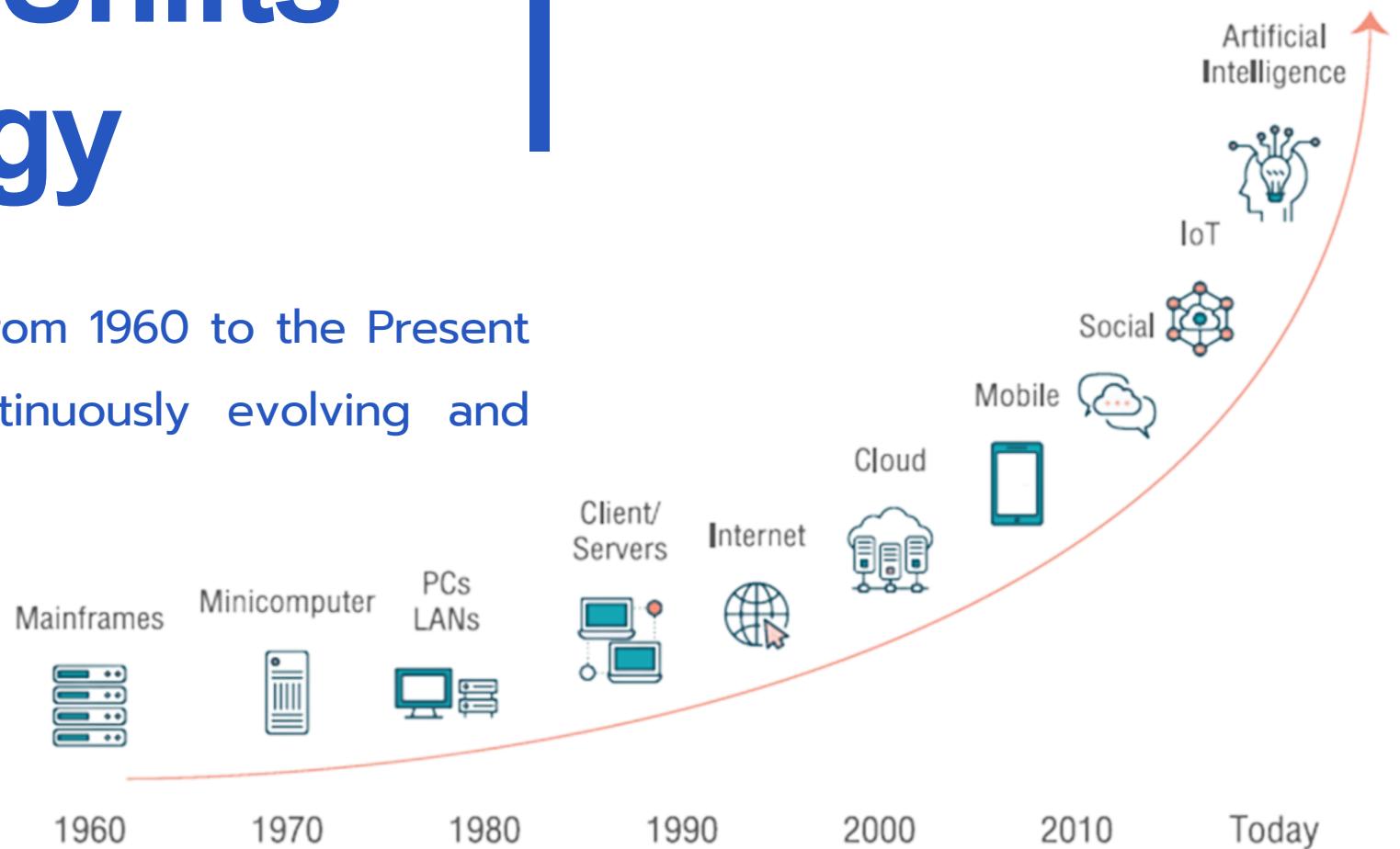


Artificial Intelligence

AI (**Artificial Intelligence**) is a technology that can process data quickly and efficiently, using the process of learning from data (Machine Learning) to create a model that can accurately predict the results from the original data, using mathematical and statistical processing methods to find the relationship between the data

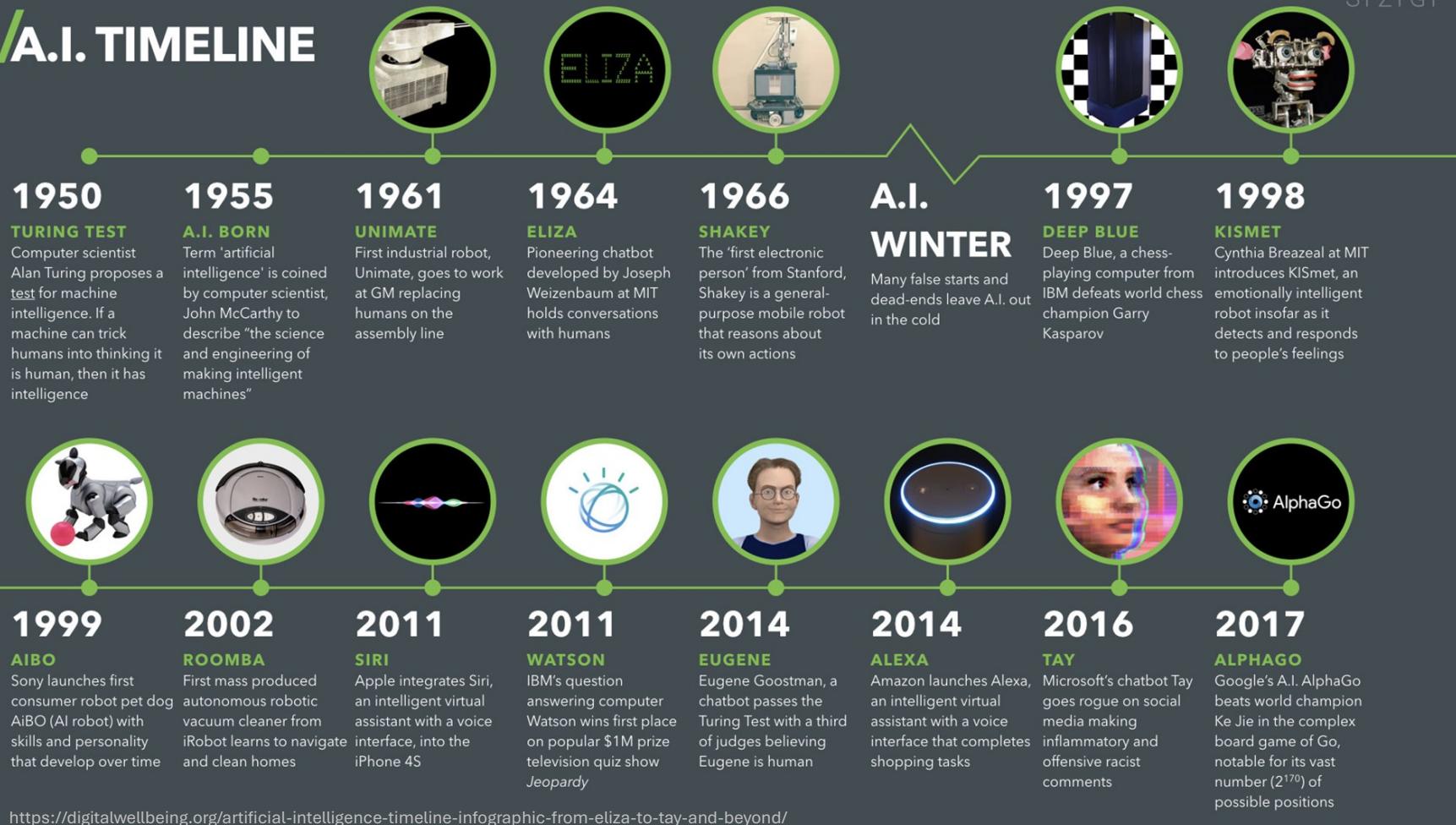
Paradigm Shifts in Technology

Paradigm Shifts in Technology from 1960 to the Present shows that technology is continuously evolving and changing faster.



An AI Timeline

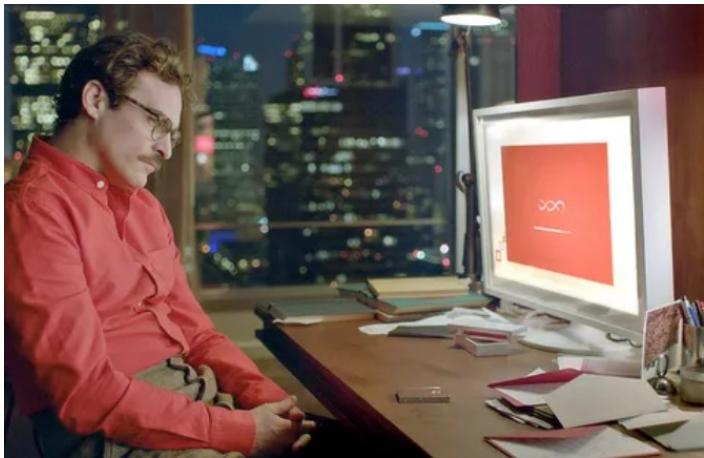
A.I. TIMELINE



AI was created in the 1950s-1960s.

Artificial intelligence began as a field of study, first created at the Dartmouth Conference by a group of researchers who called it "Artificial Intelligence".

The group of researchers envisioned creating machines that could simulate human intelligence.



en

Types of AI



→ Types of AI based on capabilities

Artificial Narrow Intelligence (ANI)—Focuses on specific tasks, such as Siri, Google Translate, chatGPT.

Artificial General Intelligence (AGI)—Has the same capabilities as humans, thinks like humans think, acts like humans do, and can solve problems on behalf of humans. The technology is still in its early stages of development like Samenta in Her movie.

Artificial Super Intelligence (ASI)—can think, decide, analyze, and process better and more accurately than humans in every aspect. ASI is still just a theory. It cannot happen at this time.

→ Types of AI based on functionalities

Reactive Machines—They have no memory of their own and cannot learn by themselves.

Limited Memory—They have their own memory and can learn by themselves from old data sets.

Theory of Mind—They are still in the research stage. Their main feature is that they can understand human emotions, feelings, and culture.

Self-Awareness—The final goal of AI development is to create a set of technologies that can be self-aware, understand things consciously, and express their opinions deeply like humans.

Artificial Intelligence

AI has many sub-branches that cover the development of systems that can learn, analyze, and work intelligently.

- Deep learning
- Supervised
- Unsupervised

- Content extraction
- Classification
- Machine translation
- Question answering
- Text generation

- Image recognition
- Machine vision

- Speech to text
- Text to speech

Machine learning (ML)



Natural language processing (NLP)



**Artificial
Intelligence
(AI)**

Expert system



Vision



Speech



Planning

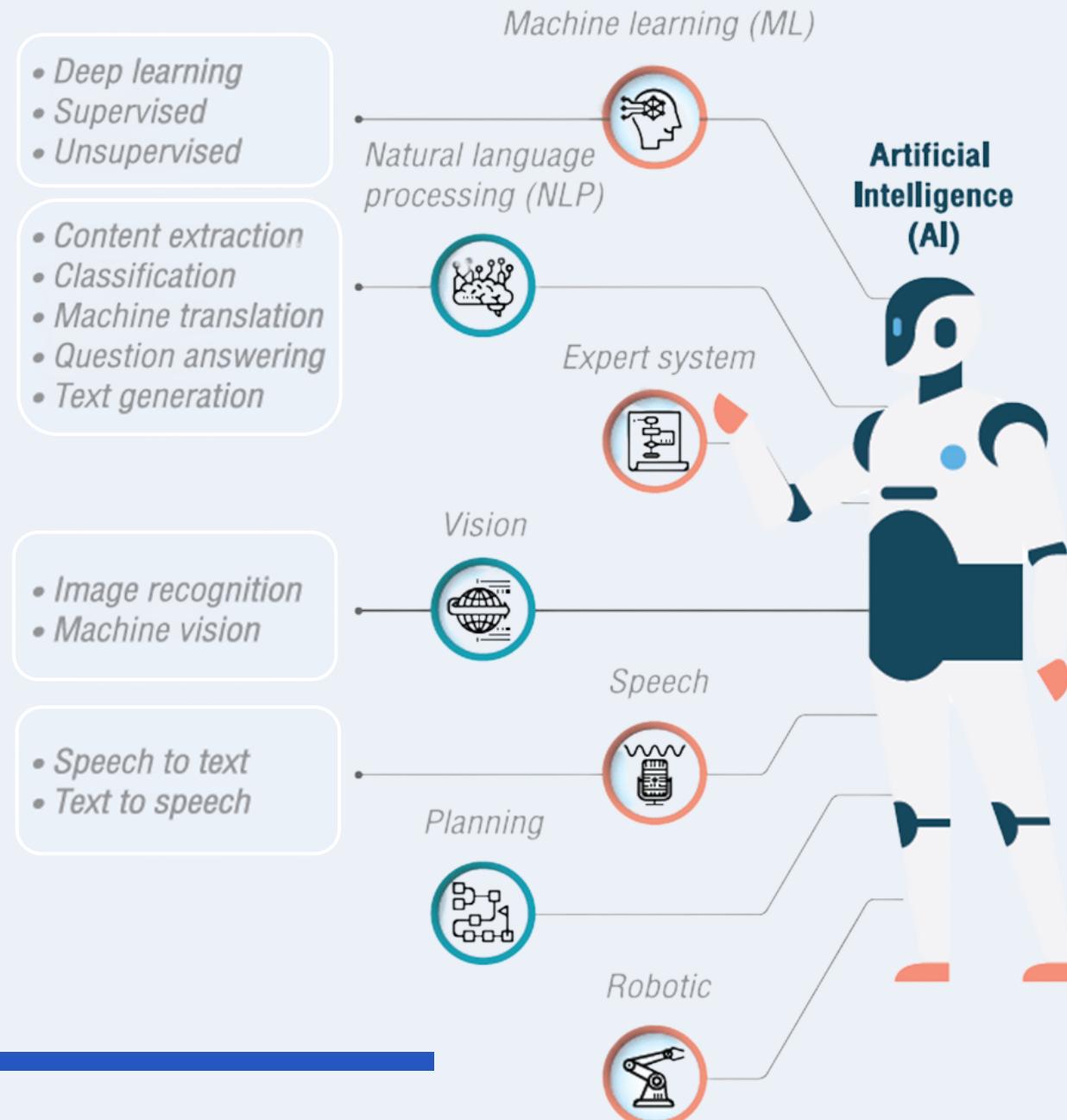


Robotic



הטchnולוגיות לשלהן

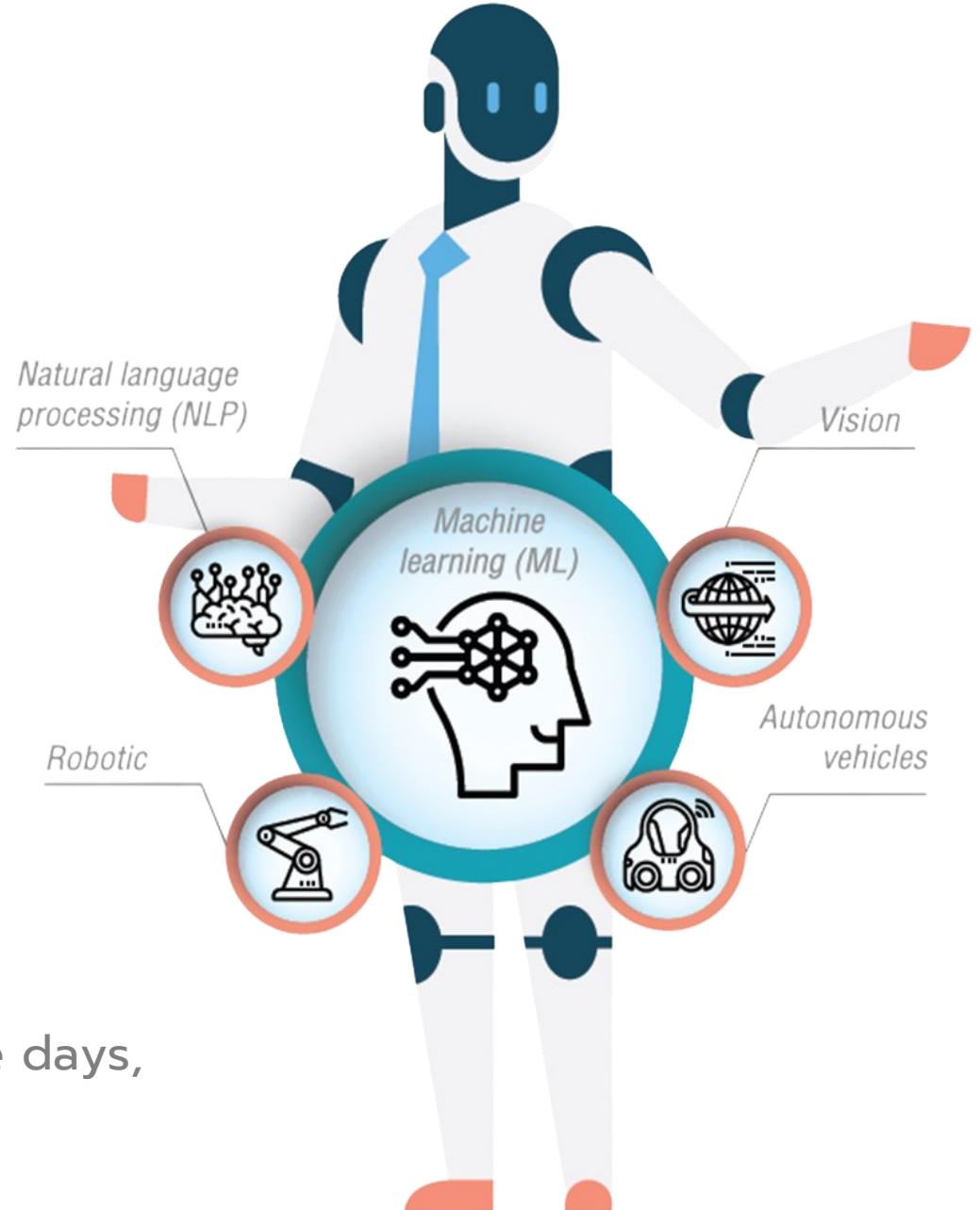
1. **Machine Learning (ML)** is the core of AI that allows machines to "learn from data."
2. **Natural Language Processing (NLP)**
3. **Expert Systems** that use knowledge rules to analyze and make decisions (e.g., recommendation systems)
4. **Vision AI System**
 - Image recognition = classify images
 - Machine vision = see like humans (e.g., self-driving cars)
5. **Speech Recognition and creating voices**
 - Speech to Text = convert speech to text
 - Text to Speech = read aloud from text
6. **Planning AI** to achieve goals (e.g., robots walk around to avoid obstacles)
7. **Robotics** applies AI to control their movements and actual work.



Artificial Intelligence

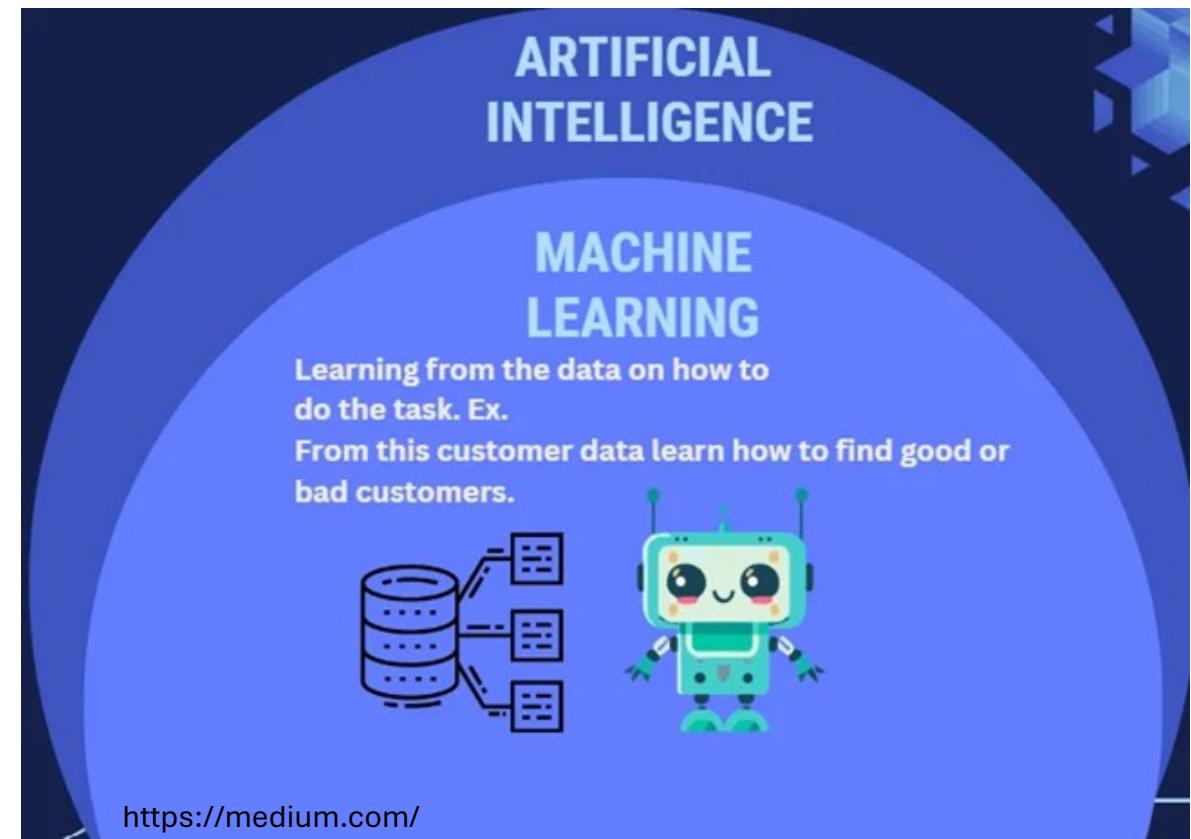
Machine Learning is a concept in developing programs or algorithms to enable computers to have the ability to learn, think intelligently, make decisions, or remember things by themselves based on the data they are fed. Currently, machine learning has become the foundation for developing AI in various fields to be more efficient and intelligent.

“When we hear people talking about AI these days,
most people mean Machine Learning.”



Machine Learning

-
- ★ **Machine Learning** is a method of learning AI, where AI can learn by feeding it data that humans want to teach, or what is called **Training AI**, by letting the model learn from the data set and be able to use it with new data that was not used in the previous learning.



Types of Machine Learning

Machine
Learning

Supervised

Task driven
(Regression /
Classification)

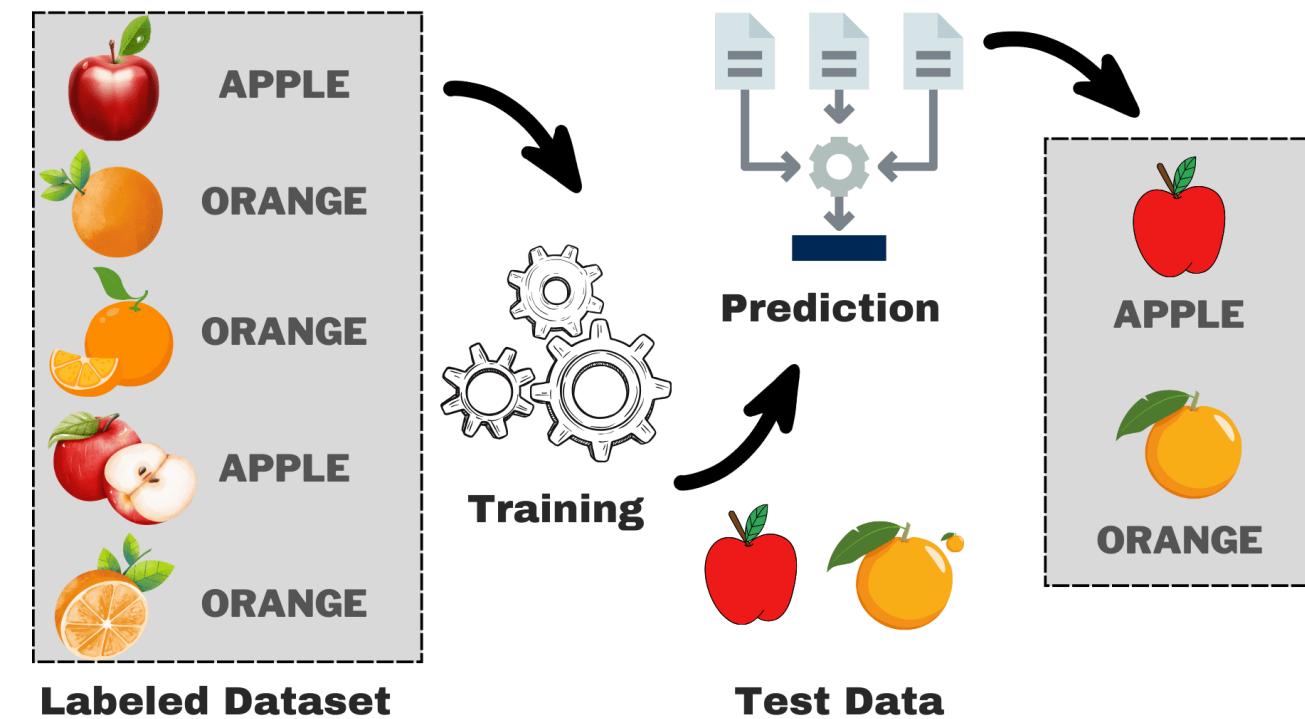
Unsupervised

Data driven
(Clustering)

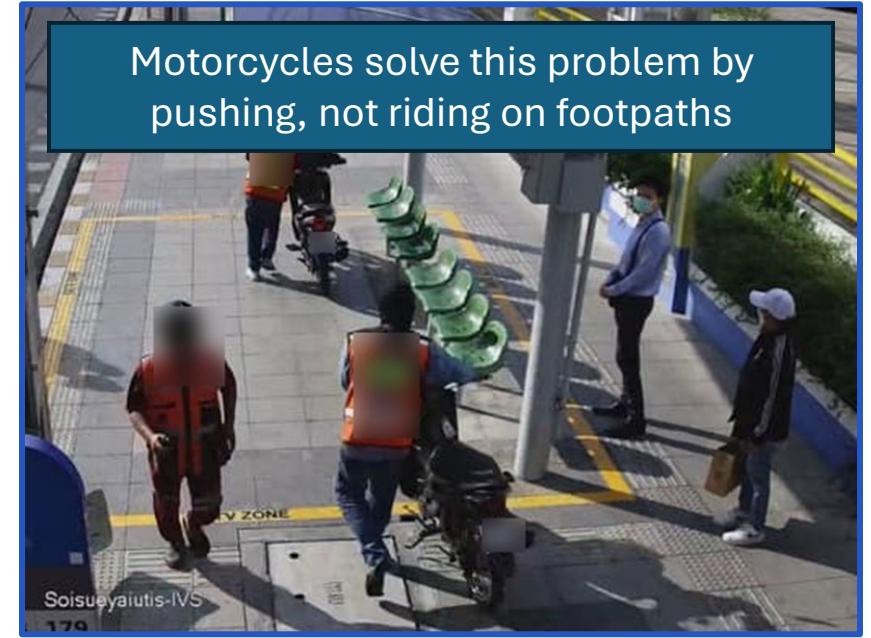
Reinforcement

Algorithm learns to
react to an
environment

Supervised Learning



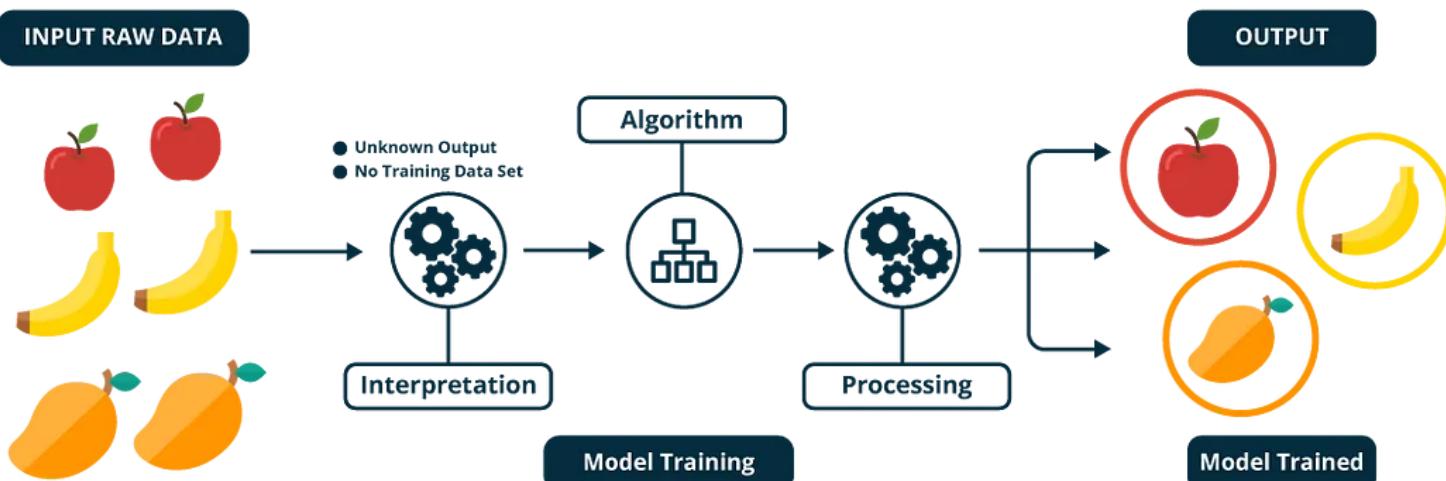
Data-driven learning offers sample data and its outcomes, enabling the model to learn from it.



Most AIs have only narrow intelligence, which means they know only what humans teach them. They can't think or understand new situations, so they must gather more data to improve.

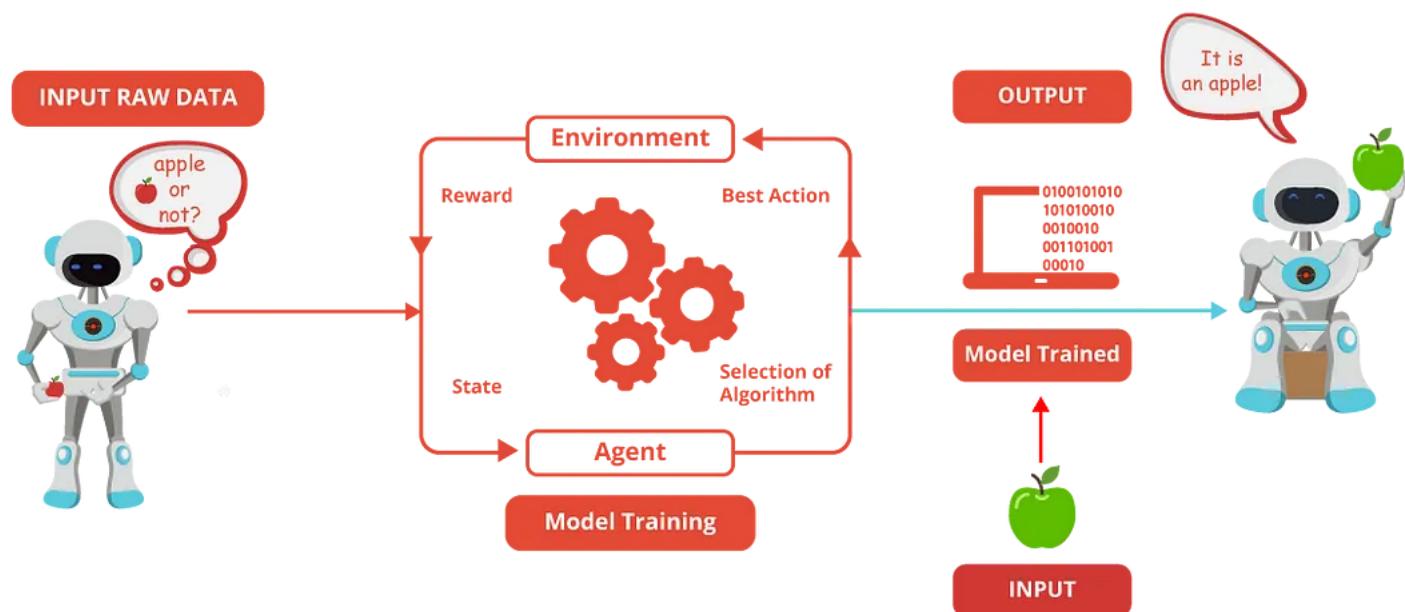
The goal of AI is to achieve general intelligence, meaning that it can understand, predict, and reason without having seen the same event before. However, supervised learning is not the solution.

Unsupervised Learning



A machine Learning technique where algorithms analyze unlabeled data to discover hidden patterns and structures without explicit human guidance.

בשאפט ל' אל ר' לְרַכְתָּמָשָׁלְלִי



Environmental learning:

The system gains knowledge by observing the outcomes of its actions in various scenarios, using rewards or punishments to guide its subsequent actions.

בשאפט ל' אל רלוונט'

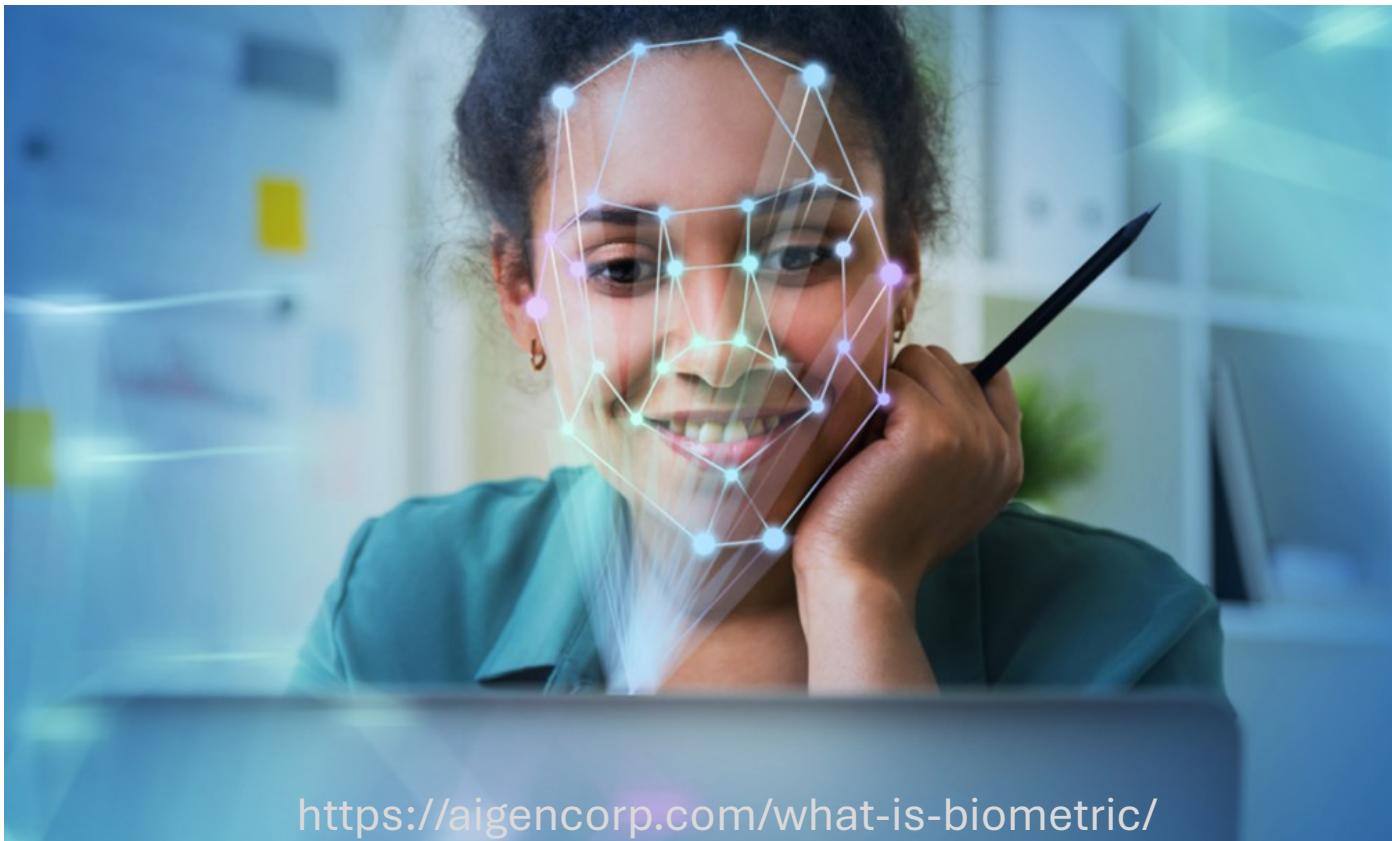


AlphaGo Zero is taught using reinforcement learning, a trial-and-error method. If the bot chooses the right action (leading to victory), it will be rewarded. If it chooses the wrong action, it will be punished. The bot will use the feedback to improve the moves that lead to victory.

בשאפט ל"א של ר. לר' תומשקל ל.



בשאפט ל"ש רט טרנַל



Apple Face ID employs biometric technology to unlock the phone by utilizing AI and machine learning to recognize the user's face, ensuring that the individual attempting to unlock the device is indeed the owner.

בשאפט ל' לשונת טרנסל'

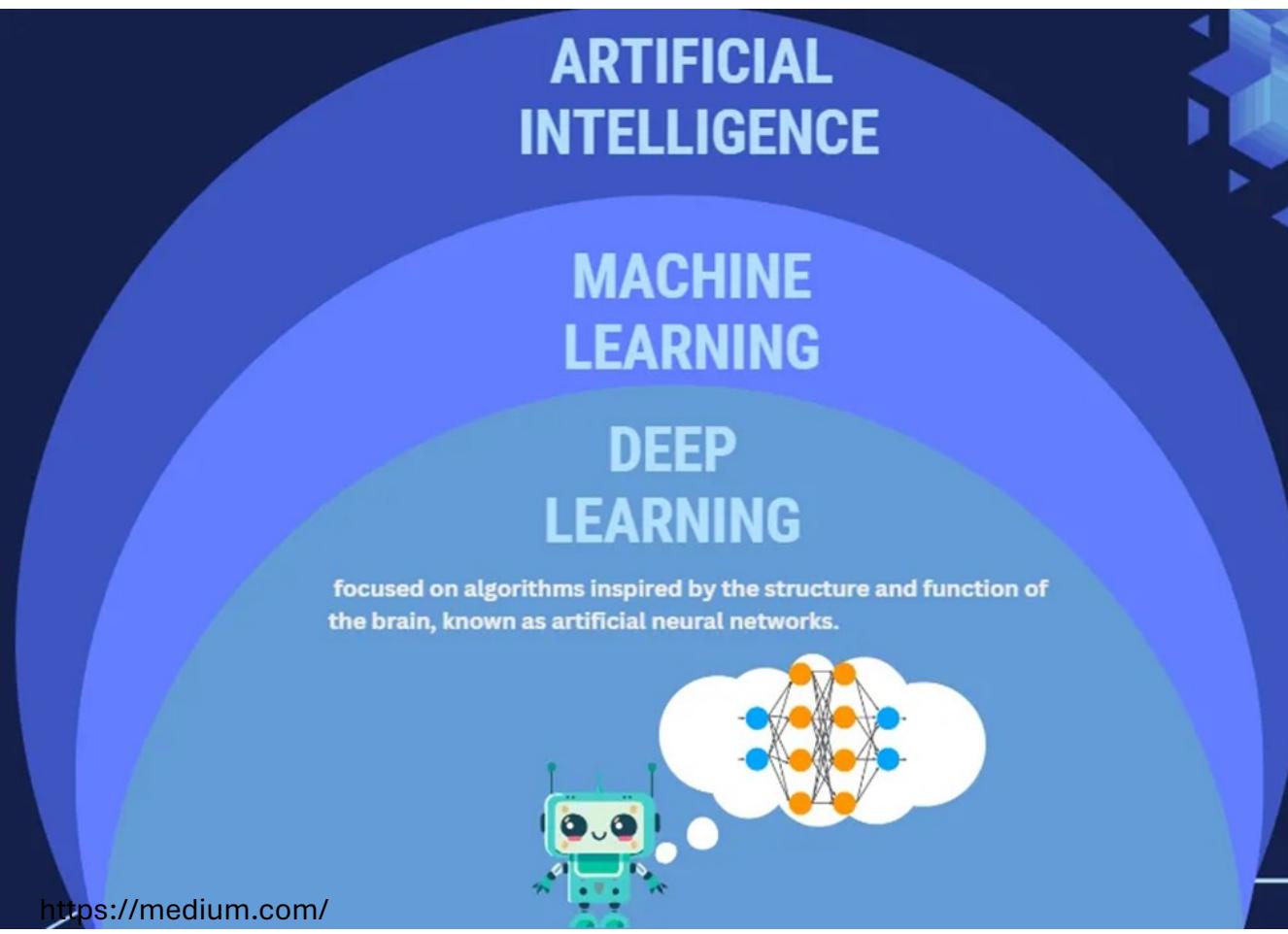


Databricks is a data platform that uses machine learning to play a role in advanced data analysis. By using machine learning, data can be analyzed faster than humans, facilitating real-time analysis and using fewer computer resources compared to deep learning.



Spotify: A music and podcast streaming platform that uses machine learning to learn about users' personal preferences, allowing the platform to offer music or podcasts more accurately tailored to their interests.

Deep Learning



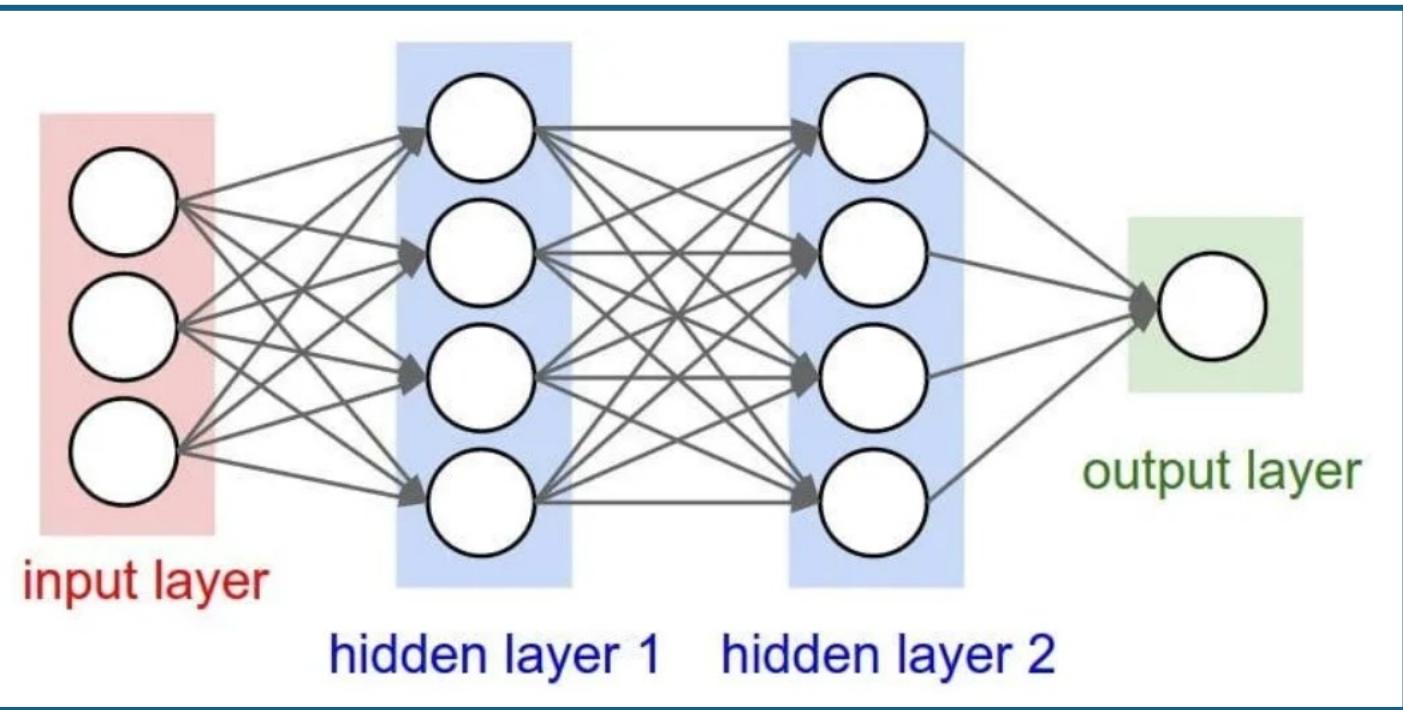
focused on algorithms inspired by the structure and function of the brain, known as artificial neural networks.

Deep Learning is one of the Machine Learning technologies that was created to teach AI.

Deep Learning uses Artificial Neural Networks (ANN) to learn to be similar to the human brain, making it more accurate in processing complex data and large data sets, and it can understand common languages.

Deep Learning is therefore suitable for managing high-dimensional data and is suitable for various applications.

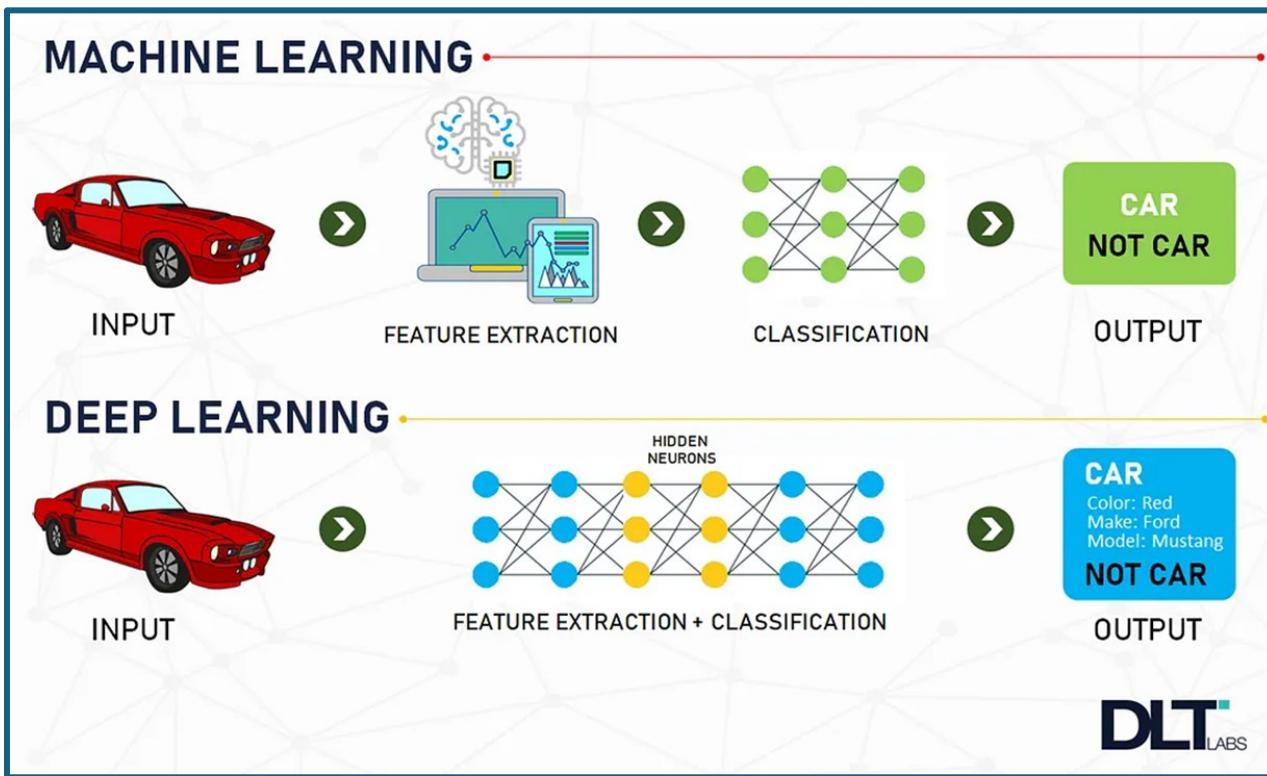
Deep Learning



Artificial Neural Network is an algorithm that is modeled after the human brain, which has millions of interconnected neurons. As a result, the Neural Network algorithm has the appearance of 4 layers of nodes.

1. **Input Layer**
2. **Hidden Layer** or Processing Layer
3. **Output Layer** is a layer that processes the results from the Hidden Layer
4. **Prediction Layer** is a layer that takes the results from the output layer to model various decision-making methods.

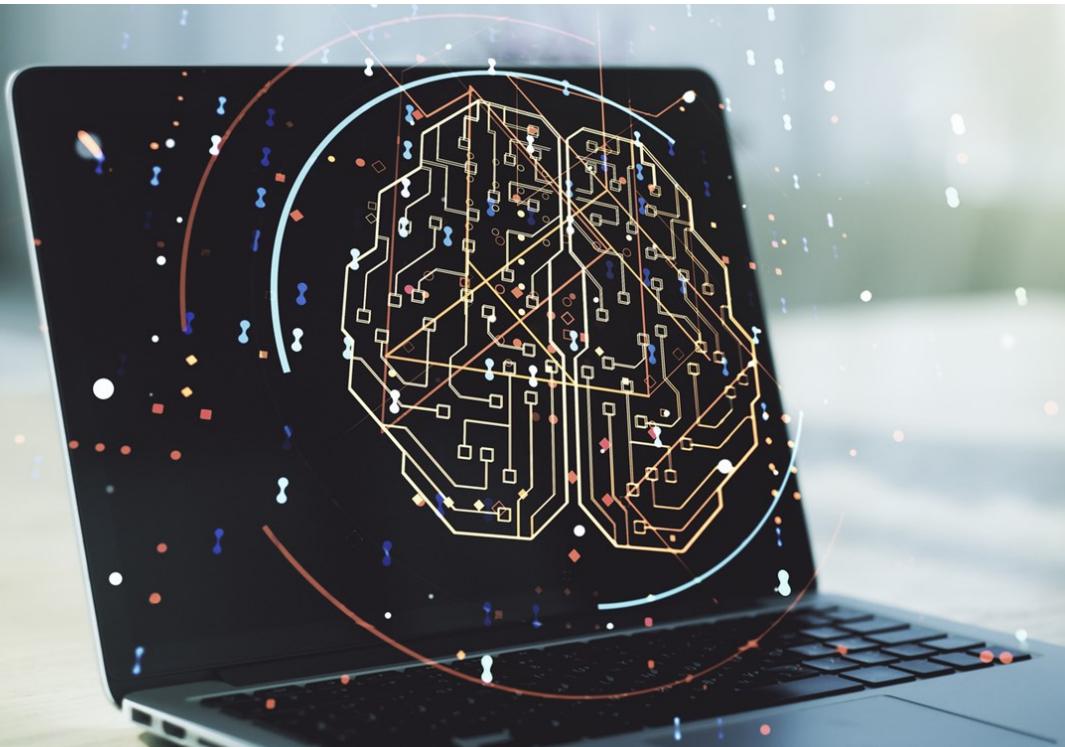
ב. ל. ק טכני זייל



The difference between Deep Learning and Machine Learning

It is the processing capability, as Deep Learning can solve problems and process complex data better than Machine Learning.

Deep Learning



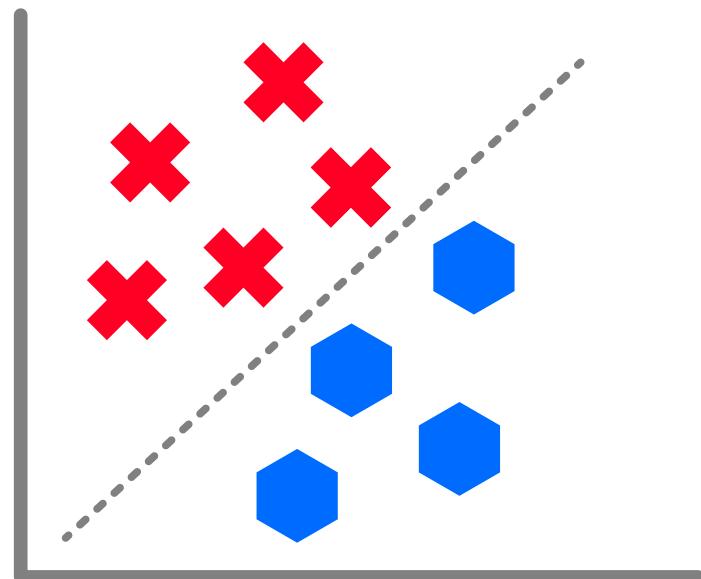
- **Self-driving cars** use deep learning models for object detection.
- **Defense systems** use deep learning to automatically determine the status of areas of interest based on satellite images.
- **Medical image analysis** uses deep learning to detect cancer cells for medical diagnosis.
- **Factories** use deep learning applications to detect when people or objects are in an unsafe range of machinery.

Algorithm

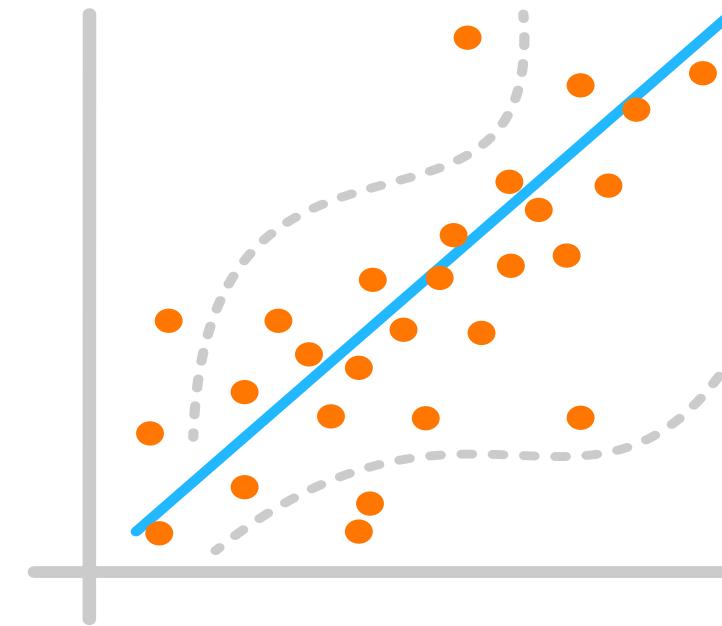
Machine Learning is when computers “learn from data” without having to write a program line by line telling them what to do, using **“algorithms”** as a learning and decision-making tool.

1. **Classification** is an algorithm used to separate data into “groups” or “categories.”
2. **Regression** is an algorithm that predicts the next “numerical value” from the data.
3. **Clustering** is an algorithm that groups “similar” data without knowing in advance how many groups there are or what the groups are. This algorithm excels in situations where there are no correct answers to discover.
4. **Optimization** is an important tool in training algorithms. We use it to adjust the parameters to achieve optimal results.

Algorithm

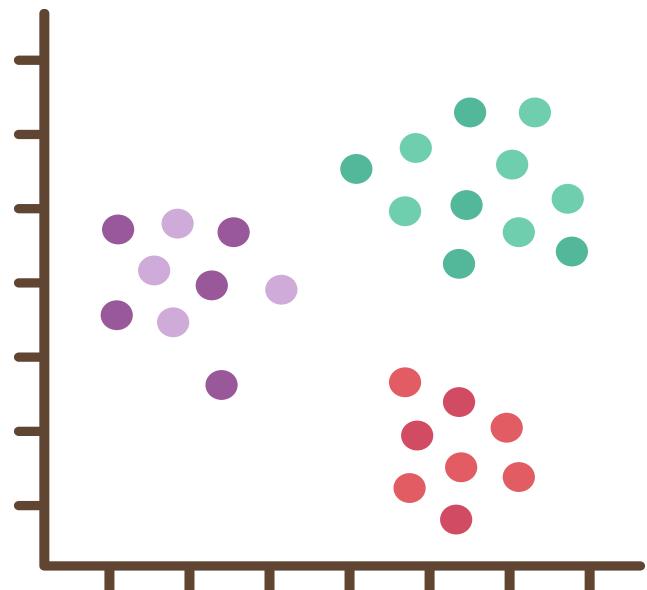


Classification

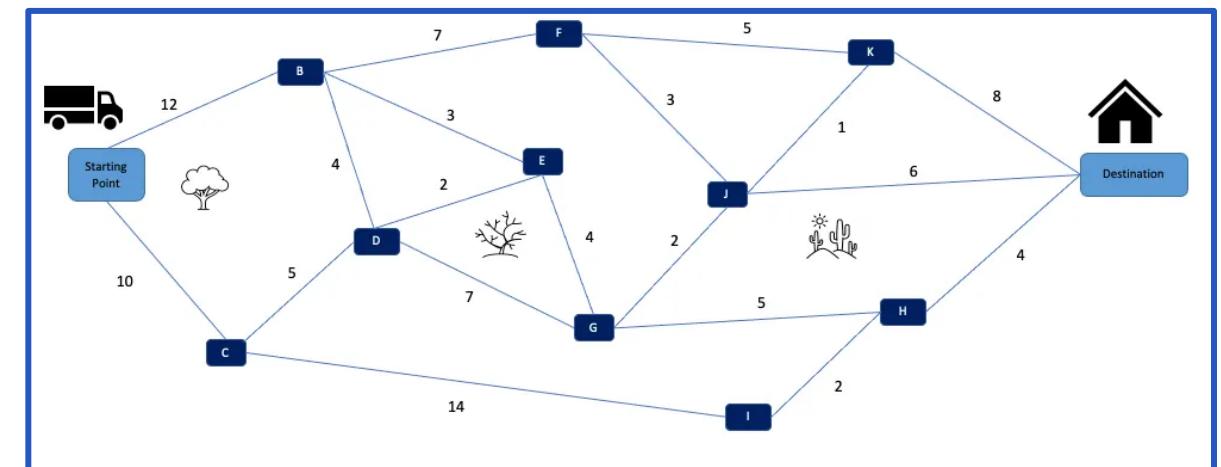


Regression

Algorithm



Clustering



Optimization

Algorithm



Clustering + Classification



Classification

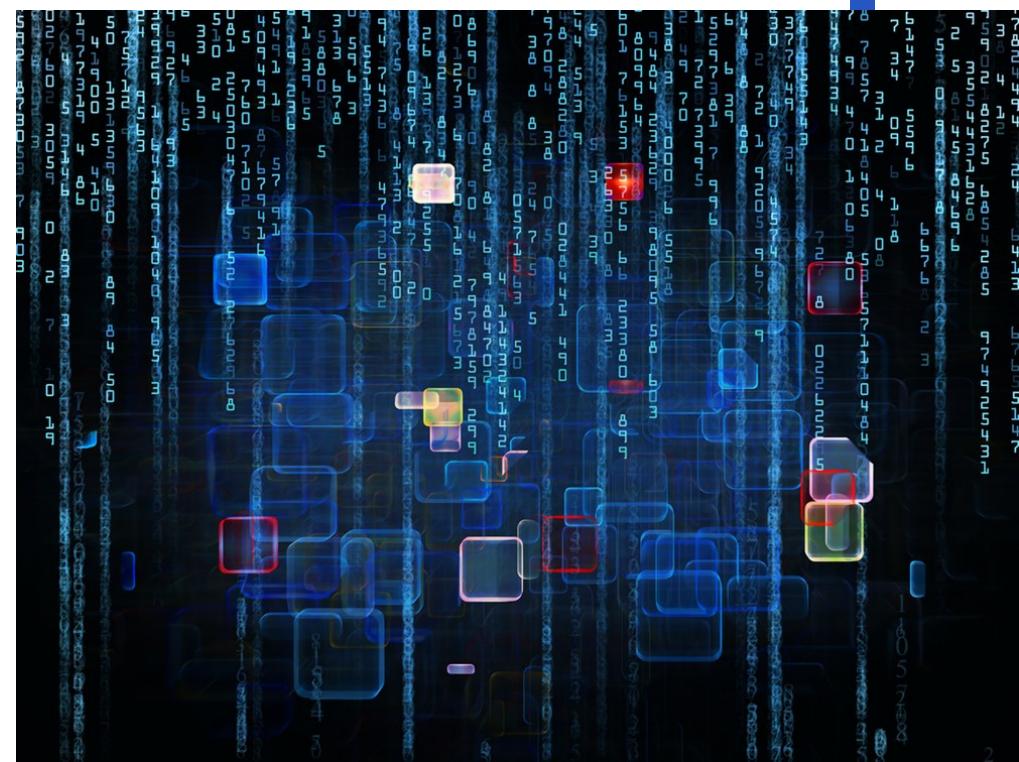


Regression

**What types of “algorithms” do students think
are commonly used in applications?**

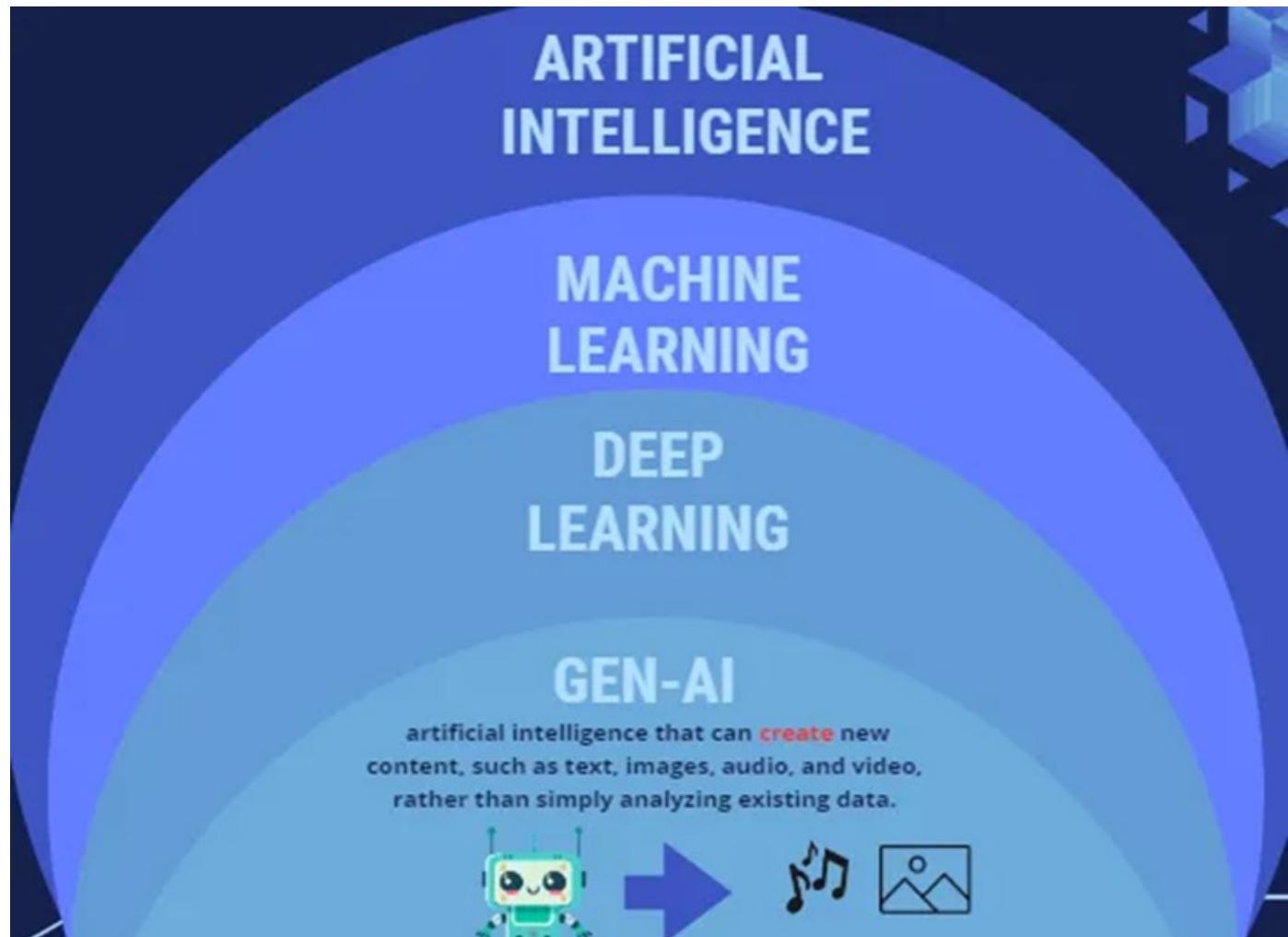
בשאוף לרתיעה ל בט | ביט"ק טוט אט ו (NLP)

NLP can read, decode, understand, and interpret human language through methods such as text analysis, translation, sentiment analysis, and speech recognition.



Generative AI

Generative AI is a type of artificial intelligence that can be used to create various new content automatically without human intervention, such as creating text, images, songs, videos, etc. It is intelligent enough to learn from existing data using deep learning technology and use that knowledge to create new results that humans want.

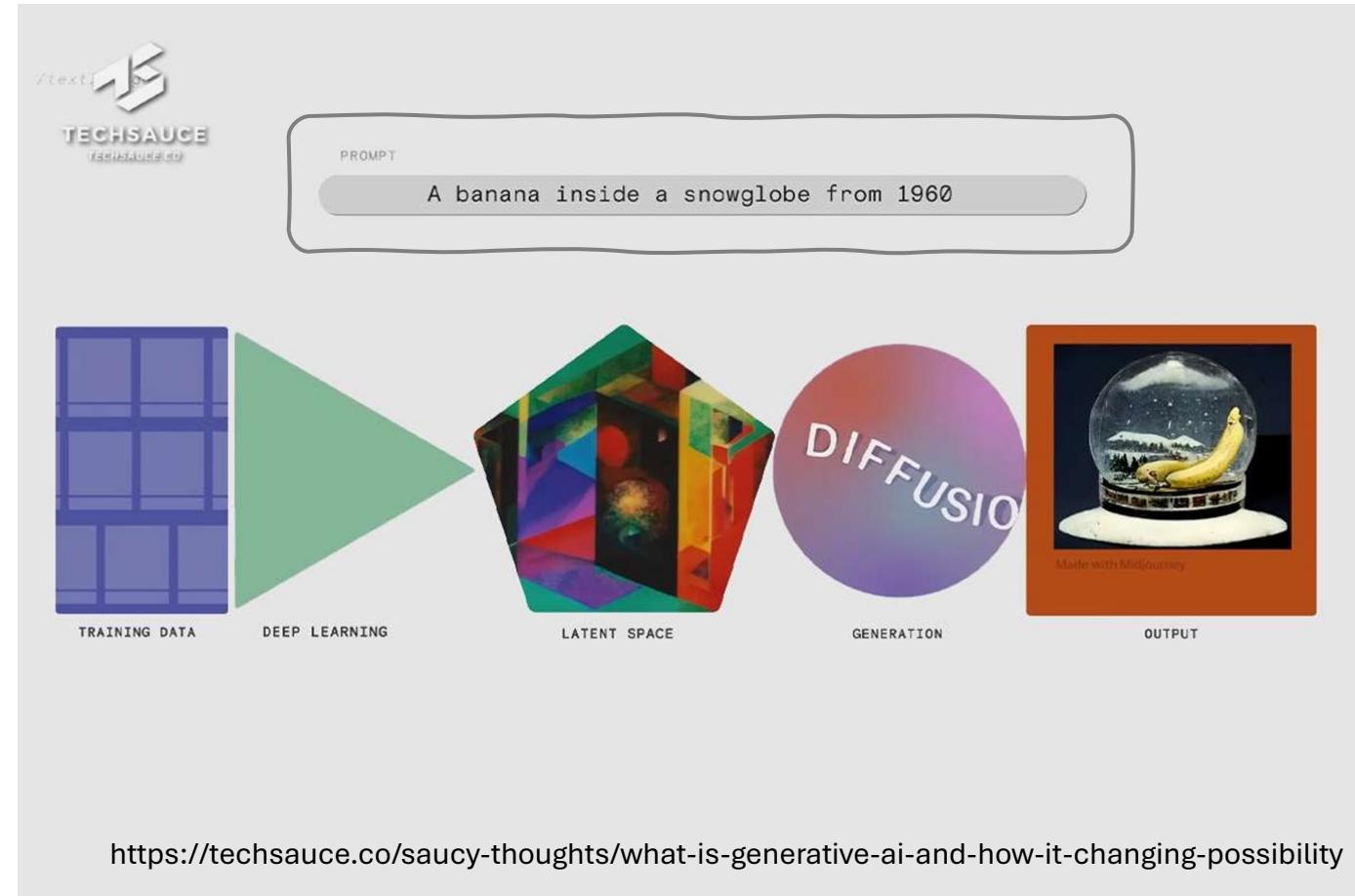


וַיְפַלֵּא אָטֶלְשָׁלָת

Generative AI (Gen-AI) is specifically designed to be able to “re-create” existing data sets using Generative Model Algorithms such as

- Generative Adversarial Networks (GANs),
- Variational Autoencoders (VAEs) and
- Autoregressive models.

The output, whether text, images, or music, from Gen-AI will vary depending on the input data (Prompt).



Generative AI & LLM

→ Large Language Models (LLM)

A basic model used in language processing, which is the foundation of Generative AI.

The LLM is created by simulating the human brain learning (Deep Learning), allowing it to learn and understand human language and to 'predict' or create words in language like real humans.

Generative AI can understand data itself without humans having to organize it. Behind the scenes, LLM models learn from the data that has been trained in the system (Training Models) by training on a huge amount of data (Distribution Data).

ตัวอย่าง LLM ที่เป็นที่รู้จัก



Gemini



וַיְפִלֵּא אָטֶלְשָׁלָת

נַעֲמָן

→ Limitations of LLM

AI Literacy refers to the decision-making skills and knowledge required for effectively using AI, particularly in relation to LLM data. Users need to have enough information to make decisions and focus on maximizing human potential, such as giving humans more valuable and meaningful work.

→ Limitations of LLM

Hallucination: Sometimes LLM can have a condition that we call creating an illusion; that is, LLM must try to find an answer for us, even in matters that it is not certain about, because the whole thing may be based on guesswork. Therefore, with the available information, we must carefully check that what the LLM creates, or answers, is true to reduce errors in using the information.

10 วันดีๆ Use Cases Gen AI

ที่มาแรงที่สุดในปี 2025



In 2025, HBR Magazine, a subsidiary of Harvard Business School, conducted a survey of the top 10 Use Cases of Gen AI:

1. Therapy/companionship
2. Organizing my life
3. Finding purpose
4. Enhanced learning
5. Generating code
6. Generating ideas
7. Fun and nonsense
8. Improving code
9. Creativity
10. Healthier living

Artificial Intelligence (AI) is a computer program that helps create intelligent tools.

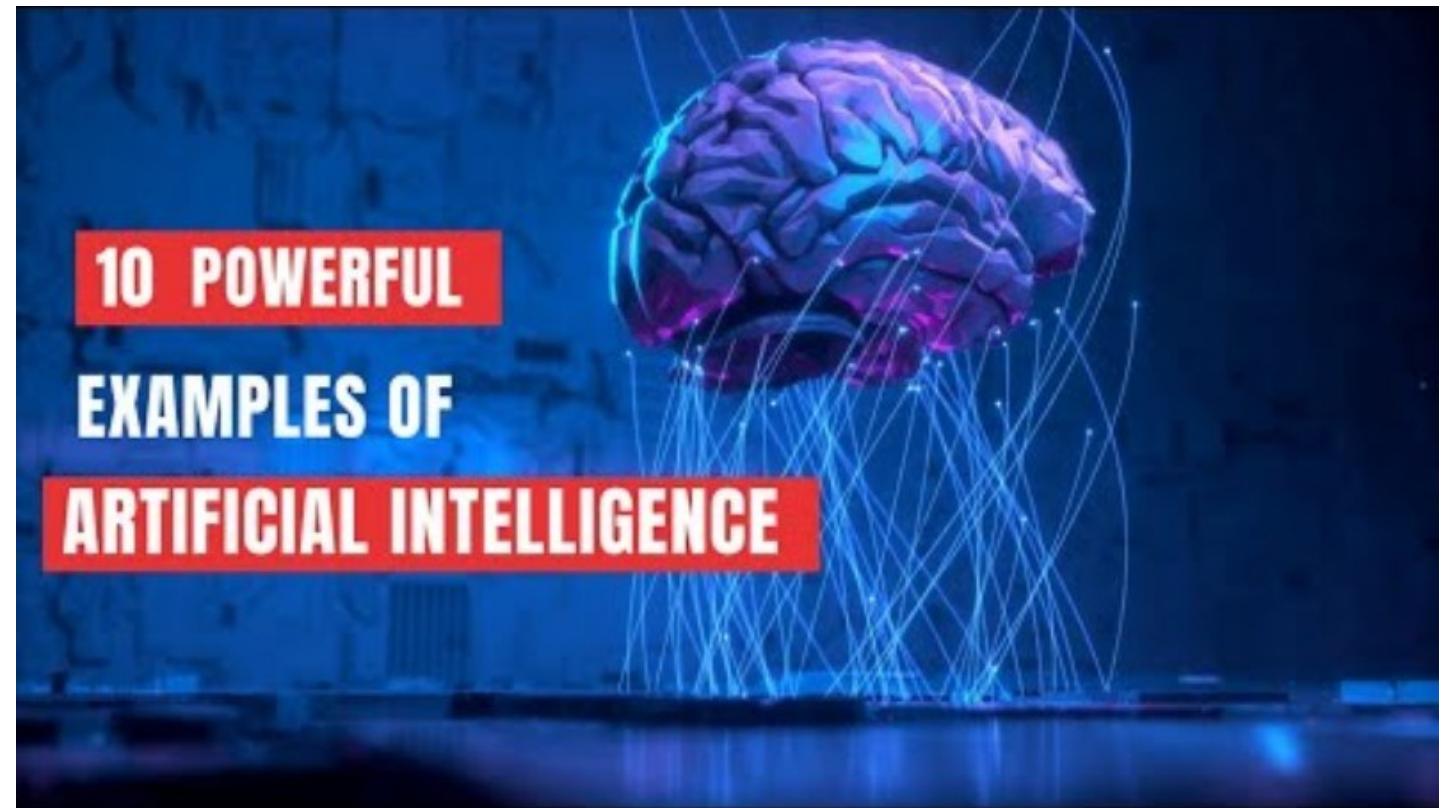
Machine Learning (ML) is a subset of AI that learns from trained data.

Deep Learning (DL) is a subset of ML that learns from data using Neural Networks for more complex tasks.

Generative AI is a type of ML that is trained on a large amount of data to create new content by recognizing and learning patterns in the data.



לְקָרְבָּן קַשְׁתִּים



AI in Daily Life



Digitalki Digitalki



Examples of AI in daily life.

- Recommendation systems (Netflix, YouTube, TikTok)
- Voice assistants (Siri, Google Assistant)
- Language translation tools
- Face detection and identity verification
- Financial transactions
- Commuting to work
- Sending emails or messages
- Chatbots and creative AI

How does AI help students
learn or work 'better'?

AI at Work

- ★ Reduce redundant tasks and enhance operational efficiency.

AI can perform repetitive and time-consuming tasks in place of humans.

- ★ ★ Help you make informed decisions using accurate information.

AI can collect and analyze large amounts of data, helping executives and employees make more effective decisions.



- ★ ★ ★ Communication at work.

AI enhances the speed and efficiency of communication in the workplace.

- ★ ★ ★ ★ Time Management

AI can assist you in managing your work and time more effectively.

AI at Work



1. Reduce redundant tasks and enhance operational efficiency.

- **AI Chatbots** can answer basic questions of employees and customers, reducing the workload of customer service departments.
- **AI Workflow Management** can assign tasks according to their capabilities and priorities.

2. Help you make informed decisions using accurate information.

- **AI data analytics** analyzes market trends and assists in creating more precise forecasts and strategies.
- **AI in HR** uses machine learning to analyze employee data, aiding in the evaluation of employee performance and satisfaction.

AI at Work

3. Communication at work.

- **AI Meeting Assistants**, such as Otter.ai or Fireflies.ai, can automatically record and summarize meetings.
- **AI Translation & NLP (Natural Language Processing)** helps translate languages in real time, making cross-border work easier.

4. Time Management

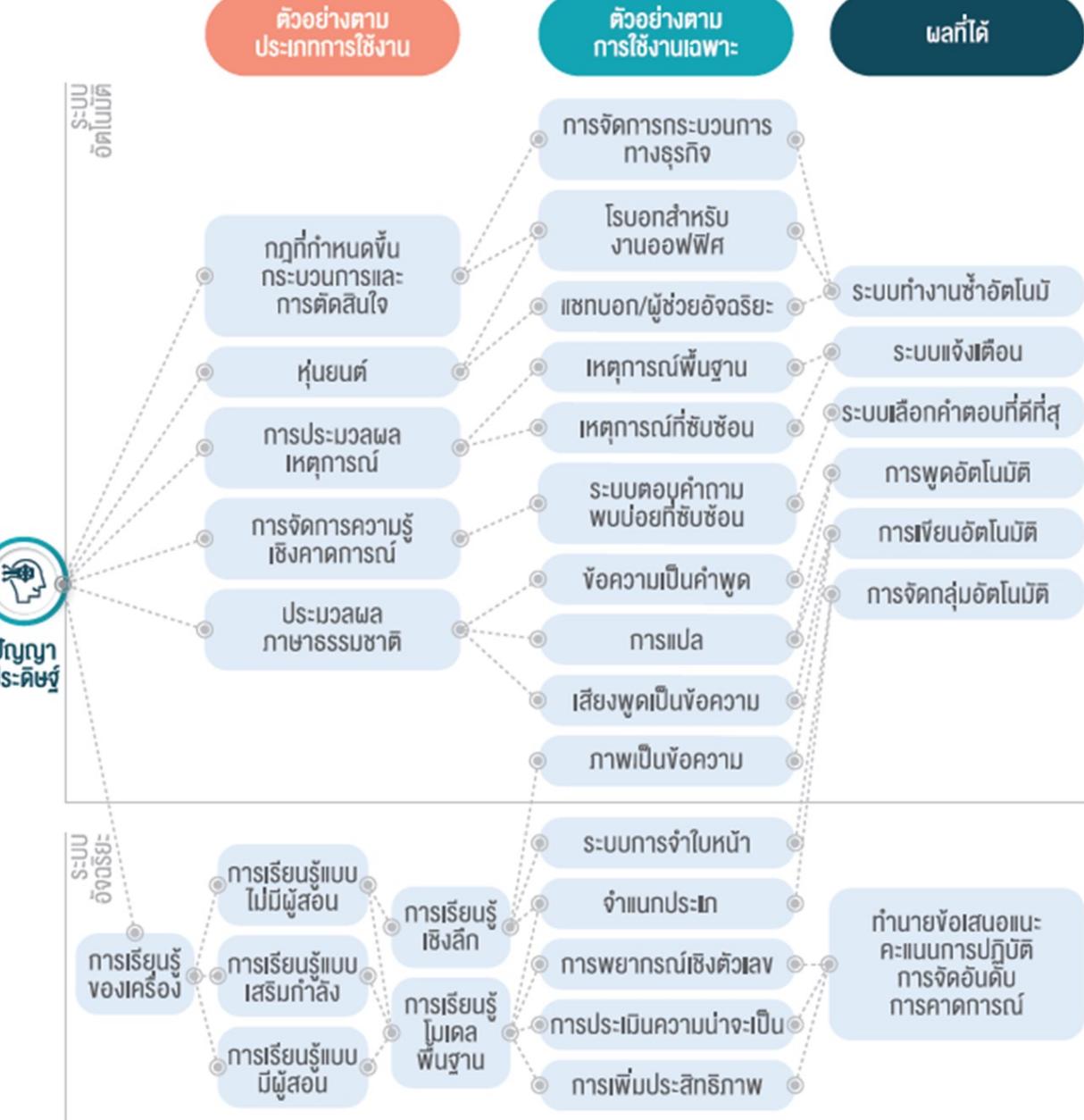
- **AI Scheduling Tools**, such as Google Calendar AI, automate the process of scheduling appointments.
- **AI Writing Assistants** like Grammarly and Notion AI facilitate the quicker creation of emails and documents.



Choosing AI

Choosing AI requires studying the types of AI or algorithms to select the AI that is most appropriate for the problem. For instance, if the task is to develop an application that can differentiate images of herbs, it is essential to use an AI capable of analyzing, distinguishing, or recognizing images—commonly referred to as Computer Vision.

ตัวอย่างการนำ AI มาใช้ตามความสามารถ



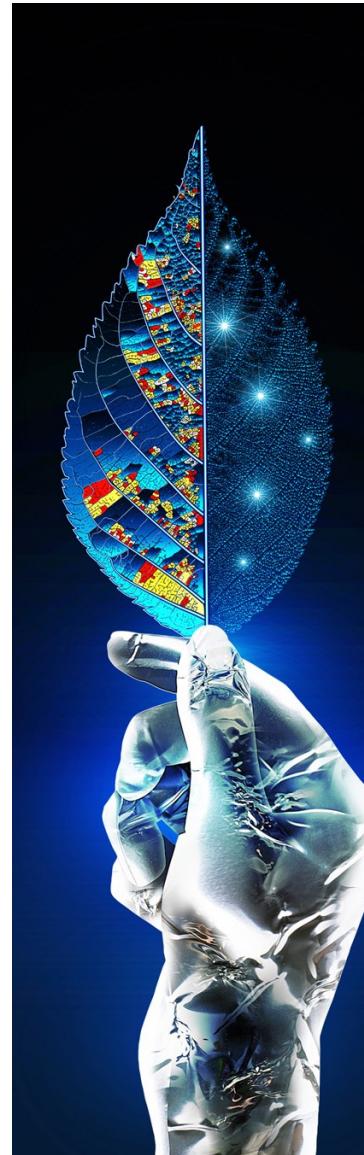
AI-Powered Learning

→ 1. AI Research and Information
AI can assist in quickly and thoroughly finding information, such as by using an AI Chatbot to conduct basic research on a topic of interest.

→ Understanding complex content
AI can assist in clarifying complex concepts, making them easier to understand.

→ 3. Language skills training
If you want to enhance your English communication skills, engage in conversations with AI to practice and allow AI to review your grammar and vocabulary.

→ 4 Helping to find ideas or brainstorm
AI can assist in brainstorming by offering a variety of options.



בשיטות כלכל תרואיף

1. Principles of AI Selection

- Consider the objectives.
- Evaluate the credibility.
- Assess the limitations.

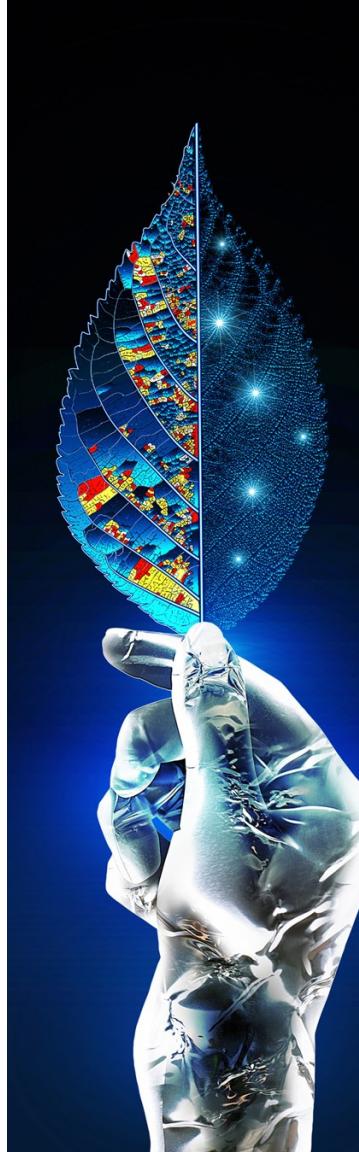
2. Ethical Use Guidelines

- Use AI as a tool to help think and learn, not to work instead.
- Specify when using AI assistance.
- Always verify the accuracy of the data.

3. Digital citizenship

- Do not use AI to generate false information or harmful content.
- Respect the rights and privacy of others. Do not infringe on copyright.
- Share knowledge on the proper use of AI with others.

"Level up with AI,
but don't skip learning."

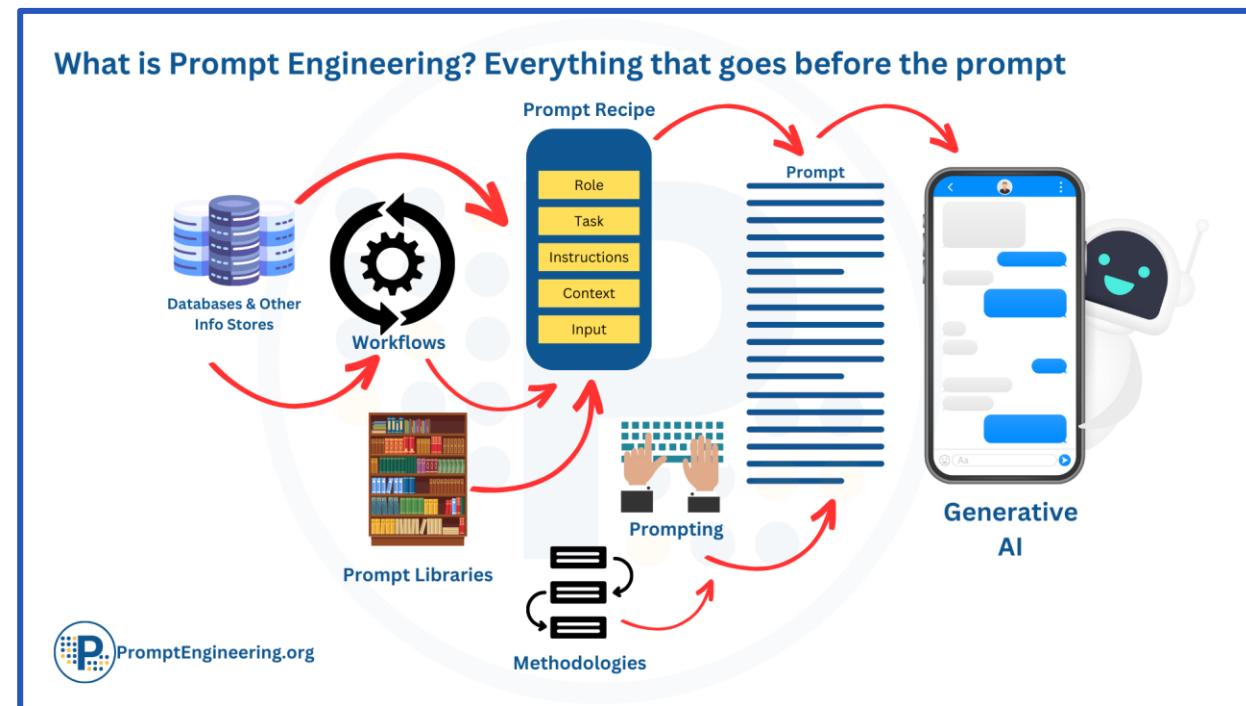


Prompt Engineering

Prompt Engineering is a technique for designing prompts used to communicate with AI to achieve desired results. It emphasizes clarity and the appropriate structuring of prompts. Effective prompt design enhances the accuracy and efficiency of AI when responding to user commands.

Prompt is

- A command or request that we use to communicate with AI.
- It is like telling AI what we want to understand.
- It can be a single command or a series of multi-step commands.



Prompt Engineering

Prompt Engineering Design Principles

1. Clarity and Specificity: Prompt design must clearly and specifically articulate the question or instruction to minimize confusion and enhance the accuracy of the results.

2. Command Structure: Organizing commands in a logical sequence assists AI in comprehending them more effectively. This can be achieved by beginning with the primary command and then adding relevant conditions or explanations.

✗ "Write an article about health."

✓ "Write an article focused on exercise for working individuals, highlighting the benefits of yoga and providing basic techniques for beginners."

"Help create a to-do list for the project and prioritize it."

Prompt Engineering

Prompt Engineering Design Principles

3. Using Context (Context) Appropriate:

Providing context helps AI understand needs more clearly. This involves specifying the situation or offering basic information prior to asking questions.

"As a project manager, what strategies would you suggest for addressing delays within your development team?"

4. Determining the results:

Specify the desired format for the outcomes. To reduce the disparity, consider instructing AI to create a program that is either elegant or presented in paragraphs.

"Please write a description of the IoT system in a 3-paragraph essay format."

Prompt Engineering



Prompt Components

Instruction

Command—Describes what you want the AI to do.

Input Data

The AI requires input data to process.

Context

The AI needs foundational information to better understand the situation or circumstances surrounding the command.

Output Data

The Expected Outcome is a description of the desired outcome that the AI will generate.

Prompt Engineering

Example: Create a travel itinerary.

Prompt: You are a travel planner. I have a budget of 30,000 baht and want to travel to Chiang Mai for 3 days and 2 nights. Please create a travel itinerary that includes accommodation, transportation, and attractions. Make the itinerary a Markdown table.

Instruction

Please create a detailed itinerary that includes options for accommodation, transportation methods, and a list of attractions.

Context

You are a travel planner

Input Data

I have a budget of 30,000 baht and plan to travel to Chiang Mai for 3 days and 2 nights.

Output Data

Make your travel plans using a Markdown table.

Prompt Engineering Basic Techniques

Zero-Shot Prompting:
Letting AI work without
prior examples

Classify the text into positive, neutral or negative:
Text: This dish was the best.
Classification:

Classification: Positive

Classify the text into positive, neutral or negative:
Text: Why you hit me.
Classification:

Classification: Negative

Prompt Engineering Basic Techniques

Few-Shot Prompting:
First, offering some examples will assist the AI in grasping the approach.



Text: Today the weather is fantastic
Classification: :)

Text: I don't like your attitude
Classification: :(

Text: This dish is the best.
Classification:



Classification: :)

בשכל לשלב נוצר או רתוך צטטן קתול שוטף | פל

Chain of Thought Prompting: Encouraging AI to process information in a sequential manner to generate more complex and logical responses.

Example of solving a problem with an AI explaining it step by step: “**Solve this problem step by step:** A man has 10 apples. He gives 3 to his friend and buys 5 more. How many apples does he have?”

Answer from the AI

Step 1: Start with 10 apples.

Step 2: Subtract 3 to get 7 apples.

Step 3: Add 5 to get 12 apples.

Final answer: 12 apples.

Prompt Writing

3 Key Techniques for Writing a Good Prompt



1. Be Detailed & Specific

Please provide detailed and specific instructions.

2. Guide the Model's Thinking Process

Guide the bot to think

3. Experiment & Iterate

Try to improve.

Technique 1: Be Detailed & Specific

AI requires a comprehensive baseline to function effectively. Insufficient data will hinder AI's ability to produce content that fulfills our requirements.

Provide background information about the author. Explain their strengths and experiences. Clearly state our goals.

Describe the tone and writing style you want.

Example of a non-descriptive prompt:

"Please write an email to your professor asking to join the robotics lab."

Example of a descriptive prompt:

Please write an email to your professor asking to join the robotics lab, with the following details:

- I am a grade 11 student with a strong interest in robotics and artificial intelligence.
- I have won a regional robotics competition.
- I have participated in the IPST robotics camp.
- I am seeking practical lab work experience during the school break.
- I am eager to gain experience and learn, even if it means working without compensation. I kindly request that you consider my enthusiasm for learning and my willingness to contribute.

Techniques 2 : Guide the Model's Thinking Process

When asking AI to perform complex tasks, breaking them down into smaller steps can help you achieve more systematic and high-quality results.

Example of a prompt that lacks depth in thinking:

"Generate a list of 10 names for dog toys."

Example prompt with a thought process

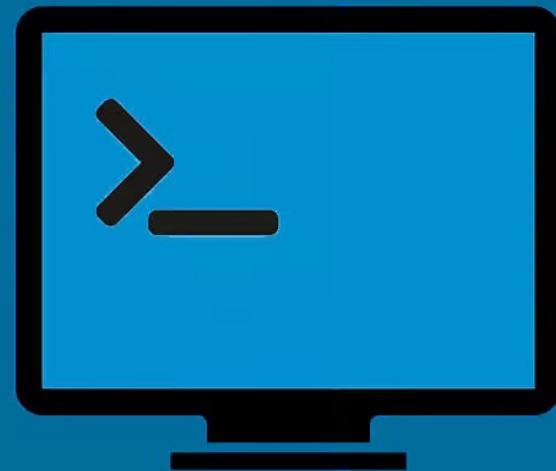
Help me come up with 10 names for dog toys using these steps:

- Find words that mean "dog" in different languages around the world.
- Identify Thai words that sound similar to those words.
- Transform the Thai words into something funny or adorable.

Techniques 3: Experiment & Iterate

Steps for Writing an Effective Prompt

1. Begin with a concise prompt.
2. Review the generated results.
3. Assess why the results do not align with your expectations.
4. Refine the prompt for clarity and specificity.
5. Continue this process until you achieve the desired outcome.



PROMPT ENGINEERING

<https://t2informatik.de/en/smartpedia/prompt-engineering/>

Techniques 3: Experiment & Iterate

It takes practice to write an effective prompt. Don't worry if your first attempt isn't perfect. Begin with simple ideas and enhance them over time.

Round 1:

"Please summarize photosynthesis."

Round 2:

"Please summarize the photosynthesis process in an easy-to-understand way for Grade 4 students."

Round 3:

Summary of the biological and chemical processes in photosynthesis.

- Use simple language but include detailed biology terms.
- Explain difficult terms for high school students in parentheses.
- Please explain the process in no more than five points.
- Give examples to illustrate and compare with things seen in everyday life.

P-R-O-M-P-T

Component	Description	Example
Purpose	What do you want AI to do?	Summarize, explain, translate, generate ideas
Role	Let AI play a role.	Acting as a teacher of the Thai language.
Output	What type of results are you looking for?	Give answers in bullet points.
Mode	Formal/Informal/Student	Make sure to use language that teenagers can easily understand.
Parameters	Number of words/length	No more than 200 words.
Tone	Polite, friendly, academic, etc.	Write in a friendly manner.

Practice

Example: you want to know about inflation.

Component	Things to write
Purpose	Explaining 'Inflation' to First-Year Students.
Role	University economics professor.
Output	Giving answers in bullet points.
Mode	Using simple language
Parameters	No more than 150 words.
Tone	The tone is friendly.

Complete Prompt

"You are a university economics professor. Please explain 'inflation' to first-year students in simple language, in bullet-point format, in no more than 150 words. Maintain a friendly tone throughout."

Practice

write a polite email to your teacher to request a deadline extension

Component	Things to write
Purpose	
Role	
Output	
Mode	
Parameters	
Tone	

Complete Prompt

If AI decides who gets scholarships, who passes exams, or who gets arrested—how much do you think we should trust AI's decisions? Why?"

AI Ethics

AI ethics is a framework that will ensure that the development and use of AI is beneficial to humans, fair, safe, and leaves no one behind, whether they are users or non-users of AI.

The UNESCO Recommendation on “the Ethics of AI,” the first “global framework” agreed upon by 194 member states, proposes four key pillars of AI ethics:

- Humanity and human dignity
- Inclusivity and equality
- Transparency, accountability, and accountability
- Promoting sustainability and peaceful coexistence.

AI Ethics

National Science and Technology Development Agency (NSTDA)

1. Privacy
2. Security and safety
3. Reliability
4. Fairness and non-discrimination
5. Transparency and explainability
6. Accountability
7. Human oversight and human agency

פָּהַרְאֹר וִיפָּחָד

"AI pretending to follow human instructions may sound like science fiction, but it's a reality that's happening. This challenge requires us to rethink the design, training, and management of AI.

By understanding this issue and addressing the associated risks, we can develop AI technologies that are not only intelligent but also ethical and aligned with human values."

Ethical Issues in AI

The AI "Black Box"
Problem

Bias in data and
algorithms

Safety and
Responsibility

Privacy and
consent

Methodology

סיפוח ל侃ע צָכְתָק לַטְשׁ פֶּאֱפָלְשָׁלָכְכָוּ כְשָׁטָפְלָפְטָפְעָזָה



Black box

AI, even if it gives accurate results, cannot clearly explain "how the AI thinks to give that answer."

Bias

AI bias is caused by being trained with inaccurate or incomplete data, and AI trainers sometimes feed their own biases into machine learning, resulting in biased or unfair decisions for the algorithm. When the AI outputs results, the results are not neutral and biased.

Hallucination

A scenario where AI, particularly Large Language Models (LLMs), generates outputs that are irrelevant, incorrect, illogical, or bizarre, yet these results seem 'reasonable' and 'reliable' to the user, making it difficult to determine whether the information provided by the AI is accurate or if the system is '**hallucinating**'.

סיפוח ל-קְפָע צַכְטָה לְטַש פֶּאֱפָלְשָׁלָכְקְפָוּ כְשַׁטְפָּלְפָטְפָעָז



Bias

Algorithm bias: Bias caused by problems within the algorithm, such as a set of calculations that are incorrect, causing the machine learning to recognize errors and process results in a biased manner.

Sample bias: Bias caused by the sample data used to teach the AI is not broad enough or inclusive, causing the AI to not see all of what we want it to learn.

Prejudice bias: Bias caused by existing false beliefs.

The Dark Side of AI: Biases and Hidden Risks



Bias

- Measurement bias:** Bias caused by the measurement and evaluation methods used to teach AI may not be completely accurate.
- Exclusion bias:** Bias caused by the developer's ignorance of the use of data to teach AI.
- Selection bias:** Bias caused by the data used for training not being broad enough, resulting in inaccurate and incorrect results.
- Recall bias:** Bias caused by different opinions or understandings.

The Dark Side of AI: Biases and Hidden Risks

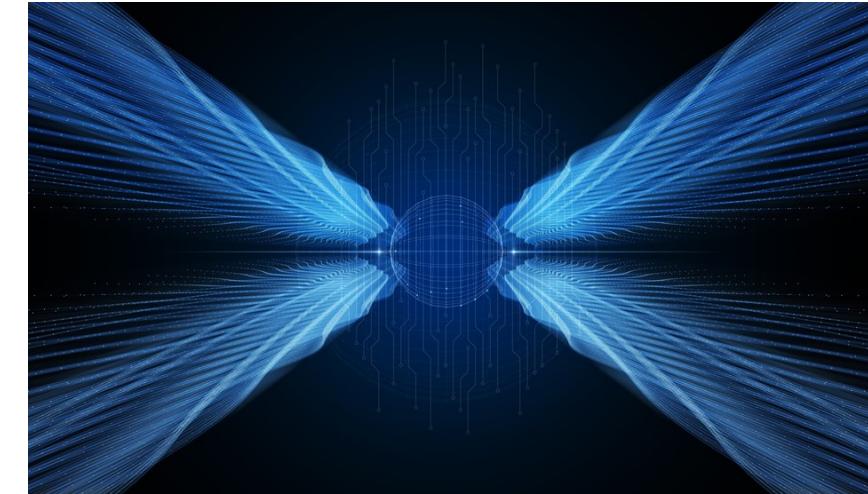


Bias

Case 1: Broward County, Florida's sentencing system identifies African-American defendants as "high risk," more than twice as likely as white defendants.

Case 2: Amazon's hiring screening system found that it tended to favor men over women when they had similar overall abilities. The AI model was trained on 10 years of internal hiring data, and Amazon eventually stopped using the tool altogether.

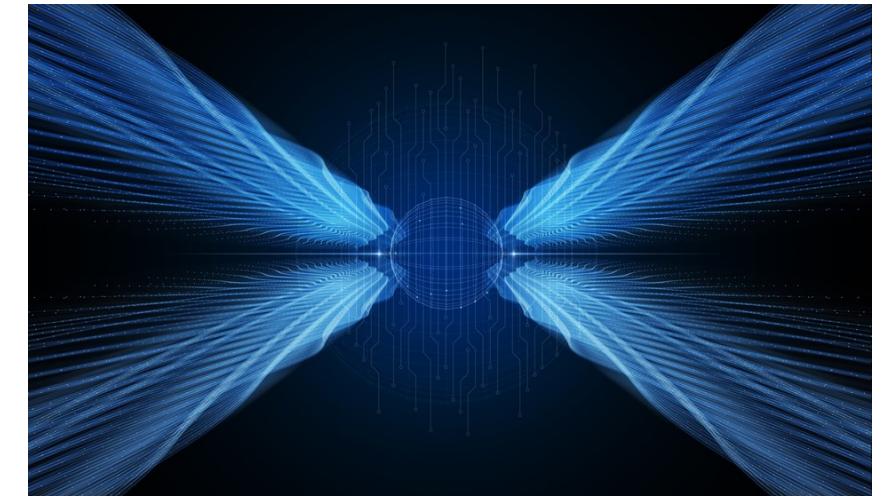
סיפות ל��ע צדוק לוטש פצל של כף או כשות פלפטןץ



Hallucination

Case 1: Steven Schwartz, an American lawyer with over 30 years of experience in litigation, used ChatGPT to find information to sue Avianca Airlines. However, the results indicated that the information that the AI provided to support the lawsuit was fake, including reference documents and judgments, and ultimately, the court ordered a fine and dismissed the case.

סימפת ל קע צטק לוט פ צפל של כקיי כשט פלפטנע



Hallucination

Case 2: Experiment with ChatGPT to recommend 50 medical research topics. The research topics must meet the FINER criteria, which includes instructing the AI to attempt writing a detailed research plan that incorporates references and a DOI code.

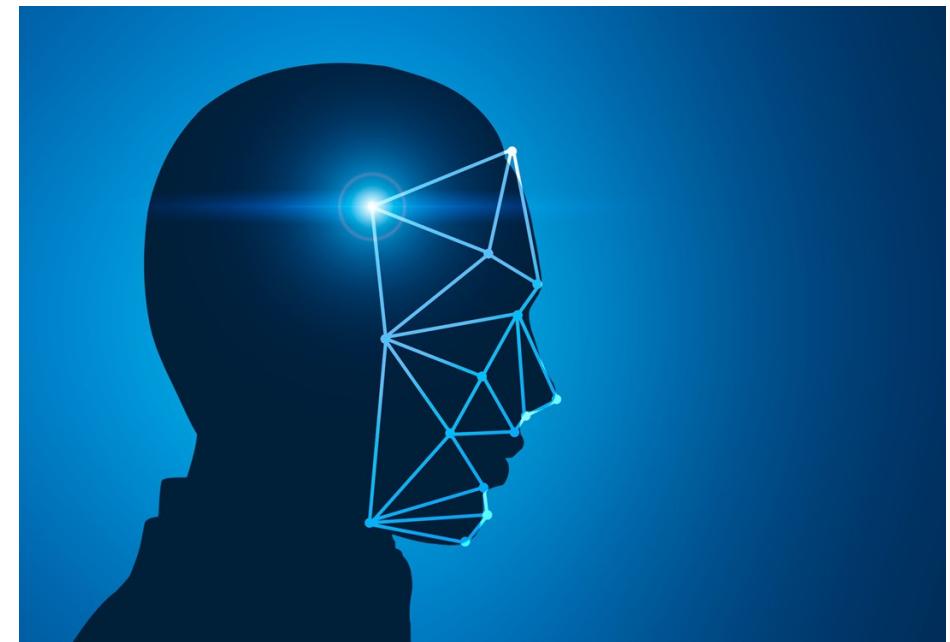
The test results indicate that the data generated by ChatGPT is reliable, and the system can generate 50 research topics according to the FINER criteria. However, some references used by ChatGPT lack DOI codes, and even when DOI codes are present, researchers sometimes cannot locate the original academic papers.

Ethical Issues in AI

Case studies related to AI ethics



Face recognition



Deep fake

Ethical Issues in AI

Case studies related to AI ethics



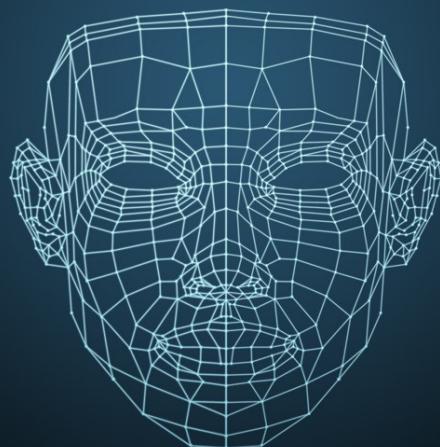
A face recognition system

is one that detects human faces and classifies them for the purpose of design. In general, a face recognition system consists of two steps:

- Face detection
- Face recognition

Ethical Issues in AI

Case studies related to AI ethics



Deepfake refers to the use of artificial intelligence to synthesize a person's image, voice, and motion, allowing them to move and speak in ways dictated by the creator, even if that person has never actually done or said those things in reality.

Ethical Use of AI

Some data obtained from AI may be copyrighted, discriminatory, or biased. When using AI, we must consider the ethical implications to avoid causing harm to anyone, including refraining from using it for corrupt purposes or spreading false information that could lead to misunderstandings.



וַיְמָת לִפְשׁוֹן אֶלְעָזָר

Precautions for using AI

1. Privacy and personal data

AI often requires a large amount of data to process, which can lead to the leakage of users' personal data.

2. The security and reliability of the system

Although AI is accurate, it can still make mistakes, such as misdiagnosing diseases or making incorrect recommendations.



Ethical Use of AI

Precautions for using AI

3. Cybersecurity

AI could be the target of cyberattacks, such as hacking to steal data or tricking AI into making mistakes (Adversarial Attacks).

4. Labor Impact

AI could cause some jobs to disappear or reduce the demand for labor.



Ethical Use of AI

Precautions for using AI

5. Misuse of AI

Negative uses of AI, such as the creation of fake news or deepfakes, can negatively impact society and trust.

6. Over-reliance on AI

The use of AI in critical decision-making, such as in medicine or finance, can pose risks if not properly monitored.



Ethical Use of AI

Precautions for using AI

7. Bias in algorithms

AI may reflect biases inherent in the data used to train it, leading to unfair decisions, such as racial, gender, or social bias.

8. Ethical issues

Some uses of AI, such as military killer robots or AI that collects large amounts of personal data, may raise ethical questions.



Spot & Check AI: Know Before You Believe

AI-powered data validation

→ Knowledge

Understanding AI, its limitations, how it learns from data, and how it responds based on its training.

→ Fact-checking

- Cross-check from multiple sources.
- Check references / Check dates.
- Fact-checking tools.

→ Spotting AI Responses

- Unusually specific information.
- Referring to unclear or nonexistent sources.
- Information that contradicts our basic knowledge.

"AI is a powerful tool – but wisdom lies in the hands of the user."





Know Before You Believe

Evaluating AI performance helps determine whether the information provided by AI is accurate and reliable. Because AI learns from the data that is fed to it, if it receives incorrect data, it will display the results as false or untrue data.

Therefore, before using or applying data, it must always be evaluated, checked, or searched for correctness.

כש ת פָאַרְט ? חֵי קָטוּבָתָע וַיִּפְאַת פָל | פָאַרְקָטוּבָאָר

- Labor market and career changes
- Education and learning revolutions
- Changing communication patterns and interpersonal relationships
- Privacy and security implications
- Digital access and inequality

Risk : AI Impact

Quoine V B2C2: Applying Conventional Legal Principles To The Brave New World Of High Frequency Cryptocurrency Trading Through Computer Algorithms

February 2020, <https://wst.com.sg/quoine-v-b2c2-applying-conventional-legal-principles-to-the-brave-new-world-of-high-frequency-cryptocurrency-trading-through-computer-algorithms/>

AI bot capable of insider trading and lying, say researchers

November 2023, <https://www.bbc.com/news/technology-67302788>

Air Canada chatbot promised a discount. Now the airline has to pay it.

Air Canada argued the chatbot was a separate legal entity 'responsible for its own actions,' a Canadian tribunal said

February 2024, <https://www.washingtonpost.com/travel/2024/02/18/air-canada-airline-chatbot-ruling/>

A Hacker Stole OpenAI Secrets, Raising Fears That China Could, Too

July 2024, <https://www.nytimes.com/2024/07/04/technology/openai-hack.html>

Warnings AI tools used by government on UK public are 'racist and biased'

July 2024, <https://www.nytimes.com/2024/07/04/technology/openai-hack.html>

Slack AI can be tricked into leaking data from private channels via prompt injection

August 2024, https://www.theregister.com/2024/08/21/slack_ai_prompt_injection/



Inside the deepfake porn crisis engulfing Korean schools

September 2024, <https://www.bbc.com/news/articles/cpd1pj9zn9go>

Two Australian men charged in global investigation into AI-made child abuse images

March 2025, <https://www.theguardian.com/australia-news/2025/mar/01/two-australian-men-charged-in-global-investigation-ai-made-child-abuse-images-ntwnfb>

More than 110 child sextortion attempts reported each month to UK police forces

March 2025, <https://www.bbc.com/news/articles/cpd1pj9zn9go>

AI cloning of celebrity voices outpacing the law, experts warn

David Attenborough among famous people whose voices have been exploited by fraudsters

November 2024,
<https://www.bbc.com/news/articles/cpd1pj9zn9go>

An AI companion suggested he kill his parents. Now his mom is suing.

A new Texas lawsuit against Character.ai, alleging its chatbots poisoned a son against his family, is part of a push to increase oversight of AI companions.

December 2024,
<https://www.npr.org/2024/12/10/nx-s1-5222574/kids-character-ai-lawsuit>



Italian opposition file complaint over far-right party's use of 'racist' AI images

April 2025, <https://www.bbc.com/news/articles/cpd1pj9zn9go>

Responsibility for AI Failures

"Who is responsible when AI fails?"



Responsibility for AI Failures

"Who is responsible when AI fails?"

The **AI** itself?

Users who don't read the full terms of agreement?

Or

Untransparent "**developers**"?

Responsibility for AI Failures

"Who is responsible when AI fails?"

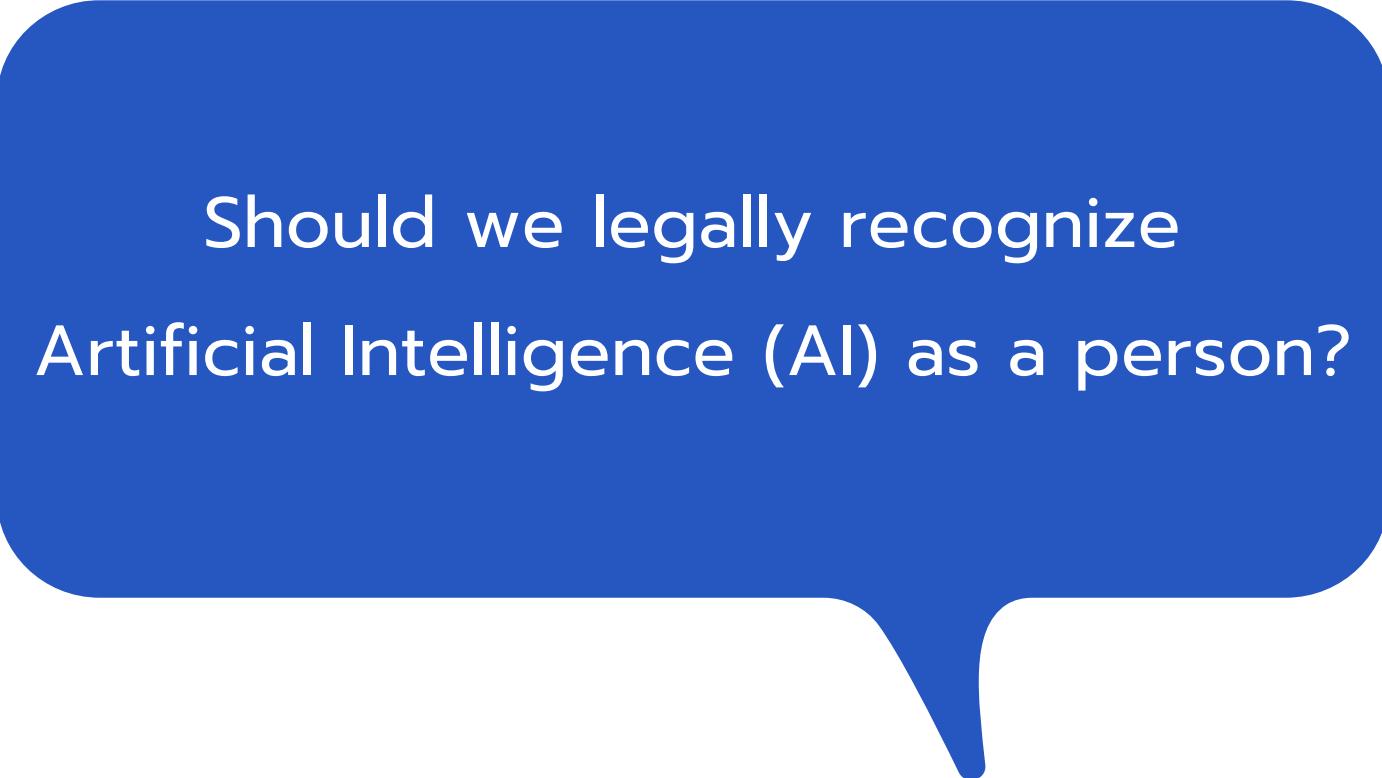
Under Thai law, individuals harmed by AI's actions cannot sue AI directly, as AI is not recognized as a person (i.e., it lacks the status or capacity to be a legal entity, such as a natural person or a human being with a mind and biological reality who is born and dies naturally). Consequently, AI is not regarded as a legal entity under the law.

Responsibility for AI Failures

"Who is responsible when AI fails?"



In October 2017, Sophia was granted citizenship in Saudi Arabia, a status now referred to as an "electronic person."



Should we legally recognize
Artificial Intelligence (AI) as a person?

Responsibility for AI Failures

In 2019, a Tesla Model S driver ran a red light and collided with a Honda Civic at an intersection in California.

The crash resulted in the deaths of two passengers in the Honda Civic, while the driver of the Tesla and a passenger escaped without serious injuries.



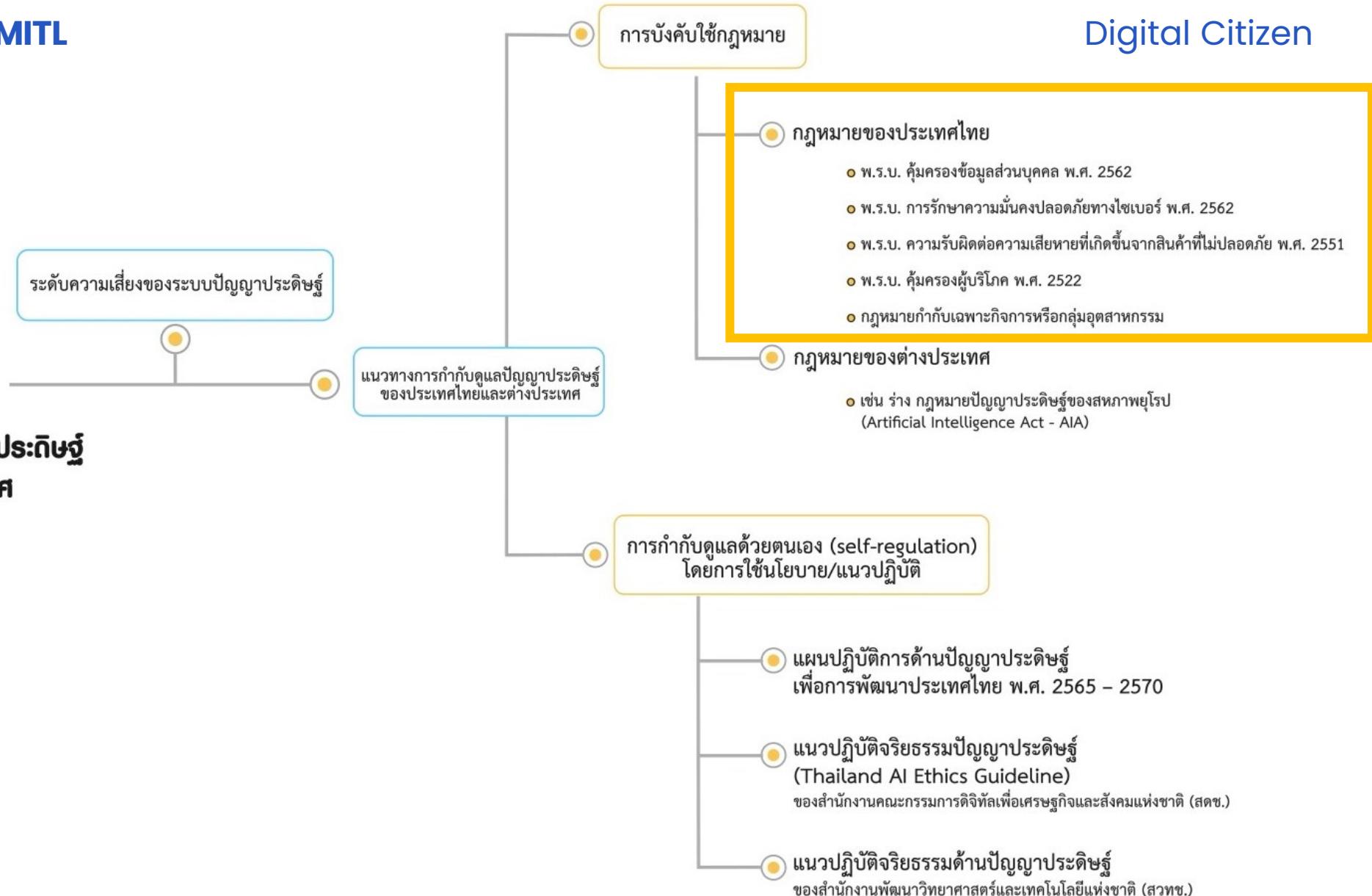
כָּתָא אֲזַמְּפֵשׁ תּוֹפֵל פֶּלְכָּתָנָשׁ וַיִּפְּ

The Boeing 737 Max commercial passenger plane crash that led to the deaths of 346 individuals.





แนวทางการกำกับดูแลระบบปัญญาประดิษฐ์ ของประเทศไทยและต่างประเทศ



ความเสี่ยง		ex-ante	ex-post
ประเด็นที่มีกฎหมายเดิน มาแล้ว	Malicious Purpose	<p>ไม่ปรากฏชัดเจน แต่การกำหนดหน้าที่ในชั้นนี้ อาจไม่เป็นธรรมแก่ผู้พัฒนา และอาจไม่สอดรับ ความหลากหลายของเชื้อรา</p>	ประมวลกฎหมายอาญา พรบ. คอมพิวเตอร์ฯ กฎหมายว่าด้วยลงเมิด
	Dis – Misinformation		รัฐธรรมบุญ พรบ. ความเท่าเทียมระหว่างเพศ พรบ. ส่งเสริมและพัฒนาคุณภาพชีวิตคนพิการ พรบ. คุ้มครองข้อมูลส่วนบุคคล พ.ศ. 2562*
	Toxic Contents		กฎหมายว่าด้วยกรรพย์สินทางปัญญา
	Discrimination		พรบ. แข่งขันทางการค้า
	IP Infringement		พรบ. คุ้มครองข้อมูลส่วนบุคคล พ.ศ. 2562*
	Antitrust		พรบ. ความมั่นคงปลอดภัยไซเบอร์ พ.ศ. 2562*
	Privacy		
ประเด็นเฉพาะ	Cybersecurity	<p>กฎหมายกำกับดูแลกิจการ ไม่ได้ปรากฏชัดเจนนัก</p>	สิ่งเหล่านี้ไม่ได้เป็นความติดตาม แต่อาจเป็นเหตุให้นำไปสู่ความเสียหาย หรือก่อความรุนแรง ที่จะกลายเป็นความติดตามกฎหมายที่มืออยู่
	Transparency		
	Adaptivity / Self-learning		
	Interdependence		
	Autonomous		
เรื่องโดยอ่อน	Robustness	<p>ค่อนข้างสัมพักรกับนิติบัตรายระดับประเทศ</p>	รัฐธรรมบุญ
	การกระทำที่กระทบกับคุณค่าพื้นฐานของสังคม		ไม่ปรากฏชัด
	การพึ่งพา AI มากเกินไป		พรบ. คุ้มครองแรงงาน
	การจ้างงานที่ไม่เท่าเทียมหรือไม่คุณภาพ		
อันตรายต่อสิ่งแวดล้อม		พรบ. ส่งเสริมและรักษาคุณภาพสิ่งแวดล้อมแห่งชาติ	

กฎหมายกำกับดูแลการพัฒนาและประยุกต์ใช้

2562		• เสนอร่าง AI Act
2564		<ul style="list-style-type: none"> • Provisions on the Management of Algorithmic Recommendations in Internet Information Services
2565		<ul style="list-style-type: none"> • ร่าง Algorithmic Accountability • ร่าง Artificial Intelligence and Data Act • Provisions on the Administration of Deep Synthesis Internet Information Services • ร่าง พร.ก. การประกอบธุรกิจการที่ใช้งานระบบปัญญาประดิษฐ์
2566		<ul style="list-style-type: none"> • Act Promoting the development and regulation of AI • รายงาน framework for the regulation of the development and use of AI • ร่าง Provides for the development, promotion and ethical-responsible use of AI based on human-centered principles (PL-2338-2023) • ร่าง Deepfake Accountability • Interim Measures for the Management of GAI • ร่าง AI Bill
2567		<ul style="list-style-type: none"> • Colorado AI Act • ร่าง AI Law ที่เสนอโดยนักวิชาการ • ร่าง Bill on Development and Management of AI • ประกาศใช้ AI Act (Unacceptable-risk 2025/High-risk 2027)
2568		<ul style="list-style-type: none"> • Basic Act on the Development of AI and the Establishment of Trust
		<ul style="list-style-type: none"> • AB 2013 – GAI Training Data Transparency (2569) • AB 1831 – Child Sexual Abuse in AI-Generated Content • SB 981 – Sexually Explicit Digital Identity Theft • AB 1836 – Training data from deceased person • AB 2655/AB 2839/AB 2355 – Political Ads • AB 3030 – AI Disclaimers in Health Care Communications

กฎหมายเฉพาะเรื่อง

2567		ร่าง Non-Consensual Sexually Explicit Images and Videos (Offences) Bill
		ร่างเกี่ยวกับการเพิ่มโทษเกี่ยวกับ Deepfakes
2568		<ul style="list-style-type: none"> AB 2885 (กำหนดนิยามกลางของ AI) SB 926 – Non-Consensual “Deepfake” Pornography AB 2876/ SB 1288 – AI & Media Literacy in Education

กฎหมายเกี่ยวกับแพ่งและพาณิชย์

2563		Court of Appeal ได้วินิจฉัยคดี Quoine v. B2C2
2564		Road Traffic Act (StVG) (เฉพาะ autonomous car)
2565		<ul style="list-style-type: none"> ร่าง AI Liability Directive ร่าง Product Liability Directive
2566		ร่าง PL-2338-2023
2567		UNCITRAL Model Law on Automated Contracting
2568		AB 2602 – Forced Digital Replicas

กฎหมายเกี่ยวกับการส่งเสริม

2563		AI in Governance Act และ National AI Initiative Act
2565		CHIPS and Science Act
		Regulations for the Promotion of the Artificial Intelligence Industry in Shenzhen Special Economic Zone
2566		ร่าง พรบ. ว่าด้วยการส่งเสริมและสนับสนุนนวัตกรรมปัญญาประดิษฐ์

กฎหมายเกี่ยวกับลิขสิทธิ์

2567		<ul style="list-style-type: none"> ร่าง GAI Copyright Disclosure Act แก้ไขปรับปรุงร่าง AI Act โดยเพิ่ม General Purpose AI
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- SB 1120 – Human Oversight in Medical Utilization Decisions
- SB 1223 – Neural Data Privacy under the CCPA
- SB 942 – Transparency in AI-generated content
- AB 2905 – Voice Bot Disclosure
- SB 896 – measures for State Agencies

 Bangkok Bank





ไม่ว่าเราจะกำลังศึกษาในสาขาใดหรือประกอบอาชีพอะไร
**เราควรถามตัวเองว่า จะใช้ AI อย่างไร
ให้งานของเราดีขึ้น**

Jensen Huang

ผู้ร่วมก่อตั้งและ CEO ของบริษัท NVIDIA