

Essentials of Generative AI, Prompt Engineering, and ChatGPT



Introduction to AI



Agenda

Let's pace with grace and keep things breezy!



Hey Siri

Who here has chatted with Siri today?
Maybe asked her about the weather or to play your favorite song?
Or perhaps you've sought her wisdom sometime this week?
Ever wondered how she knows so much?

Scenario

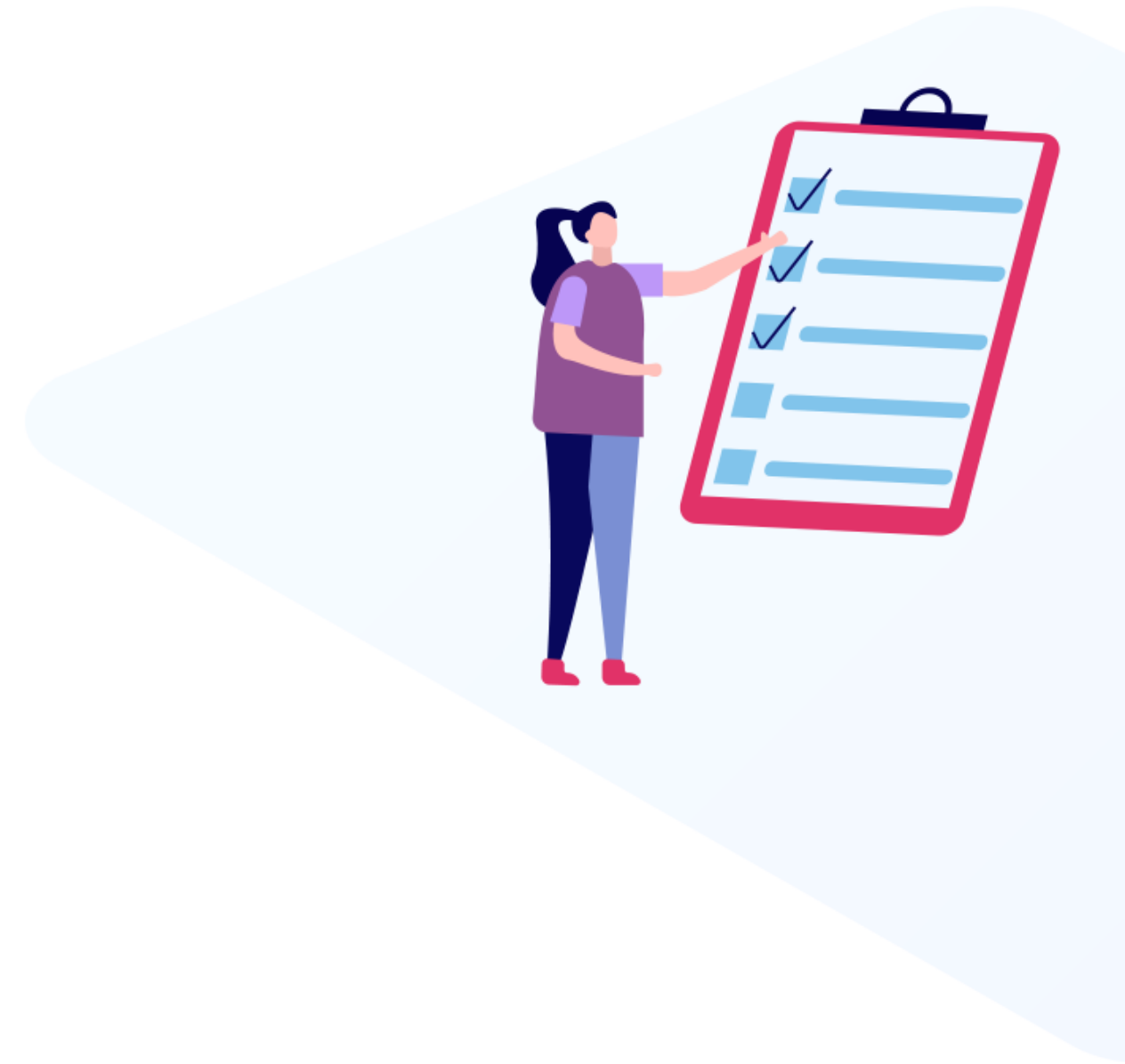
FashionFusion is a leading e-commerce platform, specializing in apparel and accessories. Over the years, they've accumulated millions of users and an extensive product range. However, with increasing competition and overwhelming product choices, they noticed a problem; customers often abandoned their carts, feeling overwhelmed or unsure about their selections.



Learning Objectives

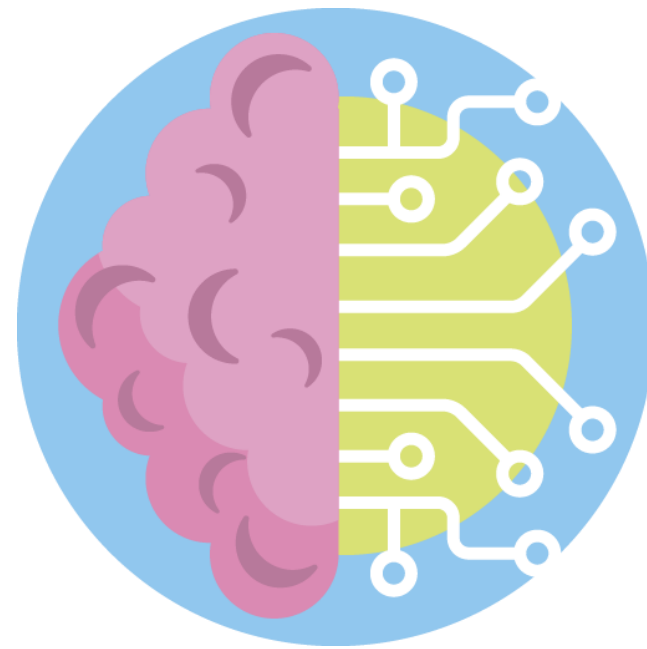
By the end of this lesson, you will be able to:

- 👁 Define the concept of artificial intelligence
- 👁 Understand the different levels of AI
- 👁 Understand different machine learning algorithms and their applications
- 👁 Describe the functionalities and capabilities of AI



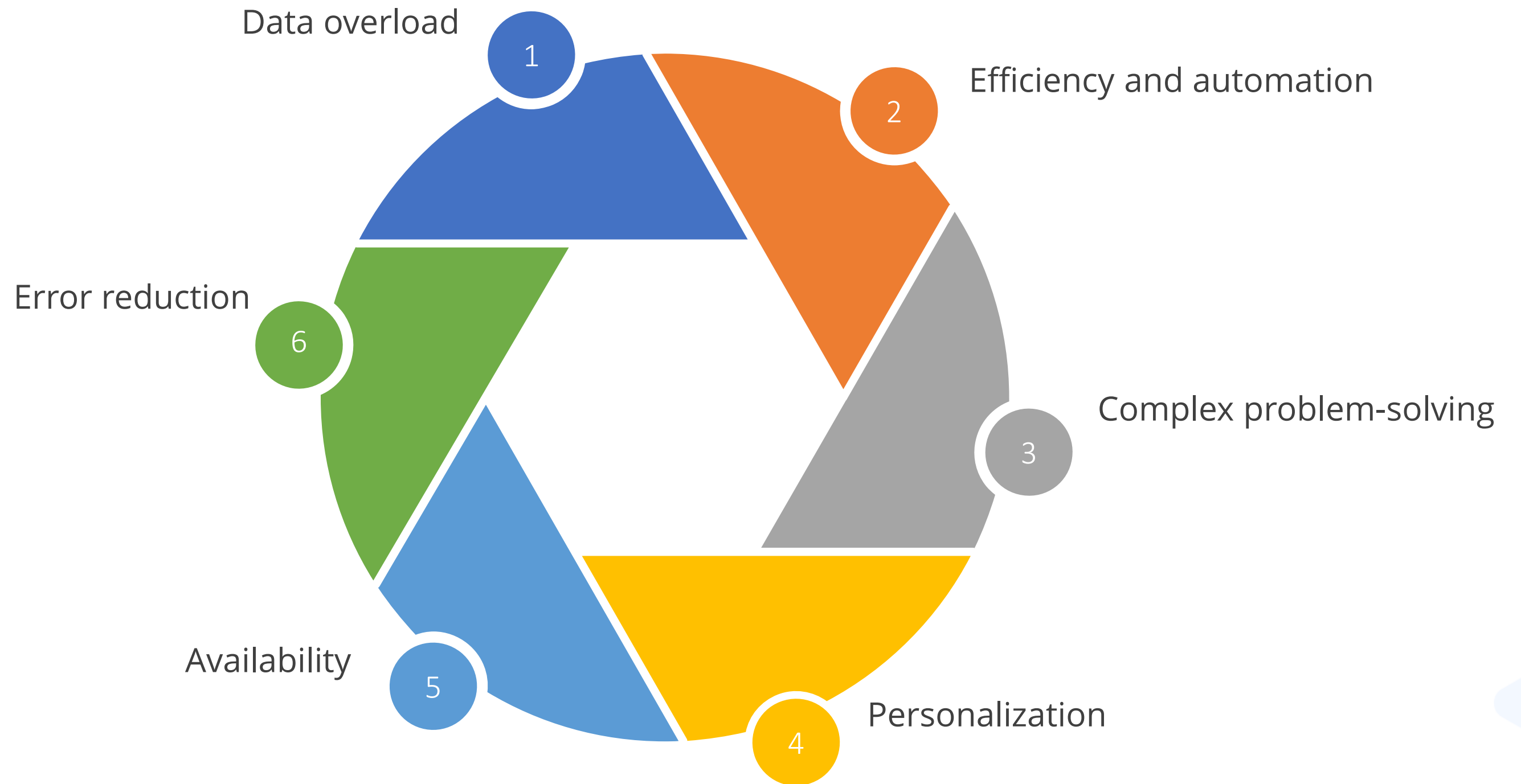
What Is AI?

Artificial Intelligence is the ability of a machine to mimic human intelligence.



ARTIFICIAL
INTELLIGENCE

Need for AI



Sectors Integrating AI

Let's examine the industries that are integrating AI for specific purpose.

Healthcare

Diagnostics
Treatment personalization

Finance

Fraud detection
Loan defaults

Retail

Personalized shopping
Inventory management

Automotive

Autonomous vehicles

Sectors Integrating AI

Let's examine the industries that are integrating AI for specific purposes.

Manufacturing

Quality control
Predictive maintenance

Real estate

Price prediction
Virtual property tours

Entertainment

Content recommendation

Activity: AI vs. Human Intelligence: The Great Debate

Are machines truly better? Or do humans have an edge?



Let's Ponder



Which of the following tools do you recognize as AI?

1. Intercom
2. Alexa
3. IBM Watson
4. Adobe Photoshop
5. Microsoft PowerPoint

Levels of AI

Narrow AI

Excels in specific tasks but lacks general intelligence



NAI

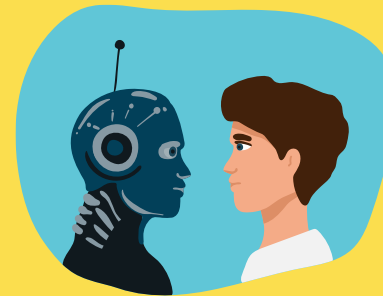
Artificial General Intelligence

Performs any human task, displaying human-like intelligence and adaptability

AGI



SAI



Super AI

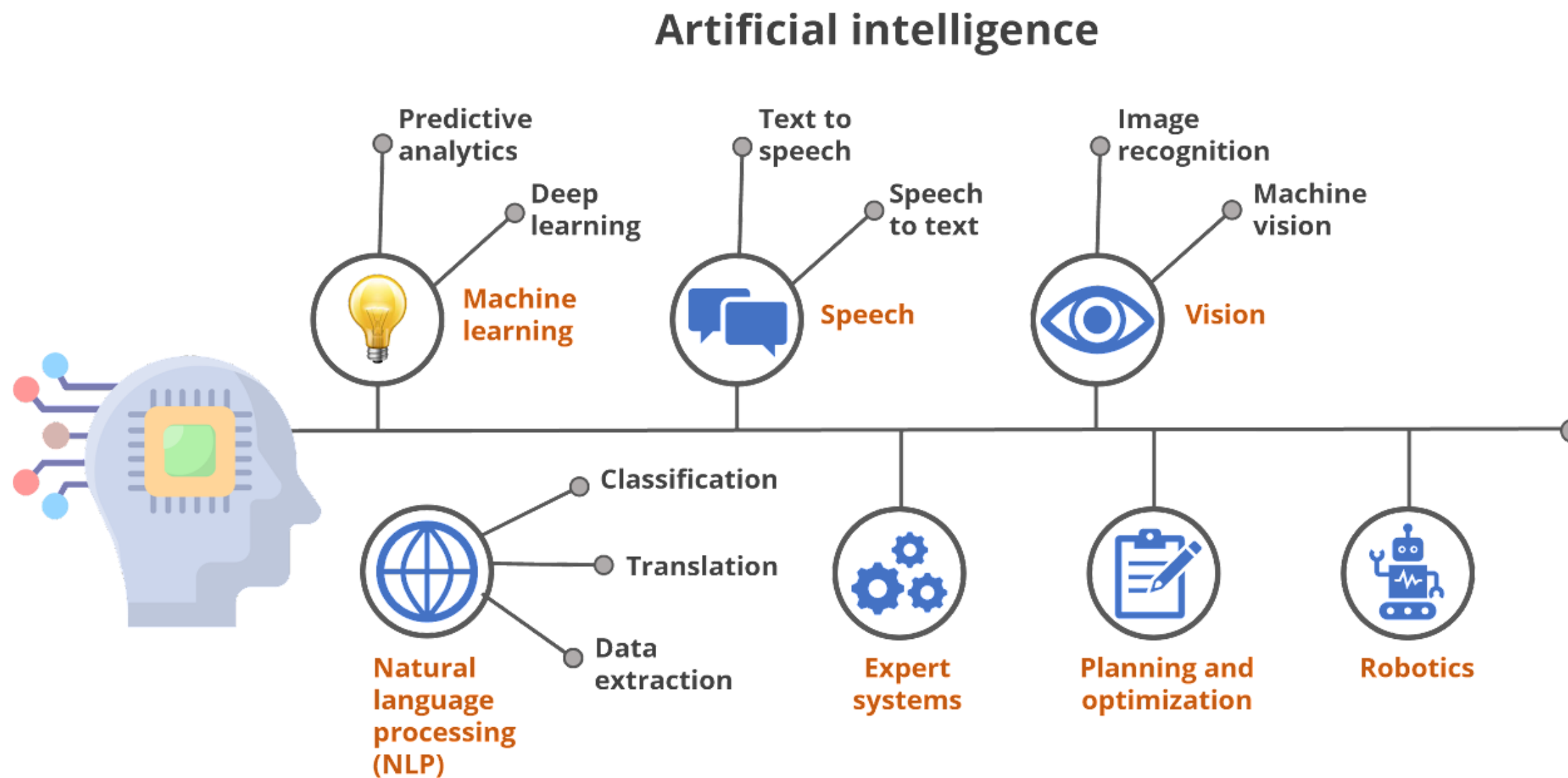
Surpasses humans in many aspects, raising ethical and societal concerns



Types of Artificial Intelligence

Types of Artificial Intelligence

Diving into the expansive realm of artificial intelligence, let's explore its several distinct categories:



Machine Learning

Machine learning enables computer systems to learn from data and improve from experience, allowing them to perform human-like tasks.



- It uncovers hidden relationships or patterns within raw data.
- It interrelates expected outcomes with actions or choices to formulate a strategy.

Depending on the context, it uses supervised or unsupervised algorithms to unearth unknown facts.

Predictive Analytics

Predictive analytics uses historical data to make accurate predictions about future outcomes, enabling data-driven decision-making.



By analyzing large datasets, predictive AI identifies trends, correlations, and patterns. This offers a deeper understanding of factors that may affect future results.

Predictive Analytics

Predictive analytics identifies potential opportunities and risks by foreseeing future scenarios.

This allows businesses and organizations to plan strategically, reducing risks and seizing opportunities.

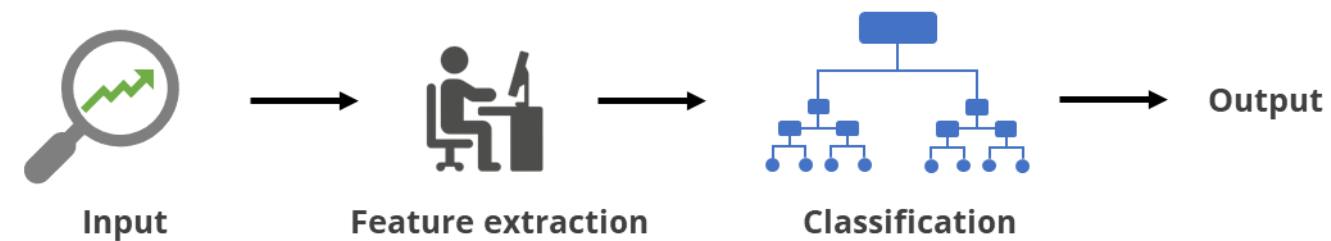
This finds applications in various fields, such as finance, marketing, healthcare, supply chain management, and risk assessment.

This algorithm adjusts and learns from new data, refining its models over time for increasingly precise predictions.

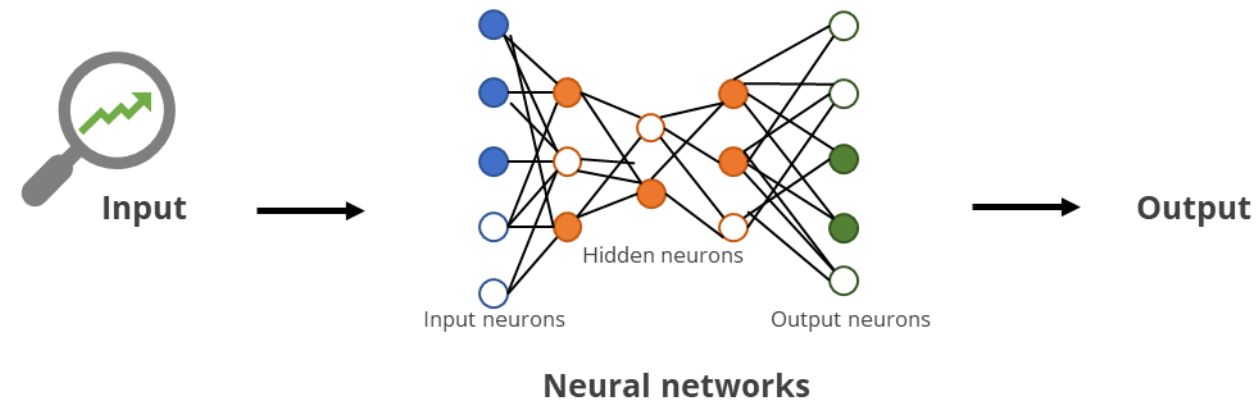
Deep Learning

Deep learning is a subfield of machine learning that focuses on algorithms inspired by the structure and function of the human brain, called artificial neural networks.

Machine learning

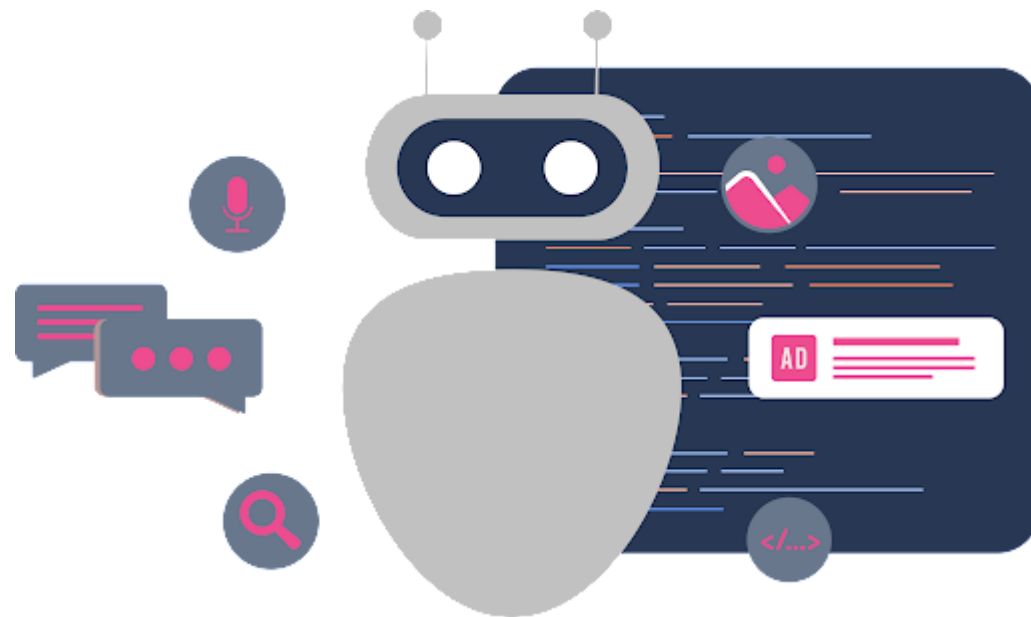


Deep learning



Natural Language Processing (NLP)

Natural language processing comprehends and interprets meanings in written and spoken language.



It automates text analysis to glean insights.

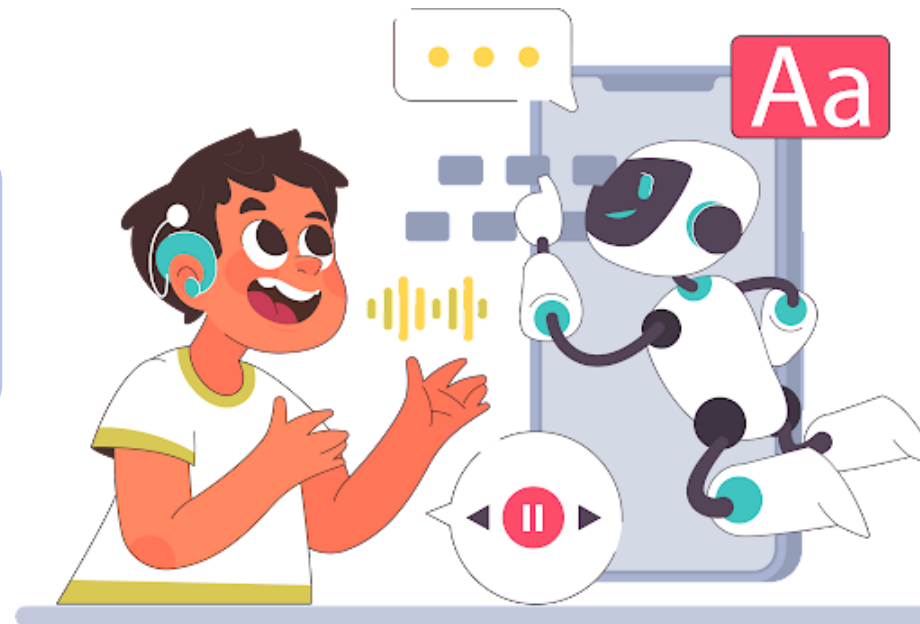
It extracts meaning from an extensive range of human-interpreted languages.

NLP allows computers to communicate with humans using natural language. Applications of NLP include virtual assistants and chatbots.

Speech Recognition

Speech recognition analyzes and interprets human speech in real-time.

It applies AI algorithms to identify the context and meaning of spoken words.

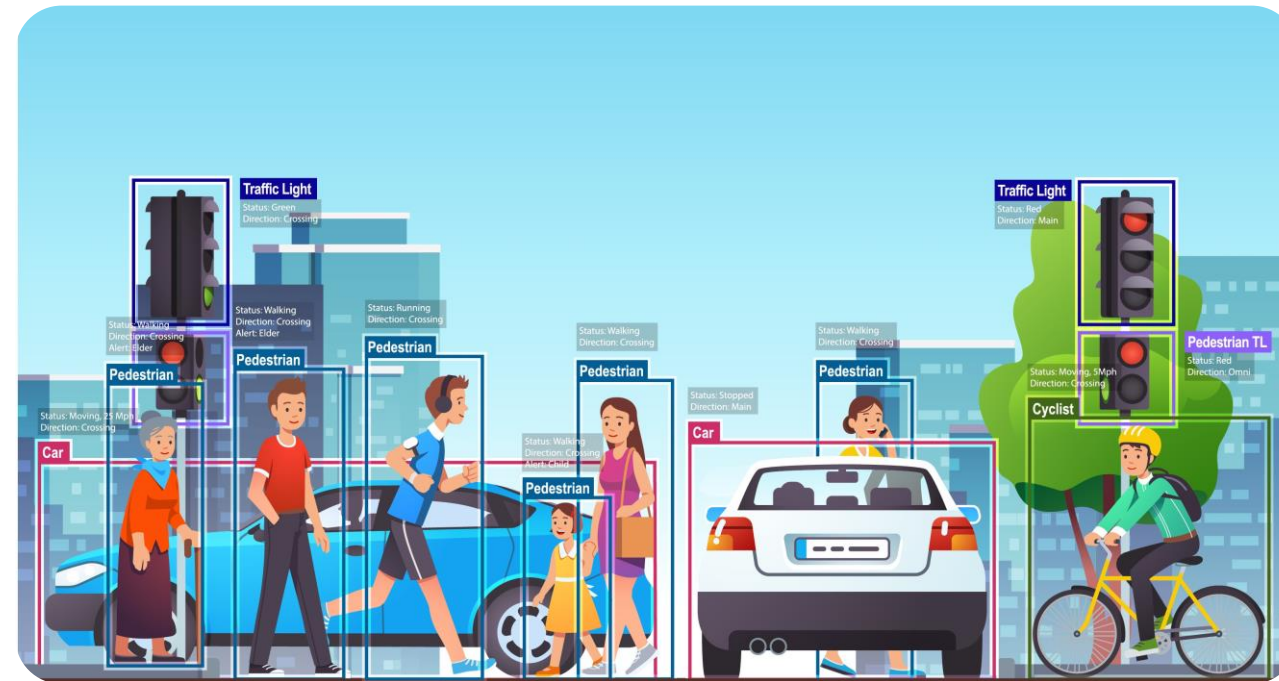


It understands spoken words and takes appropriate actions.

Speech recognition AI distinguishes between different languages using natural language processing.

Computer Vision

Computer vision utilizes image processing and deep learning to identify objects within an image.



- It empowers machines to understand and analyze image contents.
- It analyzes and extracts information from video streams in real time.
- It enhances the accuracy of AI systems by precisely recognizing objects.

Planning and Optimization

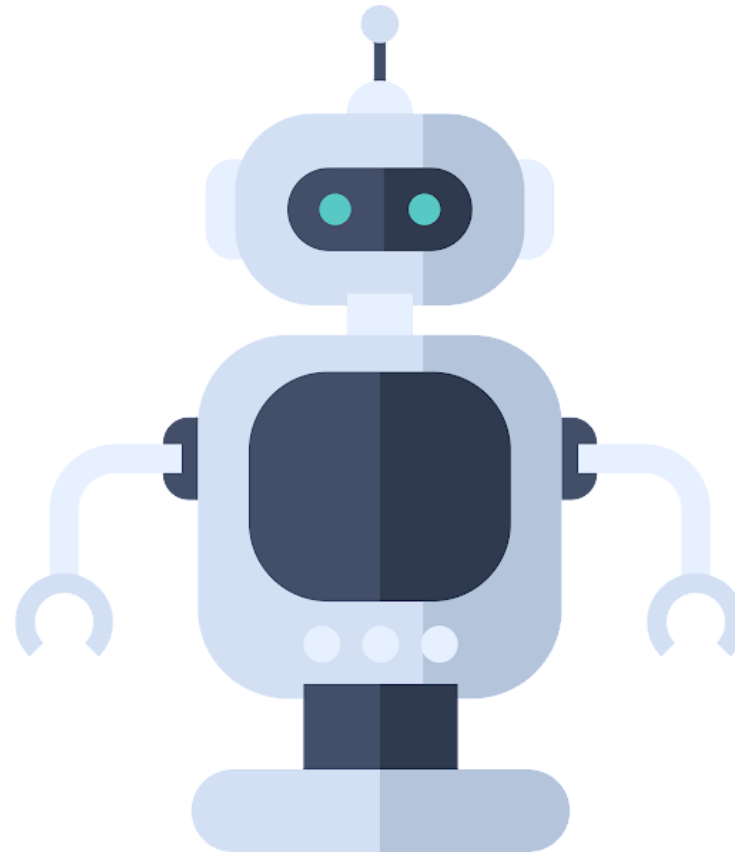
Planning and optimization leverages its processing power to efficiently solve complex problems.



- It assesses the impact of various decisions on the outcome.
- It analyzes and predicts the cost-benefit of differing decisions.
- It uses algorithms to optimize processes for the best possible outcome.

Robotics

Robotics creates machines that can move autonomously, controlled by AI algorithms.



It programs robots to perform both simple and complex tasks.

It enables robots to interact with their environment through sensors.

It uses AI and machine learning to enhance the precision of robots.



Group Activity

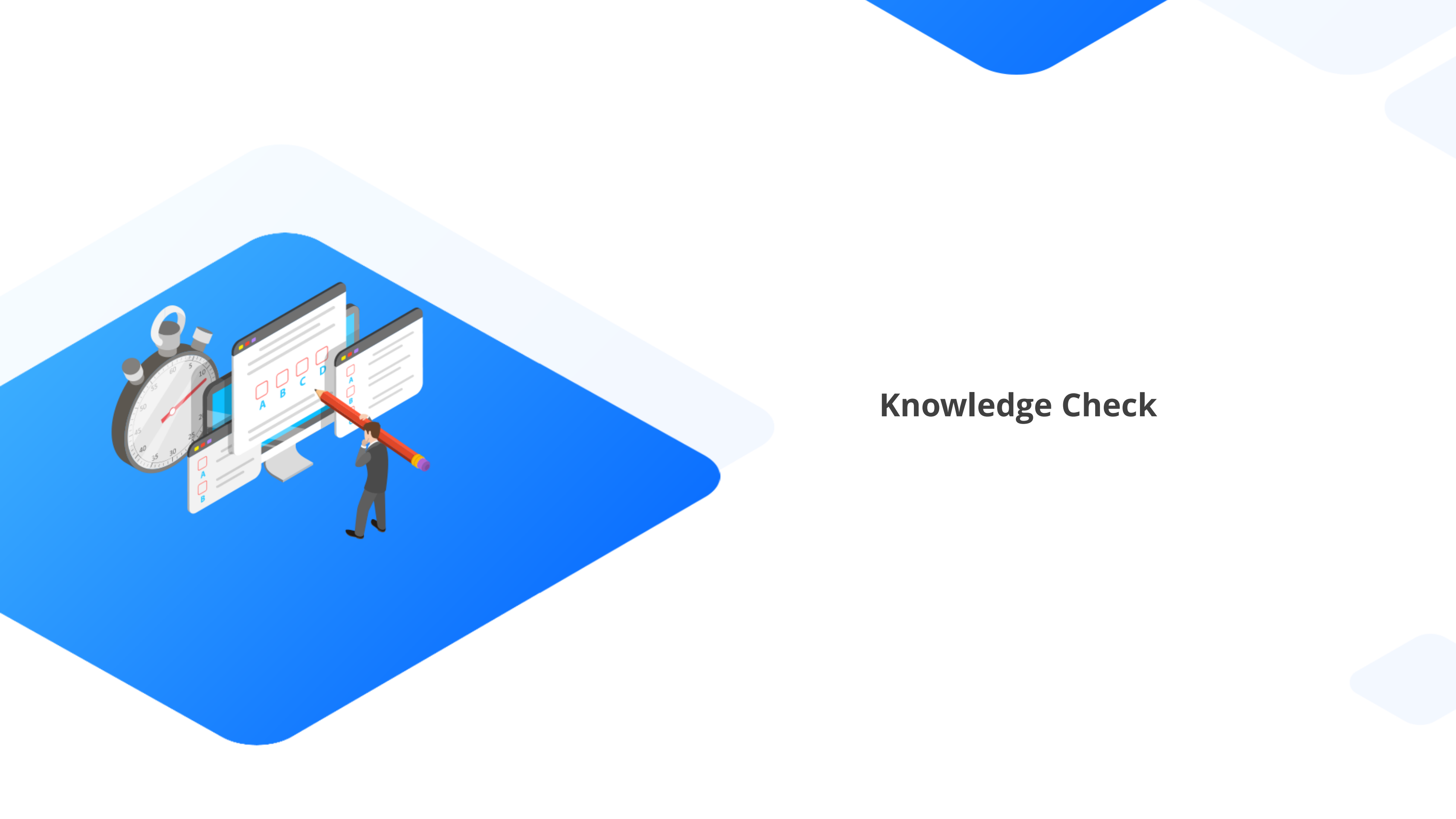
Group Activity: Real-World AI Examples

1. Go to your designated breakout rooms.
2. Discuss the real-world use cases of the AI categories assigned to you.
3. Return to the main group to discuss your discoveries and decide on a use case to present.

Key Takeaways

- Artificial intelligence (AI) is the ability of a machine to perform tasks that normally require human intelligence
- AI algorithms are designed to imitate human intelligence processes, such as learning and problem-solving
- Machine learning is a subset of AI that involves teaching machines to learn from data





Knowledge Check

Knowledge Check

1

What is artificial intelligence?

- A. The ability of a machine to replicate human behavior
- B. The ability of a machine to perform intelligent human-like tasks
- C. The ability of a machine to access information from the internet
- D. The ability of a machine to answer questions



Knowledge Check

1

What is artificial intelligence?

- A. The ability of a machine to replicate human behavior
- B. The ability of a machine to perform intelligent human-like tasks
- C. The ability of a machine to access information from the internet
- D. The ability of a machine to answer questions

The correct answer is **B**

Artificial intelligence is the ability of a machine to perform intelligent human-like tasks.



Knowledge Check

2

Which of the following best describes Artificial General Intelligence (AGI)?

- A. A system that excels in a specific task, like playing chess
- B. An AI system capable of understanding, learning, and applying its intelligence broadly and flexibly, like a human
- C. AI that focuses on one specific area of study, like natural language processing
- D. Software that follows predefined rules to automate basic tasks



Knowledge Check

2

Which of the following best describes Artificial General Intelligence (AGI)?

- A. A system that excels in a specific task, like playing chess
- B. An AI system capable of understanding, learning, and applying its intelligence broadly and flexibly, like a human
- C. AI that focuses on one specific area of study, like natural language processing
- D. Software that follows predefined rules to automate basic tasks



The correct answer is **B**

An AI system capable of understanding, learning, and applying its intelligence broadly and flexibly, like a human.



Thank You!