What is AI?

Monoceros looks at the types of Artificial Intelligence (AI)

1. What is AI?

AI refers to computer systems that can perform tasks that typically require human intelligence. These tasks include learning, reasoning, problem-solving, perception, and understanding natural language.

2. Types of AI:

- Computer Vision: Computer vision enables machines to interpret and analyse visual information. Applications include image recognition in social media platforms and medical image analysis.
- General AI: Machines that possess broad cognitive abilities, capable of understanding, learning, and performing any intellectual task. While currently theoretical, the pursuit of General AI fuels ongoing research and innovation in this area.
- Deep Learning: Deep neural networks, inspired by the human brain's structure, excel in complex tasks such as image and speech recognition. Applications include facial recognition technology in smartphones and voice-controlled virtual assistants.
- Machine Learning (ML): ML algorithms power recommendation systems on platforms such as Netflix and Amazon. These algorithms learn from user behaviour, suggesting content tailored to individual preferences.
- Narrow/Weak AI: This AI is specialised in performing a particular task without possessing general cognitive abilities.

  Example : Virtual Personal Assistants like Siri or Google Assistant These perform specific tasks like setting reminders or answering queries.

- Natural Language Processing (NLP): a type of AI that relates to the interaction between computers and human language. It deploys and develops algorithms and computational models that enable machines to understand, interpret, and generate human-like language. NLP combines aspects of linguistics and computer science to bridge the gap between human communication and computer understanding.

  Example: Chatbots equipped with NLP understand and respond to human language. These conversational agents are employed in customer service, enhancing user experience through seamless interaction.

- Reinforcement Learning: a type of ML paradigm where an agent learns to make decisions by interacting with its environment. The agent learns from trial and error, receiving

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feedback in the form of rewards or penalties based on the actions it takes. The goal of reinforcement learning is for the agent to discover the optimal strategy or sequence of actions that maximizes cumulative reward over time.

Example: Autonomous vehicles leverage reinforcement learning. Through trial and error, they learn to navigate and make decisions, receiving positive reinforcement for correct actions.

3. Practical Insights:

- Personalization: E-commerce platforms employ AI to personalize user experiences, offering tailored recommendations and enhancing customer satisfaction.
- Predictive Analytics: AI-driven predictive models analyse historical data to forecast future trends, optimizing decision-making in various industries.
- Robotics: AI-powered robots perform intricate tasks in manufacturing, healthcare, and logistics, revolutionizing efficiency and precision.

4. What are Algorithms?

Algorithms are from the field of computer science and are a set of procedures or rules designed to perform specific tasks or solve certain problems. In the context of computer science and programming, algorithms are fundamental to the execution of various computational tasks. They serve as a blueprint for carrying out a sequence of operations to achieve a specific outcome.

5. Why AI Matters:

AI is a transformative technology that will impact every industry creating efficiencies and opportunities alongside the potential to pose serious harms and risks. Businesses and individuals that can identify and manage the risks and opportunities that AI presents in their context stand the best chance of adapting to that change and harnessing the potential of AI. At Monoceros Innovation, we are committed to equipping you with the skills that you need to harness AI in a sustainable, responsible and ethical manner.

6. Are there any International Guidelines Governing AI?

Yes, in November 2023, the Bletchley Park Declaration was signed by 28 leading AI nations to create a framework of ethical AI standards in AI development. It champions transparency, fairness, accountability, and human rights for responsible AI innovation. It also warns about the "*potential for serious, even catastrophic, harm, either deliberate or unintentional, stemming from the most significant capabilities of these AI models*." These risks extend beyond "frontier AI" to data bias and data privacy.

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Yes, in October 2023 in the United States of America, the Biden-Harris Administration issued a landmark Executive Order on AI. The Order establishes new standards for AI safety and security, seeks to protects Americans' privacy, seeks to advance equity and civil rights, consumer and worker protections and promote innovation.

The European Union also issued (and subsequently updated) a draft AI Act that proposes to regulate the use of AI within the EU and establish regulatory principles within a risk-based framework. The draft act focuses on rules around data quality, transparency, human oversight and accountability and addresses ethical matters. The June 2023 amendments seek a ban on the use of AI technology in biometric surveillance and for generative AI systems to disclose AI-generated content.

7. For more see

- https://www.gov.uk/government/news/countries-agree-to-safe-and-responsible-development-of-frontier-ai-in-landmark-bletchley-declaration
- https://www.whitehouse.gov/briefing-room/statements-releases/2023/10/30/fact-sheet-president-biden-issues-executive-order-on-safe-secure-and-trustworthy-artificial-intelligence/
- https://www.weforum.org/agenda/2023/06/european-union-ai-act-explained/

Contact us

For more information about:

- data and AI strategies
- data ethics, governance and privacy contact
- how AI can revolutionise your business
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