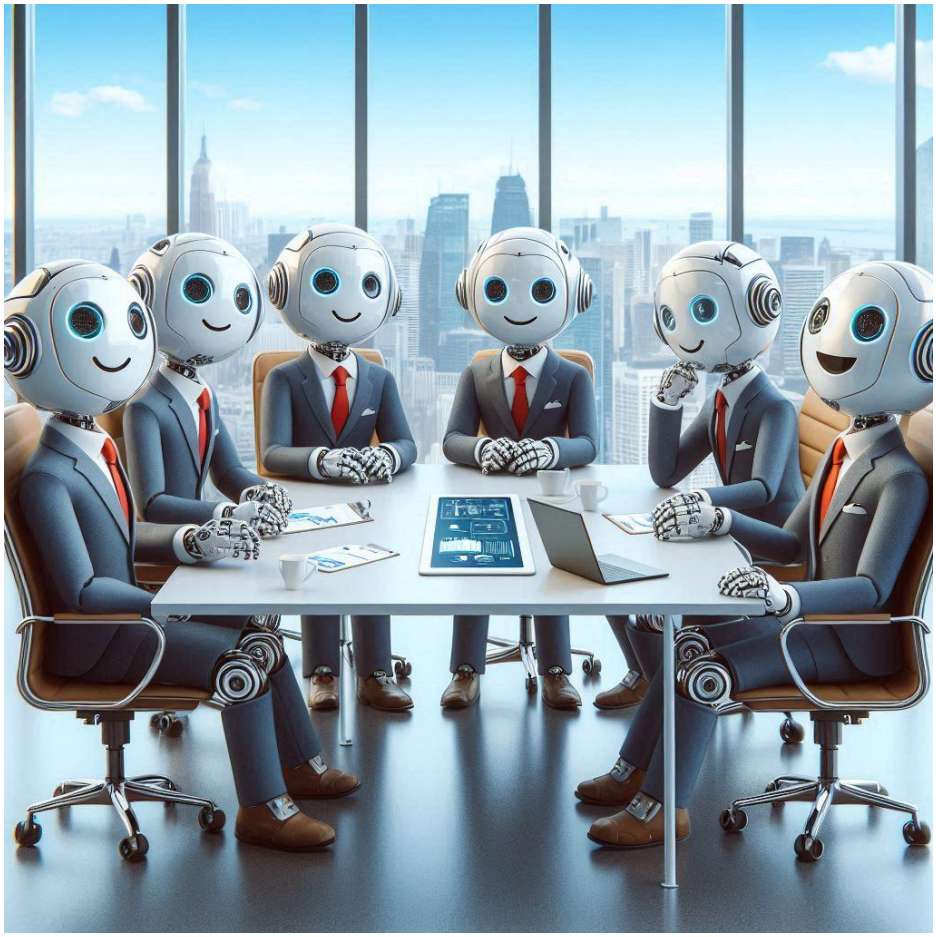

AI EXPLAINED

Section 1

TFEP
The Foundation for Entrepreneurial Participation

https://www.kuazone-gesp.com/ai

Email: info@tfep.org

INFORMATION PROGRAMME

AI

www.tfep.org

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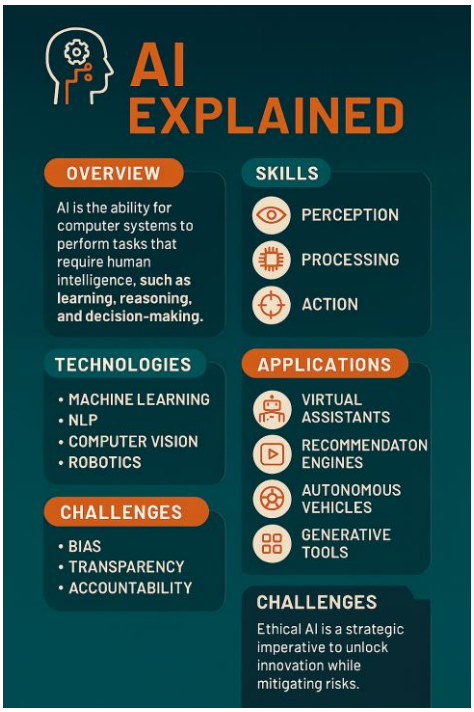
INTRODUCTION

Artificial Intelligence (AI) refers to the ability of computer systems to perform tasks that typically require human intelligence, such as learning, reasoning, problem solving, perception, and decision-making.

AI is a multidisciplinary field rooted in computer science, mathematics, psychology, neuroscience, linguistics, and philosophy. It encompasses a wide range of technologies, including machine learning, natural language processing, computer vision, and robotics.



At its core, AI systems are designed to perceive their environment, process data, and take actions that maximize the likelihood of achieving specific goals. These systems can be trained to recognize patterns, make predictions, and adapt to new information without being explicitly programmed for every scenario.

For example, machine learning algorithms enable AI to improve performance over time by analyzing large datasets, while deep learning models—inspired by the structure of the human brain—excel at tasks like image recognition and language translation.

AI powers many everyday applications, such as virtual assistants (e.g., Siri, Alexa), recommendation engines (e.g., Netflix, Amazon), autonomous vehicles, and generative tools like chatbots and AI art platforms. While AI has made remarkable progress, especially with the rise of transformer-based models and generative AI, it also raises ethical concerns around bias, transparency, and accountability. Researchers and policymakers continue to explore how to govern AI responsibly, ensuring it benefits society while minimizing harm.

CORE DEFINITION

- AI refers to the simulation of human intelligence in machines that are programmed to think, learn, and adapt.
- These systems can analyze data, recognize patterns, and make decisions with minimal human intervention.

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KEY CAPABILITIES

- **Learning**: Acquiring and applying knowledge from data (often through machine learning).
- **Reasoning**: Drawing conclusions and solving problems logically.
- **Perception**: Interpreting sensory input like images, sounds, or text.
- **Language Understanding**: Processing and generating human language (natural language processing).
- **Planning and Decision-Making**: Choosing actions to achieve specific goals.

TYPES OF AI

- **Narrow AI**: Designed for specific tasks (e.g., voice assistants, recommendation systems).
- **General AI (AGI):** Hypothetical AI that can perform any intellectual task a human can do.
- **Machine Learning & Deep Learning**: Subfields of AI that focus on training algorithms to learn from data.

REAL-WORLD APPLICATIONS

- Search engines (Google Search)
- Virtual assistants (Siri, Alexa)
- Autonomous vehicles (e.g., Waymo)
- Generative tools (like image or text generation)
- Healthcare diagnostics, fraud detection, and robotics

HISTORICAL CONTEXT

- The field of AI was formally founded in 1956 and has evolved through cycles of innovation and setbacks.
- Recent breakthroughs in deep learning and transformer models have accelerated progress, leading to today's AI boom.