Artificial intelligence (AI) is the ability of machines to perform tasks that typically require human intelligence, such as learning, reasoning, problem-solving, and decision-making. AI systems achieve this by processing vast amounts of data to identify patterns and adapt their behavior, allowing them to understand and respond to human language, recognize objects, and make predictions.

How AI works

- **Learning from data**: Instead of being explicitly programmed for every scenario, AI systems learn and improve over time from the data they are trained on.
- ** Machine Learning**: A subset of AI where algorithms learn from data and adapt to new inputs without human intervention.
- **Deep Learning**: A more advanced form of machine learning that uses complex neural networks to process vast amounts of data.
- **Perception and action**: AI systems can perceive their environment through sensors, process that information, and then take action to achieve a specific goal.

Examples of AI in use

- **Everyday applications**: Virtual assistants (like Siri and Alexa), search engine results, and recommendation systems on platforms like Netflix and Amazon use AI.
- **Business and automation**: AI is used in customer service to answer questions, in data analysis to find patterns, and to automate repetitive or unsafe tasks.
- **Advanced uses**: AI powers self-driving cars, advanced medical diagnostic tools, and can be used for creative generation.

Key capabilities

- **Language**: Understanding and translating spoken and written language.
- **Vision**: Seeing and identifying objects in images and video.
- **Problem-solving**: Making decisions and solving complex problems.
- **Prediction**: Anticipating future conditions or outcomes.