Artificial Intelligence | An Introduction

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Artificial Intelligence (AI) refers to the simulation of human intelligence in machines that are programmed to think and act like humans. It involves the development of algorithms and computer programs that can perform tasks that typically require human intelligence such as visual perception, speech recognition, decision-making, and language translation. AI has the potential to revolutionize many industries and has a wide range of applications, from virtual personal assistants to self-driving cars.

Before leading to the meaning of artificial intelligence let understand what is the meaning of Intelligence-

Intelligence:The ability to learn and solve problems. This definition is taken from webster's Dictionary.

". Thus, the AI systems are more generic(rather than specific), can "think" and are more flexible.

Intelligence, as we know, is the ability to acquire and apply knowledge. Knowledge is the information acquired through experience. Experience is the knowledge gained through exposure(training). Summing the terms up, we get artificial intelligence as the "copy of something natural(i.e., human beings) 'WHO' is capable of acquiring and applying the information it has gained through exposure."

Intelligence is composed of:

- Reasoning
- Learning
- Problem-Solving
- Preception
- Linguistic Intelligence

Many tools are used in AI, including versions of search and mathematical optimization, logic, and methods based on probability and economics. The AI field draws upon computer science, mathematics, psychology, linguistics, philosophy, neuroscience, artificial psychology, and many others.

The main focus of artificial intelligence is towards understanding human behavior and performance. This can be done by creating computers with human-like intelligence and capabilities. This includes natural language processing, facial analysis and robotics. The main applications of AI are in military, healthcare, and computing; however, it's expected that these applications will start soon and become part of our everyday lives.

Uses of Artificial Intelligence :

Artificial Intelligence has many practical applications across various industries and domains, including:

1. **Healthcare:** AI is used for medical diagnosis, drug discovery, and predictive analysis of diseases.
2. **Finance:** AI helps in credit scoring, fraud detection, and financial forecasting.
3. **Transportation:** AI is used for autonomous vehicles, traffic prediction, and route optimization
4. **Security:** AI is used for facial recognition, intrusion detection, and cybersecurity threat analysis.
5. **Education:** AI is used for personalized learning, adaptive testing, and intelligent tutoring systems.

Applications of AI include ==Language Processing== , ==Gaming== , ==Speech Recognition== , ==Vision Systems== , ==Healthcare== , ==Automotive== , etc.

AI Performance Evaluation Methods

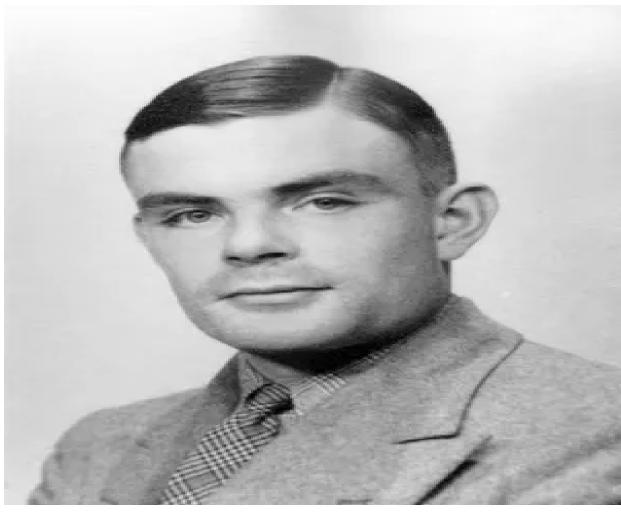| Evaluation Method	Description
Benchmarking	Creating standardized tasks, data sets, and metrics for evaluating AI performance.
Competition-Based Evaluation	Using competitions to evaluate and rank the performance of AI models.
Manual Evaluation	Expert-based evaluation of AI performance.
Comparison with Human Performance	Comparing AI performance with human performance in a given task.

Videos

What Is an AI Anyway? | Mustafa Suleyman | TED

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Image Gallery

Alan Mathison Turning

The earliest substantial work in the field of artificial intelligence was done in the mid-20th century by the British logician and computer pioneer Alan Mathison Turing. In 1935 Turing described an abstract computing machine consisting of a limitless memory and a scanner that moves back and forth through the memory, symbol by symbol, reading what it finds and writing further symbols. The actions of the scanner are dictated by a program of instructions that also is stored in the memory in the form of symbols. This is Turing's stored-program concept, and implicit in it is the possibility of the machine operating on, and so modifying or improving, its own program. Turing's conception is now known simply as the universal Turing machine. All modern computers are in essence universal Turing machines.

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