Artificial Intelligence & Natural Language Processing

AI – Introduction & Definition

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What is AI?

- Artificial Intelligence is currently one of the hottest buzzwords in tech and with good reason.

- AI is used in almost all industries, giving a technological edge to all companies integrating AI at scale.

- AI is a field of study that involves building machines that can learn, reason, and act like humans. AI systems can perform tasks that would normally require human intelligence, or that involve large amounts of data.

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What AI can do

•**Make predictions**: AI can analyze data to make predictions about future conditions

•**Recognize speech**: AI can learn to recognize speech and other patterns

•**Solve problems**: AI can learn to solve problems proactively

•**Automate tasks**: AI can automate repetitive tasks like data entry, customer service, and factory work

•**Improve decision-making**: AI can help humans make better decisions by providing more data and insights

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How AI works

• AI uses machine learning and deep learning to analyze data and make decisions

• AI systems use neural networks, which are made up of layers of interconnected nodes

that mimic the brain's neurons

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Where AI is used

- AI is used in business to make processes more efficient and profitable

- AI is used in voice assistants like Siri and Alexa

- AI is used in customer service chatbots

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Types of Intelligence

- Reactive

- Limited Memory

- Theory of Mind

- Self-aware

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Problem Solving by Searching

AI problem-solving involves a series of distinct steps and methodologies that enable machines to understand, analyze, and resolve complex problems.

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Search Strategies in AI

<u>Uninformed Search Strategy</u>

The main role of uninformed search algorithms is to systematically explore the search space to find a solution, without using any domain-specific knowledge or heuristics. While these algorithms may not always be the most efficient, they provide a baseline for understanding and solving complex problems in AI.

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Search Strategies in AI

Informed Search Strategy

Informed search algorithm uses the idea of heuristic, so it is also called Heuristic search. Heuristic is a function which is used in Informed Search, and it finds the most promising path. It takes the current state of the agent as its input and produces the estimation of how close agent is from the goal.

Difference Between Human & Artificial Intelligence

The things that make us uniquely human—our capacity for creativity, empathy and emotional intelligence—set human intellect apart from AI. Unlike AI, which follows set rules and algorithms, humans possess the innate ability to think critically, adapt to new situations and express complex emotions

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