

A-Z OF ARTIFICIAL INTELLIGENCE

THE AI DICTIONARY

**A Beginner's Guide to
Understanding Key Terms
of Artificial Intelligence**



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Introduction

We are pleased to present "The AI Dictionary" - a unique reference book that explores key artificial intelligence concepts from A to Z. For each letter of the alphabet, we have selected a single defining word related to AI. Our aim is to concisely illustrate the breadth and depth of topics within the field of artificial intelligence in an engaging and accessible manner.

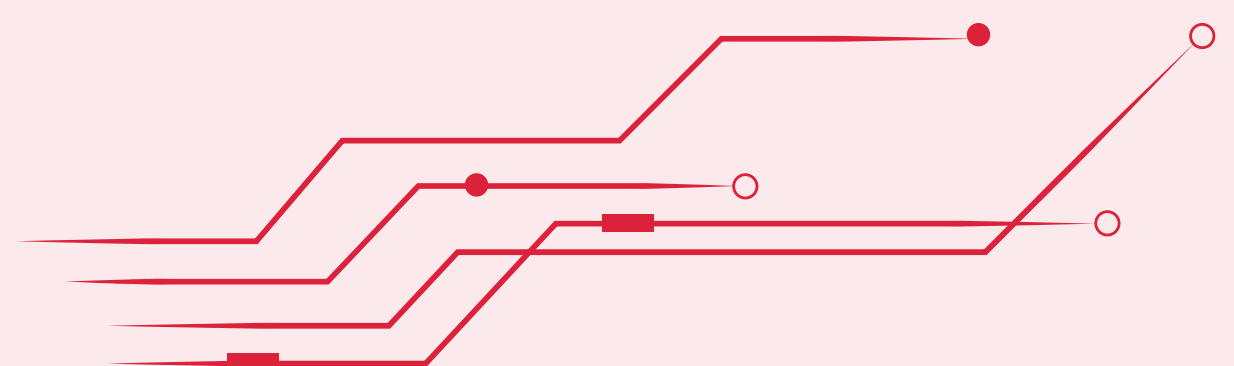
Within these pages, you will find concise definitions for 26 important AI terms, ranging from basic concepts like Deep Learning to emerging areas like Explainable AI. Some entries contain links to more in-depth explanations of those keywords on our website. With entries written in a clear and straightforward style, we hope to provide valuable insights into the world of AI and inform readers' understanding of this rapidly developing technology.

As artificial intelligence increasingly impacts our lives and societies, having a fundamental grasp of the underlying principles and vocabulary is important. The AI Dictionary serves as a starting point for anyone looking to develop their AI literacy. Whether you are a student wanting to learn more, a professional keeping up with changes in your industry, or simply curious about new technological developments, we hope you find this reference book both informative and enjoyable to explore.



Algorithm

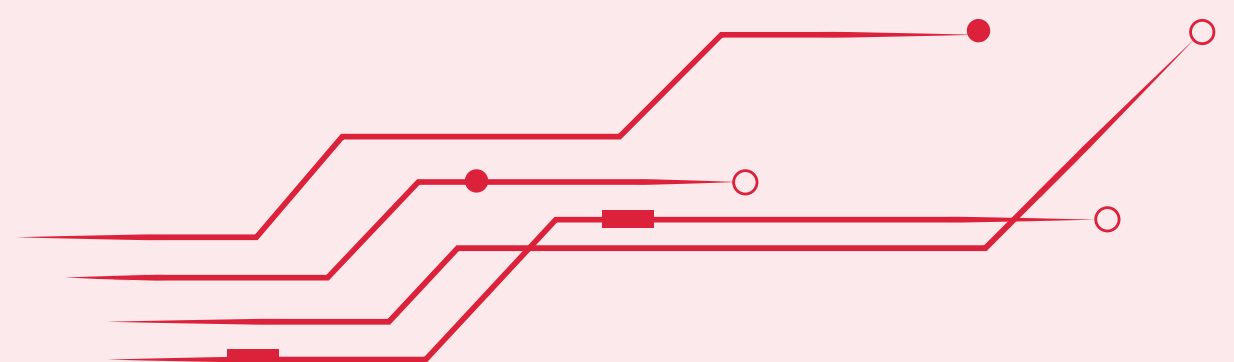
A set of instructions or rules designed to perform a specific task or solve a particular problem.





Bias

In AI, bias refers to the presence of unfair or prejudiced outcomes in algorithms, often reflecting existing societal biases present in the data used for training.





Chatbot

A computer program designed to simulate conversation with human users, often used for customer service or information retrieval.



Deep Learning

Deep learning is a subfield of machine learning that involves training artificial neural networks on large amounts of data to perform complex tasks without explicit programming.



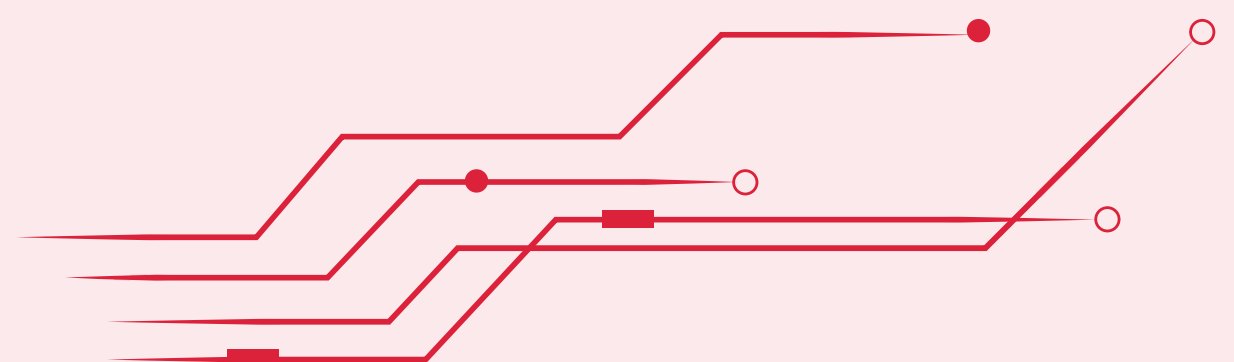
Expert System

An **expert system** is a computer system that emulates the decision-making ability of a human expert. It uses knowledge about a specific domain, as well as inference algorithms, to solve complex problems that normally require human expertise.



Fuzzy Logic

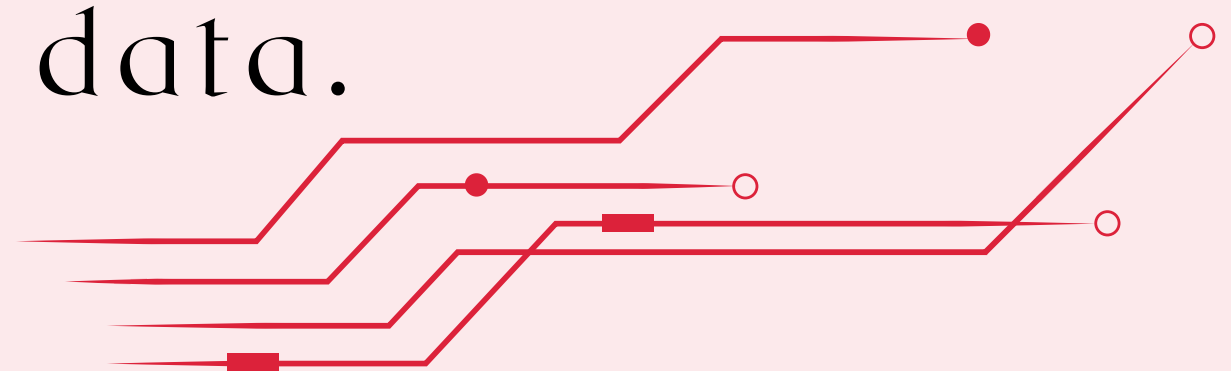
A type of logic that allows for the representation of uncertainty and imprecision in decision-making, commonly used in AI for systems where information is not precise.





Generative Adversarial Network (GAN)

A generative adversarial network (**GAN**) is a sophisticated machine learning model that uses two neural networks to create new data that is similar to a given training dataset. The two neural networks, a generator and a discriminator, work in a competitive manner to produce increasingly authentic data.





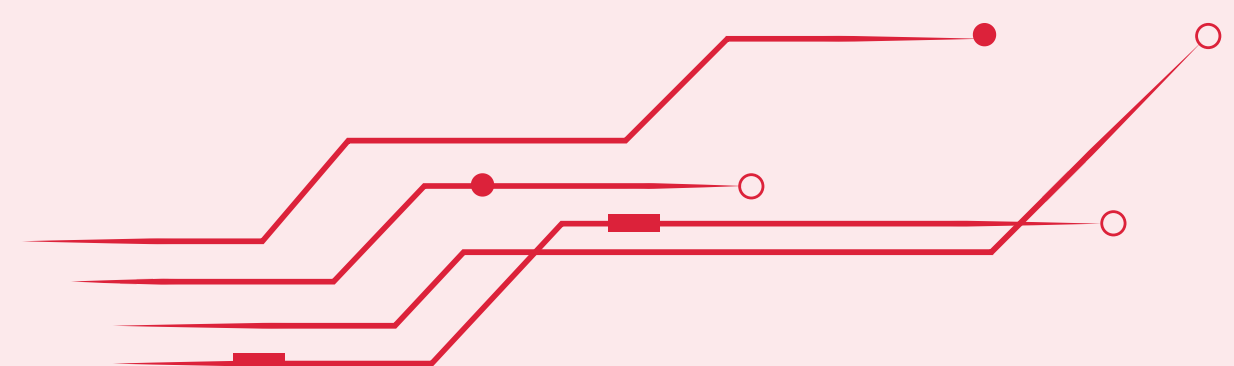
Hallucinations

Hallucinations in the context of AI refer to instances where AI systems generate or infer incorrect information that was not present in their training data. If left unaddressed, **AI hallucinations** pose risks such as spreading misinformation, making biased decisions, and causing economic or safety issues.



IoT (Internet of Things)

The network of interconnected devices that communicate and share data, often integrated with AI for enhanced functionality.





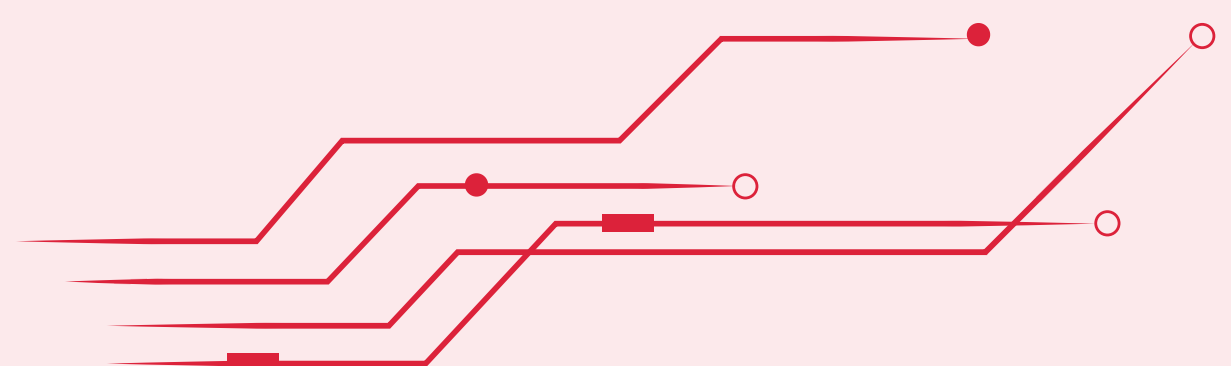
Job Displacement

Job displacement is a controversial topic related to AI, which refers to the potential impact of automation on employment. As AI becomes more advanced, some jobs may become obsolete or be replaced by machines. However, AI may also create new jobs in fields such as software development, data science, and robotics.



Knowledge Representation

The process of representing information about the world in a form that a computer system can utilize to solve complex tasks.

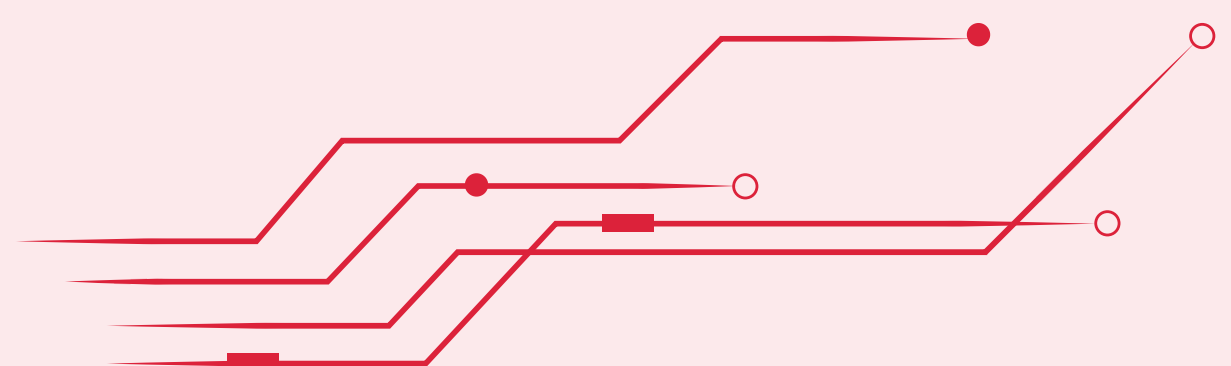




LLM:

Large Language Model

A *Large Language Model* (LLM) is a type of machine learning model that is trained on a massive amount of text data, enabling it to understand and generate human-like text.





Machine Learning

Machine learning is a branch of artificial intelligence that focuses on the development of algorithms and statistical models that enable machines to learn from data, without being explicitly programmed.

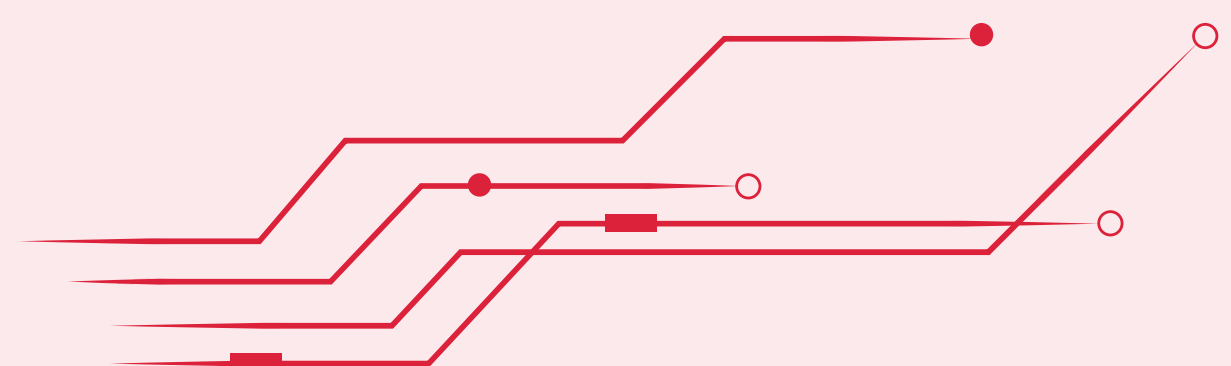


NLP (Natural

Language

Processing)

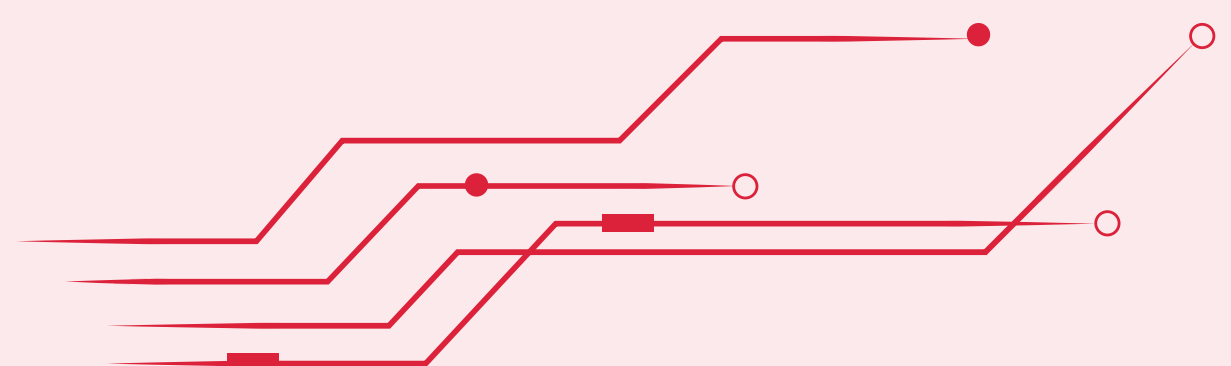
NLP enables computers to interact with humans in a more natural and intuitive way, making it easier for people to communicate with machines and for machines to understand human communication like voice and text.





One-shot learning

A machine learning technique that enables models to learn from a single or a few examples, without requiring large amounts of training data.





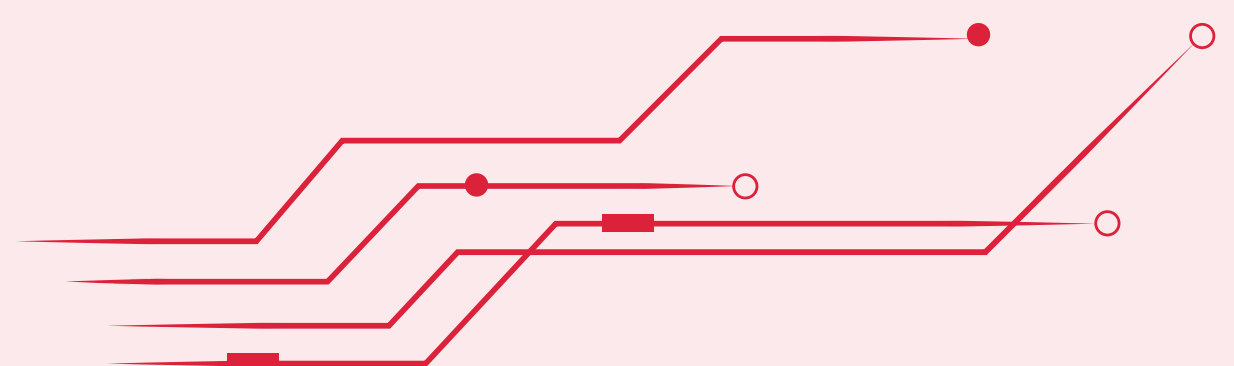
Prompt

A **prompt** is a short statement or question that provides the context and instructions needed for AI to understand the conversation and respond appropriately. A well-written prompt is crucial to get the most helpful response from AI.



Quantum Computing

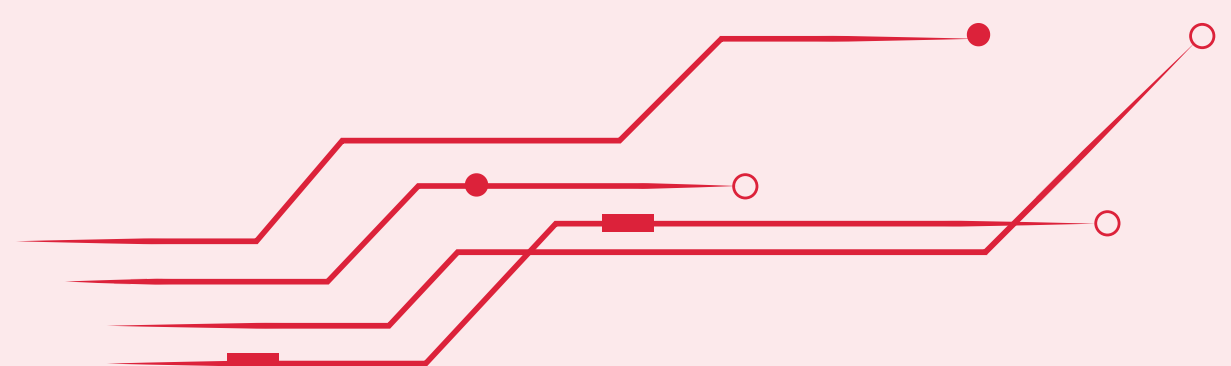
A type of computing that uses quantum bits (qubits) to perform calculations, showing promise in solving complex problems that are computationally infeasible for classical computers.





Reinforcement Learning

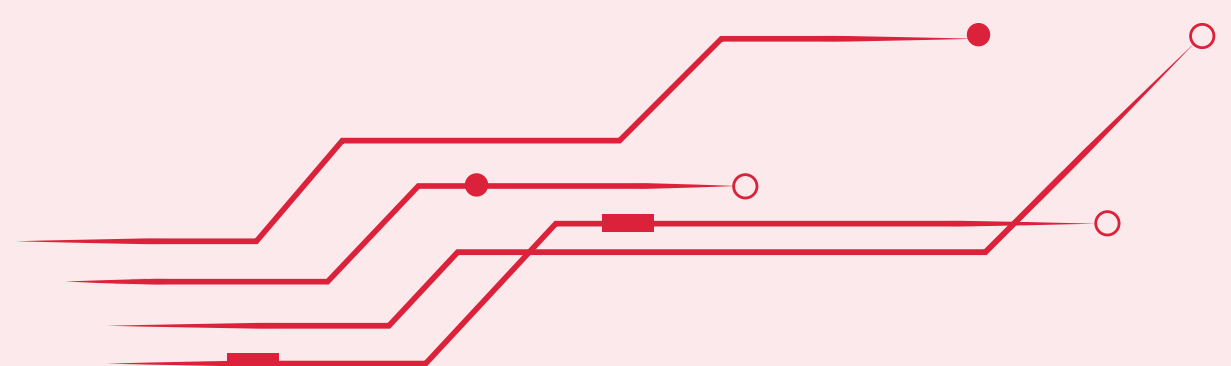
Reinforcement Learning is a type of machine learning where an agent learns to make decisions by interacting with its environment and receiving feedback in the form of rewards or penalties.





Semantic Web

An extension of the World Wide Web that enables machines to understand the meaning of information, fostering better collaboration and data sharing.





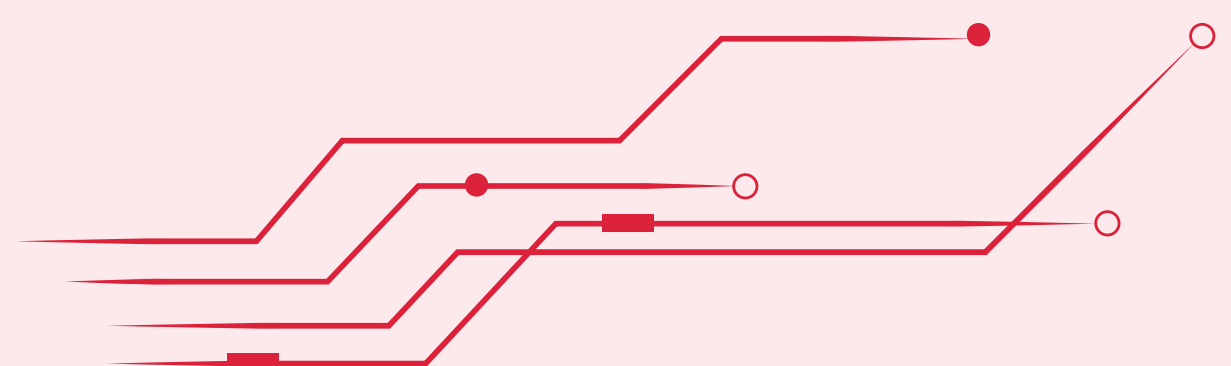
Transfer Learning

A machine learning technique where a model trained on one task is adapted to work on a related but different task, often improving efficiency and performance.



Unsupervised Learning

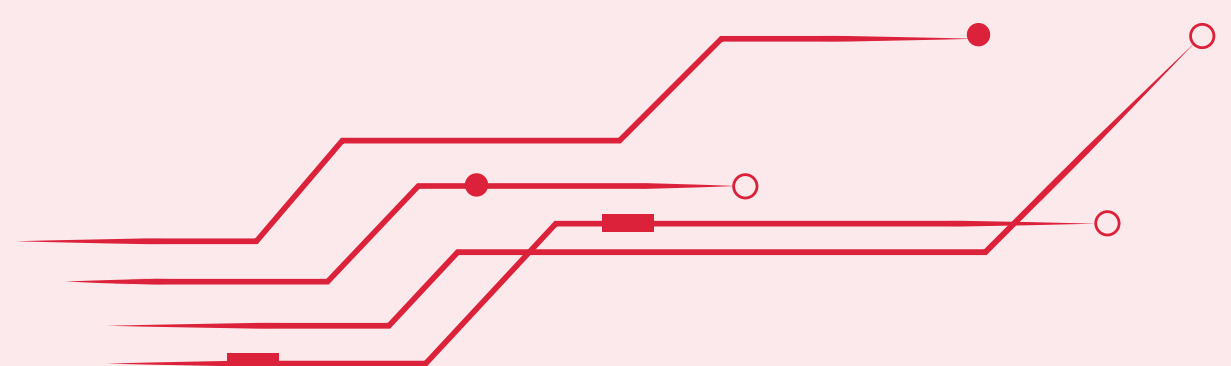
A type of machine learning where the algorithm is given data without explicit instructions on what to do with it, allowing the algorithm to discover patterns and relationships on its own.





Virtual Assistant

An AI-powered software agent that assists users in completing tasks or providing information through natural language interaction.





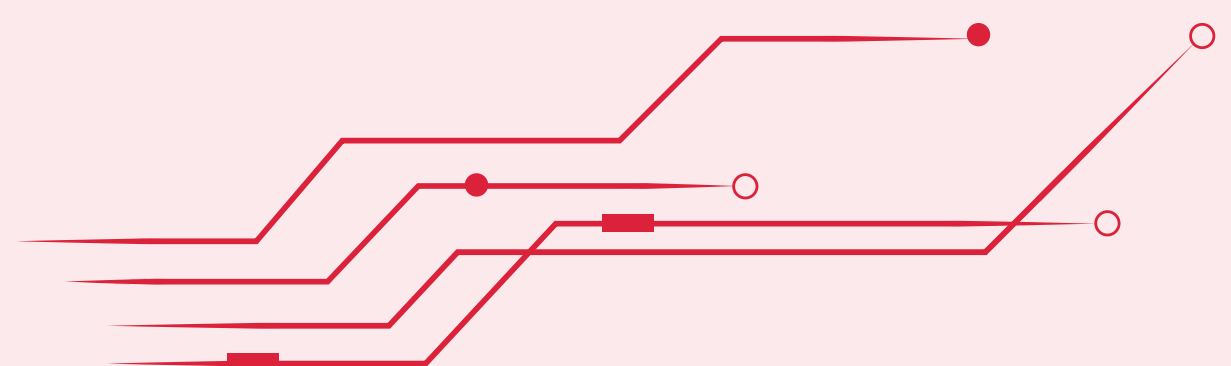
Weak AI

AI systems designed and trained for a specific task, as opposed to Strong AI, which would possess general cognitive abilities comparable to humans.



XAI (Explainable AI)

Explainable AI or **XAI** is the subfield of artificial intelligence which is focused on making AI models understandable and interpretable to humans.





Yottabyte

A unit of information storage equal to 2^{80} bytes, highlighting the vast amounts of data processed by AI systems.



Zero-Shot Learning

A machine learning paradigm where a model is trained to recognize new classes or categories without explicit examples during training, simulating the ability to learn from limited information.

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