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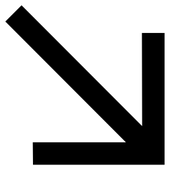
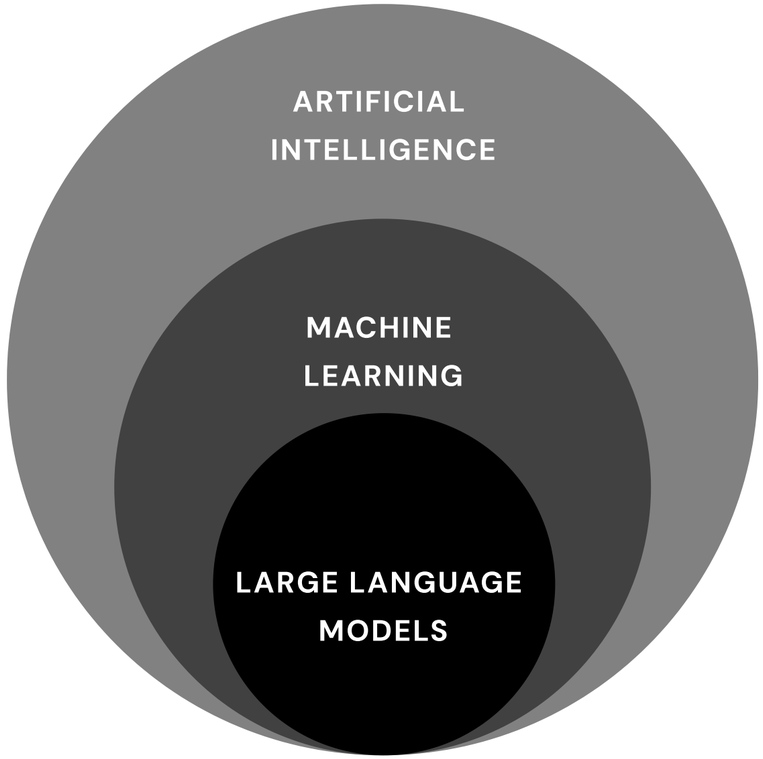
AI, ML & LLMs



What is a large language model?



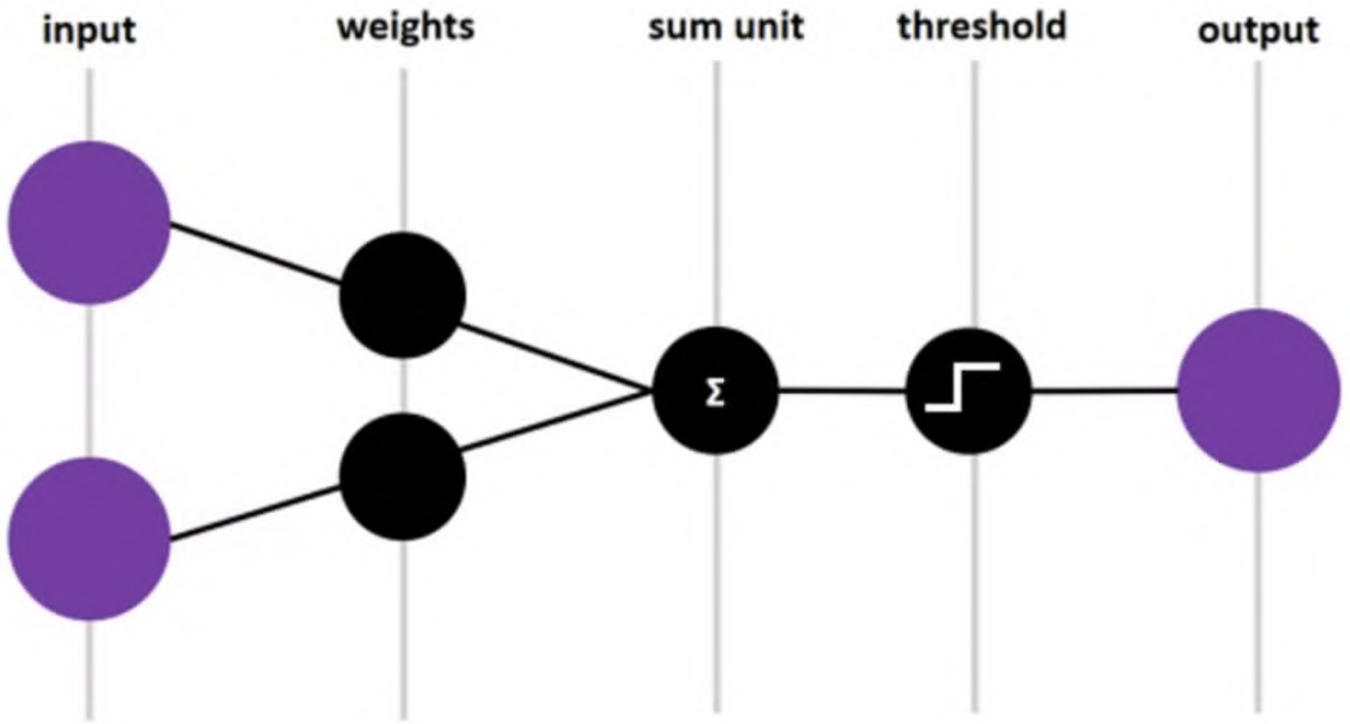
Artificial Intelligence (AI)
System capable of performing tasks that typically require human intelligence, such as reasoning and problem solving.

Machine Learning (ML)
Subset of AI focused on developing algorithms that enable systems to learn and improve from data without being explicitly programmed.

Large Language Models (LLMs)
Subset of ML, specifically designed to process and generate human-like text based on vast amounts of language data.

The origins of AI

AI research began in the 1950s, with the term "Artificial Intelligence" first coined at the Dartmouth Conference in 1956, where scientists gathered to explore how machines could simulate human intelligence. Early research focused on logic, reasoning, and symbolic problem-solving.



`Early machine learning`

Key components of a perceptron:

- **Inputs:** It takes multiple inputs, similar to how a neuron receives signals from other neurons.
- **Weights:** Each input has an associated weight that determines its influence on the output.
- **Summation Function:** It sums up the weighted inputs to calculate a total.
- **Output Function:** The total is passed through a step function (or activation function) to determine the output, typically either 0 or 1.

Vaswani et al. introduce the transformer model in 2017

Attention Is all You Need

The transformer model

Input	"What is Nike?"
Encoder	Encoder determines the relationships between the words in theinput.
Decoder	Decoder predicts the words most likely to follow based on the encoder's representation of the input.
Output	"Nike is a sportswear company based in the United States."

Pitch

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