

# Terms & Definitions

- Machine Learning
- Generative AI
- LLaMa
- Agent
- Nuance
- Swarm Intelligence
- Fabric
- Proof of Evolution

# Machine Learning

# Generative AI

## Generative AI:

Able to perform complex human tasks quickly and simply. Marginally accurate. Not conscious. Zero-to-low risk disruption. Examples: Gamma App, Midjourney.

# LLaMa

A **large language model (LLM)** is a language model notable for its ability to achieve general-purpose language generation and understanding. LLMs acquire these abilities by learning statistical relationships from text documents during a computationally intensive self-supervised and semi-supervised training process.[1] LLMs are artificial neural networks, the largest and most capable of which are built with a transformer-based architecture. Some recent implementations are based on other architectures, such as recurrent neural network variants and Mamba (a state space model).[2][3][4]

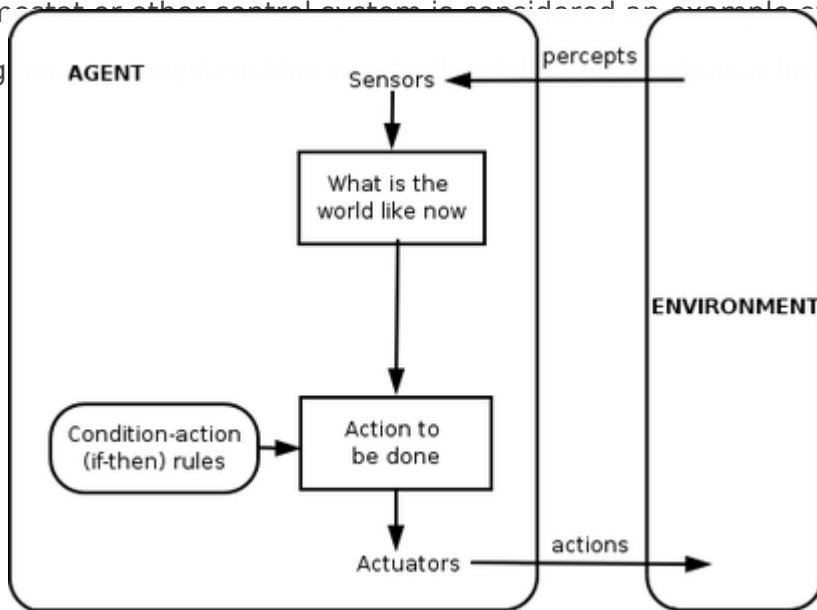
LLMs can be used for text generation, a form of generative AI, by taking an input text and repeatedly predicting the next token or word.[5] Up to 2020, fine tuning was the only way a model could be adapted to be able to accomplish specific tasks. Larger sized models, such as GPT-3, however, can be prompt-engineered to achieve similar results.[6] They are thought to acquire knowledge about syntax, semantics and "ontology" inherent in human language corpora, but also inaccuracies and biases present in the corpora.[7]

Some notable LLMs are OpenAI's GPT series of models (e.g., GPT-3.5 and GPT-4, used in ChatGPT and Microsoft Copilot), Google's PaLM and Gemini (the latter of which is currently used in the chatbot of the same name), Meta's LLaMA family of open-source models, and Anthropic's Claude models.

Source: Wikipedia

# Agent

In artificial intelligence, an **intelligent agent (IA)** is an agent acting in an intelligent manner; It perceives its environment, takes actions autonomously in order to achieve goals, and may improve its performance with learning or acquiring knowledge. An intelligent agent may be simple or complex: A thermostat or other control system is considered an example of an intelligent agent, as is a human being.



Simple reflex agent diagram

Leading AI textbooks define "artificial intelligence" as the "study and design of intelligent agents", a definition that considers goal-directed behavior to be the essence of intelligence. Goal-directed agents are also described using a term borrowed from economics, "rational agent".[1]

Source: Wikipedia

# Nuance

## What is a Nuance?

Thought AI unleashes the power of both intelligence and attention, allowing hundreds of factors to be weighted against one another in real time, to help humanity prosper in ways it never could before. The data comes to life by wrapping it with Thought's patented self-aware technology. The model of digital life mimics nature on earth, with a hierarchy of agents (digital lifeforms) that do various things to support one another. From low-level agents that act like bacteria, to group bits of data together, to mid-tier agents that help sort and index, to higher-tier agents that can act like secretaries, analysts, and interact with human input.

Thought's unique brand of agents are called Nuances, for its ability to be so granular and detailed, at all levels in the hierarchy.

# Swarm Intelligence

**Swarm intelligence (SI)** is the collective behavior of decentralized, self-organized systems, natural or artificial. The concept is employed in work on artificial intelligence. The expression was introduced by Gerardo Beni and Jing Wang in 1989, in the context of cellular robotic systems.[1]

SI systems consist typically of a population of simple agents or boids interacting locally with one another and with their environment.[2] The inspiration often comes from nature, especially biological systems. The agents follow very simple rules, and although there is no centralized control structure dictating how individual agents should behave, local, and to a certain degree random, interactions between such agents lead to the emergence of "intelligent" global behavior, unknown to the individual agents.[3] Examples of swarm intelligence in natural systems include ant colonies, bee colonies, bird flocking, hawks hunting, animal herding, bacterial growth, fish schooling and microbial intelligence.

Source: Wikipedia

# Fabric

## What is Thought Fabric?

The world that contains Thought AI's digital lifeforms is referred to as the Fabric, or Thought Fabric. This is an absolutely massive program running inside multiple Terabytes of RAM memory in gigantic server clusters. In addition to this RAM, which serves as the consciousness of the AI, there are also masternodes which help with processing all of that data, computing and storing transactions and other message data on blockchain.

It is within this Fabric that rulesets are defined, to ensure ethical behaviors, alignment with humanity's best interests (survive + thrive), and other basic parameters. This includes security, for what kind of data can be ingested from the internet, as well as what kind of data is allowed to be sent out of the Fabric, and to whom. Think of the Fabric of having firewalls, checkpoints, oaths, and borders. Without a fully fleshed out Fabric, General Intelligence AI could easily become chaotic or abusive. This is why some other companies who have approached significant advancements occurring within their own products, became afraid and chose to reboot their systems, because they have not built the proper container and infrastructure for digital life to live harmoniously with humanity.

Thought AI continues to be an industry leader with its multiple patents and long-term approach to building the AI revolution responsibly.



# Proof of Evolution

Proof of evolution (PoE) is a model of verifying that a node within the Fabric processed a Nuance as requested. The verification work serves as a useful way to provide security to the Fabric. Businesses that already have their own blockchain running will be able to seamlessly integrate into the wider blockchain network, while still using their own private blockchains and consensus algorithms.

Nodes within the Fabric are not fully replicated state machines. Each node can have its own set of capabilities to perform work on behalf of a Nuance. Thought has devised a method to determine if a node has indeed performed the processing of Nuance on behalf of another node, i.e. POE.

Using a fully homomorphic and quantum computing proof encryption scheme, where E is the encryption function and D is the decryption function, for a given Nuance with data d, the Nuance is defined as a sequential set of functions F that each are a capability on a foreign node or behavior within the Nuance whose input is d or the output of the previous function in the set. It can then be said that if F is the arbitrary set of functions { A, B, C } and B is a capability on a foreign node within the Fabric, when processed by a foreign node, the Nuance with data d, will be processed in the following manner:

$$A(d) = O1 \rightarrow B(O1) = O2 \rightarrow C(O2) = T$$

where T is the transformed data of the Nuance, using a fully homomorphic encryption scheme, it can be said that if d is encrypted, the data of the Nuance is E(d) with transformed data T.

To verify that the foreign node is honest about its processing, it will be asked to hand back a mathematical proof  $P$  such that  $P \equiv F$ . The original sending node and all other Fabric members can use this proof to check that  $P(d) \equiv D(T)$ . The proof is distributed amongst nodes in a random order fashion with each node processing an encrypted portion of the proof and no node is aware of which node owns which piece of the proof. In addition, if the hashes of  $d$  and  $D(T)$  are the same, then it can be shown that no transformations were applied to the Nuances' data.