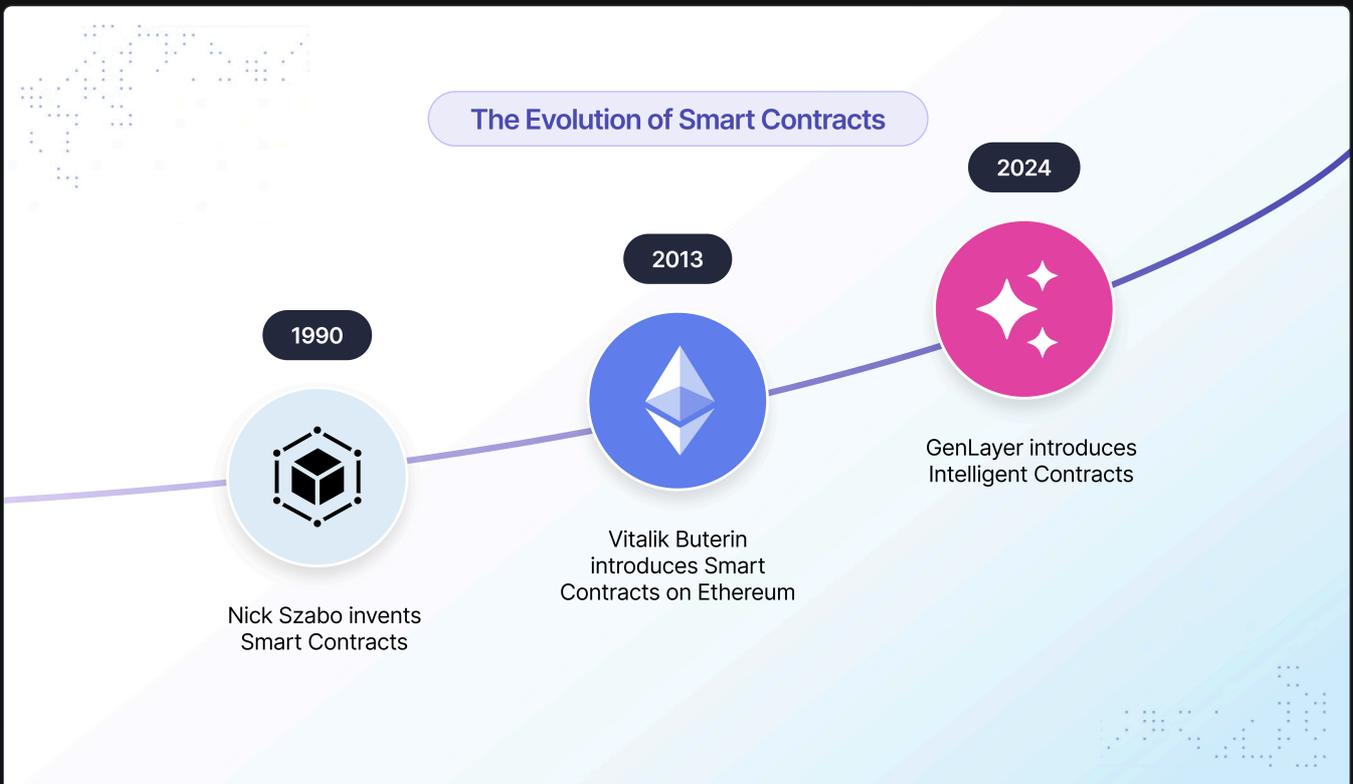# What Are Intelligent Contracts?

Intelligent Contracts are AI-powered smart contracts designed to leverage Large Language Models (LLMs) for real-time web data retrieval and natural language processing. Unlike traditional smart contracts—limited by deterministic code and external oracles—Intelligent Contracts adapt their logic based on live data and evolving conditions. By natively integrating AI at the protocol level, Intelligent Contracts on GenLayer can understand and respond to complex, real-world scenarios, unlocking a new class of decentralized applications.

The Evolution of Smart Contracts

1990 — Nick Szabo invents Smart Contracts

2013 — Vitalik Buterin introduces Smart Contracts on Ethereum

2024 — GenLayer introduces Intelligent Contracts

Feature	Traditional Smart Contracts	Intelligent Contracts
Definition	Self-executing blockchain programs with terms defined in code	AI-driven contracts that access web data and process natural language in real time
Capabilities	Executes predefined on-chain actions based on code logic	Executes on-chain actions, can interpret external data, perform AI-driven reasoning, etc.

Feature	Traditional Smart Contracts	Intelligent Contracts
Language Understanding	Limited to code-based commands	Understands and acts on human-readable text prompts (natural language)
Web Data Access	Depends on external oracles for off-chain data	Integrates directly with real-time web data, removing the need for external oracles
Data Handling	Can only process data already on-chain	Fetches and utilizes off-chain data (APIs, market info, web resources, etc.)
Programming Language	Often uses specialized blockchain languages (e.g. Solidity)	Generally Python-based in GenLayer, making development more accessible to a broader audience
Ease of Development	Requires specialized blockchain knowledge and tooling	Accessible via familiar languages (Python) and the GenLayer Studio developer experience
Flexibility	Executes static operations based on predefined logic	Can adapt in real time to changing conditions, offering AI-driven functionality
Consensus Mechanism	Relies on standard blockchain consensus (e.g., Proof of Stake, Proof of Work)	Utilizes Optimistic Democracy for deterministic and non-deterministic contract outputs
Use Cases	Typically restricted to basic on-chain logic like token transfers or deterministic dApps	Enables advanced apps like AI-driven DAOs, predictive analytics, autonomous oracles, etc.

By embedding AI-driven capabilities into the core of the blockchain, Intelligent Contracts deliver real-time adaptability, broader functionality, and deeper integration with the external world—significantly expanding the scope of what decentralized applications can achieve on GenLayer.

GenLayer Documentation