

GrantChain – Whitepaper v1.0

The AI-Native Layer 2 for Autonomous Project Deployment and On-Chain Innovation

Executive Summary

GrantChain is the first **AI-Native Layer 2 blockchain** purpose-built to accelerate the deployment of AI-powered decentralized applications (dApps) and autonomous agents. Built on top of Solana for high throughput and low fees, GrantChain introduces a fully integrated AI execution environment, allowing developers to launch AI models, deploy autonomous smart agents, and access modular AI APIs directly on-chain.

By embedding AI capabilities natively at the protocol level, GrantChain transforms how on-chain projects are built and operated—removing the need for complex off-chain infrastructure and unlocking a new era of autonomous, intelligent blockchain applications.

\$GRANT is the native token powering computation fees, model execution, and governance across the GrantChain ecosystem.

Problem Statement

While AI adoption is growing across industries, its integration with blockchain remains fragmented and inefficient. Current challenges include:

- **Lack of AI Execution Environments On-Chain:** Developers must rely on off-chain AI computations, introducing trust and latency issues.
 - **High Barriers to AI Deployment:** Deploying AI models requires specialized infrastructure and costly cloud resources.
 - **No Native Economic Incentives for AI Models:** There's no sustainable on-chain economy rewarding model providers and AI services.
 - **Limited Support for Autonomous Agents:** Current chains don't natively support AI agents capable of autonomous decision-making and interaction with smart contracts.
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GrantChain: The AI-Native Layer 2 Solution

GrantChain introduces a Layer 2 protocol optimized for **direct AI model deployment and autonomous application execution**, enabling:

- **AI-Enhanced Smart Contracts (AISC):**
A new class of smart contracts augmented by embedded AI inference engines, enabling real-time decision-making and dynamic behavior.
- **On-Chain AI Model Marketplace:**
A decentralized marketplace for uploading, accessing, and monetizing AI models (LLMs, recommendation systems, predictive engines). Developers can deploy models using standardized API interfaces directly accessible by smart contracts.
- **Autonomous AI Agents:**
AI-driven on-chain agents capable of executing transactions, negotiating with other agents, and interacting with DeFi protocols based on predefined objectives.
- **Zero-Trust AI Oracles:**
AI-powered oracles providing reliable data aggregation, market predictions, and sentiment analysis natively on-chain.
- **AI Compute Layer:**
Integrated decentralized compute layer optimized for running AI inference tasks, leveraging zkML (Zero-Knowledge Machine Learning Proofs) for model execution verification.

Technical Architecture

Component	Details
Base Layer	Solana (High Performance, Settlement Layer)
GrantChain Layer 2	AI-Optimized Execution Layer (Rollup Architecture)
AI Execution Engine	Custom WASM Runtime for Model Inference with zkML Proofs
AI Model Storage	IPFS/Arweave + On-Chain Metadata Indexing
Oracle Integration	Native AI Oracles for Real-World Data
Agent Framework	SDK for Deploying Autonomous AI Agents
Governance	\$GRANT Token via DAO with AI-Coordinated Voting Suggestions

Tokenomics

Parameter	Details
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Token Name	GrantChain
Token Ticker	\$GRANT
Network	Solana + GrantChain Layer 2
Total Supply	1,000,000,000 GRANT (Fixed Supply)

Allocation

Category	Allocation
Community Incentives	60%
Ecosystem Development	15%
Team (Locked 12 Months)	10%
Treasury & Grants	10%
Partnerships & Strategic Initiatives	5%

Token Utility:

- Payment for AI Compute Usage
 - Access to AI Model Marketplace
 - Fees for Deploying and Running Autonomous Agents
 - Governance Participation
 - Staking for Priority Access to AI Compute Resources
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AI Model Marketplace

GrantChain introduces the first fully on-chain AI model marketplace where:

- Developers and researchers can upload trained AI models.
 - Smart contracts can access these models through standardized APIs.
 - AI providers earn \$GRANT tokens for every model execution.
 - zkML ensures that model execution is verifiable and tamper-proof.
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Autonomous AI Agents

GrantChain enables AI agents to:

- Manage on-chain assets and execute trading strategies.
- Interact directly with DeFi protocols, DAOs, and NFT platforms.

- Collaborate and negotiate with other agents in complex ecosystems.
 - Self-upgrade by consuming new AI models from the marketplace.
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Governance Framework

GrantChain governance is community-driven and AI-assisted.

- AI Copilot recommends governance proposals based on ecosystem data, protocol needs, and user sentiment.
 - Voting is weighted by staked \$GRANT tokens, with AI simulations providing impact forecasts for proposed changes.
 - Long-term governance will introduce predictive governance modules, where AI models help simulate the outcomes of major ecosystem decisions before votes occur.
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Roadmap

Phase	Milestones
Q2 2025	Protocol Development, Testnet Launch, Initial AI Model Marketplace Deployment
Q3 2025	Mainnet Launch, AI Agent SDK Release, First Autonomous AI Agents Deployed
Q4 2025	zkML Integration, AI Governance Copilot Launch, Staking and Incentives Live
2026+	Cross-Chain AI Agent Expansion, Fully Autonomous AI Governance DAO, AI Economic Zone Established

Conclusion

GrantChain represents the next evolution of blockchain — a fully AI-native Layer 2 that doesn't just run smart contracts but **thinks, learns, and acts autonomously on-chain**.

With its powerful AI infrastructure, seamless model deployment tools, and intelligent agent framework, GrantChain turns the blockchain from a passive ledger into an active ecosystem of intelligent, autonomous actors driving innovation across DeFi, NFTs, social platforms, and beyond.

GrantChain: Build Smarter. Fund Faster. Govern Intelligently.

