

GasGuard Subnet

Predictive Gas & Execution Risk Intelligence for Composed DeFi Transactions

A decentralized intelligence subnet that predicts gas cost, execution failure risk, and execution safety using miner-submitted simulations and validator-enforced scoring.

The Problem

DeFi composability is powerful but costly.

- Gas costs grow rapidly in composed transactions
- Transactions fail unpredictably
- Users lose funds even when execution fails

Problem Deep Dive

- Each contract call adds overhead and gas cost
- Protocols repeat balance and permission checks
- Storage writes (SSTORE) are among the most expensive EVM operations

Why Existing Solutions Fail

- Protocol-level optimizations are isolated and local
- Layer 2s reduce fees but do not solve composability complexity
- Manual batching is brittle and error-prone

Current tools react after failure. GasGuard acts before execution.

GasGuard Solution

GasGuard provides execution intelligence instead of rewriting protocols.

- Transaction Bundling to reduce call overhead
- Gas-Optimized Composition Patterns to eliminate redundancy
- Predictive Gas & Risk Intelligence to prevent failed execution

System Architecture

Transaction Analyzer → Gas Simulation Engine → ML-Based Risk Analyzer
→ User Warnings

Visual Architecture

<https://app.eraser.io/workspace/NkHOTU5CX8bUGDV0pzDZ>

Tech Stack

- Protocol: Bittensor
- Language: Python
- Simulation: Foundry, eth_call
- ML: NumPy, Pandas, Scikit-learn
- Backend: FastAPI
- Frontend: React, Tailwind
- Web3: ethers.js / viem
- Storage: PostgreSQL / SQLite

Bittensor Alignment

- Miners are rewarded for accurate and timely predictions
- Validators enforce quality through consensus-based scoring
- Incentives align intelligence, effort, and rewards

Proof of Intelligence & Effort

- Real computation is required through simulation and ML inference
- Higher-quality models earn higher rewards
- Learning compounds over time, strengthening the network

Market Opportunity

- Millions of dollars are lost annually to failed gas fees
- No neutral, decentralized execution-risk oracle exists
- Strong demand from wallets, protocols, and DeFi power users

Vision & Go-To-Market

GasGuard aims to become the execution safety layer for DeFi.

Initial users include power users, wallet developers, and yield aggregators.

Distribution through APIs, wallet plugins, and dashboards.