YUREI — Whitepaper

The On-Chain Ghost

AI-Powered Intelligence for Solana

1. Abstract

YUREI is an on-chain intelligence system designed to understand and interpret real-time activity on the Solana blockchain. By combining a low-latency data pipeline with Protocol NAVI — our custom on-chain LLM — YUREI transforms raw blockchain events into structured insights about wallets, flows, token behaviors, and emerging risks. Unlike traditional analytics tools that rely on centralized APIs, YUREI reads the chain directly, verifies state cryptographically, and uses AI reasoning to explain what is happening and why. The platform includes both a real-time agent and a deep reasoning model, accessible through a unified web interface with wallet connection support.

2. Introduction

The Solana blockchain processes massive volumes of real-time activity: token launches, wallet movements, liquidity shifts, and complex transactional patterns that evolve every second. While this data is public, it is extremely difficult for users and developers to interpret. Traditional dashboards only display charts or transaction logs, offering visibility but not understanding. Most analytic systems still depend on centralized APIs, rate-limited endpoints, or delayed indexing layers, preventing truly real-time insight.

As the ecosystem expands, identifying risks, abnormal flows, whale concentration, or suspicious patterns becomes increasingly critical. Solana users need intelligence, not raw data. YUREI aims to fill this gap by providing an AI-powered layer that can read, reason about, and explain on-chain behavior directly from the source. Combining high-frequency data ingestion, verification layers, and an integrated LLM, YUREI introduces a new way to understand what is happening on Solana — in real time and with context.

3. Problem Statement

Despite Solana's speed and transparency, understanding on-chain behavior remains a difficult and fragmented experience. Users can see transactions, but they cannot easily interpret what they mean. Wallet flows, whale activity, liquidity behavior, pump-and-dump patterns, or anomalous token distributions leave almost no readable context. Traders, developers, and analysts are forced to rely on centralized APIs, slow indexers, or expensive analytics platforms that still fail to provide meaningful real-time explanation.

Raw data is not intelligence.
People need insight — reasoning, patterns, risk signals, and context, not endless transaction logs.

Today, there is no native on-chain LLM that can reason about Solana's activity, verify it cryptographically, and explain it in human language.
No system interprets behavior.
No system connects events into meaning.
No system reads the chain as a whole.

This is the gap YUREI exists to fill.

4. YUREI Overview

YUREI is a real-time on-chain intelligence layer built on Solana, powered by a low-latency data pipeline and a custom LLM called Protocol NAVI. The system continuously streams blockchain events—transactions, account updates, token flows, and liquidity changes—through a high-performance gRPC-based geyser client. These events are validated, structured, and stored in PostgreSQL to form the core training and reasoning datasets.

YUREI operates through two synchronized components:

1. **The YUREI Agent** — a real-time event listener performing immediate analysis of wallet activity, token launches, whale movements, and abnormal patterns.
2. **Protocol NAVI (LLM)** — a deep reasoning model trained on curated on-chain datasets and verified state transitions. NAVI provides contextual explanations, pattern recognition, anomaly detection, and natural-language insights.

The architecture includes a web API bridging the model, geyser client, PostgreSQL, and web interface. A unified UI allows wallet connection and interactive intelligence. NFT and token holders gain enhanced utility such as priority intelligence access and deeper analysis layers.

YUREI bridges raw blockchain data with AI reasoning, enabling the chain to be not just indexed, but understood.

5. Architecture

YUREI's architecture is modular and high-performance, composed of:

5.1 Geyser Client

- Ultra-fast gRPC event ingestion (10–15µs latency)
- Streams account updates, liquidity changes, Raydium/pump.fun activity, token flows

5.2 Data Processing & Storage

- Normalization into unified schemas
- Validation, filtering, and corruption rejection
- Relationship mapping (wallets, pools, transfers)
- Storage in PostgreSQL with optimized time-series and sequence indices

5.3 Cryptographic Verification

Using **svm-state-prover**:

- verifies account states
- slot confirmations
- program integrity

5.4 NAVIC-FFI-Core (Rust ↔ C++ Bridge)

- zero-copy shared memory
- high-speed dataset transformation

5.5 Protocol NAVI (LLM)

- trained on chain datasets, simulations, flow sequences
- outputs contextual reasoning

5.6 YUREI Agent

- detects anomalies and patterns in real time
- triggers NAVI for deeper explanation

5.7 Web API

- central coordination layer for Agent, NAVI, database, UI

5.8 Web Interface

- wallet connect
- real-time dashboard
- NAVI reasoning panel
- enhanced modules for NFT/token holders

6. Protocol NAVI — The On-Chain LLM

Protocol NAVI is a custom LLM built to interpret Solana activity as structured language.

6.1 Purpose

- interpret complex behavior
- explain motives & patterns
- detect risks and anomalies

6.2 Training Data

- geyser event streams
- pump.fun behavior
- Raydium liquidity patterns
- synthetic manipulation simulations
- verified historical dataset snapshots

6.3 Reasoning Capabilities

- whale accumulation
- suspicious flows
- token distributions
- liquidity rugs
- wash trading patterns
- multi-wallet orchestrations

6.4 Interaction with the Agent

Agent detects → NAVI explains.

7. YUREI Agent — Real-Time Layer

Capabilities

- scans chain events instantly
- flags anomalies
- detects real-time risks
- monitors wallet flows
- tracks liquidity behavior
- generates immediate alerts

Outputs

- anomaly flags
- flow updates
- risk signals
- wallet behavior summaries

The Agent is the “eyes” of YUREI; NAVI is the “brain.”

8. Data Pipeline

Components

- microsecond-level gRPC ingestion
- event normalization
- validation and cleaning
- PostgreSQL time-series storage
- dataset generation via NAVIC-FFI-Core
- 24/7 continuous enrichment

The pipeline is the backbone enabling real-time AI.

9. Web Application

9.1 Wallet Connect

Supports Phantom, Backpack, Solflare, Ledger.

9.2 Two-Layer Intelligence

- **YUREI Agent:** live signals
- **Protocol NAVI:** deep reasoning

9.3 UI Tools

- token/wallet search
- flow & distribution charts
- anomaly indicators
- liquidity visualizations

9.4 Holder Benefits

- deeper insights
- faster refresh rate
- priority access
- exclusive modules

10. Tokenomics (1B Supply)

Total Supply: 1,000,000,000 YUREI

Launch: Pump.fun — no private rounds

Allocation

- 40% Community
- 25% Ecosystem/Development
- 20% Liquidity
- 10% Team
- 5% Treasury

Utility

- enhanced intelligence layers
- deeper analysis modules
- beta feature access
- governance (future)

11. NFT Utility (Ghost Pass / Cold Pass)

NFT holders gain:

- deeper NAVI reasoning
- extended Agent layers
- faster analysis
- advanced visual modules
- early feature access
- governance & reward perks
- synergy boosts with YUREI token

12. Open Source & Developer Ecosystem

YUREI's core components are open-source:

- **navic-ffi-core** (Rust ↔ C++ bridge)
- **svm-state-prover**
- **yurei-geyser-client**

Developers can contribute via PRs, feature proposals, or dataset tooling.

13. Roadmap

Q1

- Geyser client
- Data pipeline
- State prover
- Dataset generation
- Early NFT design

Q2

- Protocol NAVI v0.1
- Agent–LLM integration
- Ghost Pass NFT launch
- Beta (NFT holders)

Q3

- Web app release
- 2-layer intelligence UI
- Token launch on pump.fun
- Beta for token/NFT holders

Q4

- Public platform
- NAVI v1
- Developer SDK
- Ecosystem integrations

Long-term: autonomous intelligence layer for Solana.

14. Conclusion

YUREI introduces a new category of blockchain intelligence — one that reads the chain directly, interprets behavior, and delivers real-time insight through AI. Powered by Protocol NAVI and the YUREI Agent, the system transforms the rapidly shifting structure of Solana into explainable, verifiable intelligence. With open-source components, a community-driven token model, and a long-term vision of autonomous chain understanding, YUREI sets the foundation for the future of on-chain AI.