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WHITEPAPER

NUKE.FARM:
THE AUTONOMOUS INTELLIGENCE LAYER FOR PREDICTION MARKETS

1. Executive Summary

Prediction markets have emerged as the "truth machine" of the internet, with Polymarket leading the charge in volume and accuracy. However, the ecosystem faces two critical barriers to mass adoption: Cognitive Overload (the difficulty of analyzing complex resolution criteria against real-time data) and On-Chain Friction (gas fees, bridging, and wallet management).

Nuke.Farm is an AI-powered trading terminal designed to solve these specific friction points. By deploying autonomous AI agents powered by Gemini 3 Flash, Nuke.Farm finds, analyzes, and executes positive Expected Value (+EV) bets. We combine this intelligence layer with a robust infrastructure layer utilizing Gnosis Safe proxies and Relayers to offer a 100% gasless, non-custodial, and seamless trading experience. Nuke.Farm represents the transition from manual speculation to automated, data-driven quantitative analysis for the retail trader.

2. Market Landscape & Problem Statement

While Polymarket offers deep liquidity and diverse markets, the user experience currently favors sophisticated actors and bots over retail participants.

2.1 The Analysis Paralysis

Prediction markets rely on strict legal definitions found in "Resolution Criteria." To place an informed bet, a user must:

1. Read and parse complex textual rules.
2. Scrape real-time news to gauge the probability of the outcome.
3. Calculate the implied probability from the order book.
4. Determine if a mathematically positive edge exists. Doing this manually is slow and error-prone. Most retail users bet based on sentiment rather than data, leading to capital inefficiency.

2.2 The UX Barrier

Despite improvements in Layer 2 scaling, interacting with Polygon still presents hurdles for the average user:

- Gas Management: Users must hold MATIC for fees and USDC.e for collateral.
- Transaction Fatigue: Repeatedly signing wallet popups for approvals and orders breaks the flow of high-frequency trading.
- Bridging Complexity: Moving funds from Solana or Bitcoin to Polygon remains a high-friction process.

3. The Nuke.Farm Solution

Nuke.Farm abstracts the complexity of both the market and the blockchain.

3.1 The AI Quantitative Analyst

We do not use AI simply as a conversational interface. Nuke.Farm deploys LLMs as quantitative analysts. When a user selects a market (e.g., Sports, Politics, Crypto), the agent:

- Ingests Rules: Reads the specific resolution criteria from the smart contract.
- Verifies Reality: Performs live web searches to gather ground-truth data (e.g., live polling averages, injury reports, court filings).
- Calculates EV: Compares the AI-derived probability against the live Central Limit Order Book (CLOB).
- Sizes the Bet: outputs a Kelly Criterion recommendation for optimal stake sizing.

3.2 The Gasless Infrastructure

Nuke.Farm utilizes the Gnosis Safe architecture to ensure users never pay for gas. By leveraging Meta-Transactions (EIP-2771/EIP-712), users sign "intents" rather than transactions. A centralized Relayer creates the transaction and pays the gas, executing the trade on the user's behalf via a deterministic proxy wallet.

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4. Technical Architecture

The platform is built for speed, accuracy, and security, utilizing a modern stack tailored for high-frequency interaction with the Polymarket protocol.

4.1 Core Stack

- Framework: Next.js 14 with TypeScript.
- AI Engine: Google Gemini 3 Flash server actions for low-latency inference.
- State Management: Postgres for caching analysis results to prevent redundant LLM calls and enable historical backtracking.

4.2 Data Integration & Mapping

A significant challenge in the Polymarket ecosystem is mapping high-level Event data to low-level CLOB Token IDs. Nuke.Farm implements a custom recursive resolution utility (clob.ts) that accurately maps "Yes/No" outcomes to their specific ERC-20 hex identifiers. We interface directly with Polymarket's Gamma API for metadata and the CLOB API for real-time order book depth and execution.

4.3 Optimistic UI Patterns

To balance the latency of LLM generation with the need for a snappy UI, we implement optimistic loading states ("CrabSpinner") and a tiered caching layer. Previously analyzed markets are served instantly from postgres, while fresh data is fetched asynchronously.

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5. Security & Account Abstraction

Security is paramount. Nuke.Farm adheres to a strictly Non-Custodial model. We do not hold user funds; we facilitate the technology for users to control their own smart contract wallets.

5.1 Gnosis Safe Proxies

Every user is assigned a unique Gnosis Safe Proxy derived deterministically from their EOA (Externally Owned Account) signer. All funds (USDC.e) reside in this Safe, ensuring institutional-grade security standards native to the Polygon ecosystem.

5.2 Session Keys

To eliminate the need for users to sign a transaction for every single trade, Nuke.Farm implements Session Keys.

- The user signs a message once to authorize a temporary, locally stored session key.
- This key is authorized to execute trades on the Gnosis Safe for a set duration.
- This results in a "Web2-like" one-click trading experience without compromising security.

5.3 Privacy

AI analysis strategies are generated server-side, but trade execution logic occurs client-side via the Relayer. Users' private keys never touch Nuke.Farm servers.

6. Ecosystem Integration

Nuke.Farm acts as a power-user GUI (Graphical User Interface) for the underlying Polymarket protocol.

- Liquidity Driver: By identifying inefficiencies and mispriced odds, Nuke.Farm drives volume to the Polymarket CLOB, aiding in faster market discovery and tighter spreads.
- Cross-Chain Bridge: To solve liquidity fragmentation, the application features a built-in BridgeWidget. This allows users to deposit assets from Solana, Bitcoin, and Ethereum directly into their Polygon Gnosis Safe, automatically handling the swap to USDC.e.

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7. Business Model & Tokenomics

Nuke.Farm operates on a sustainable "Pay-per-Insight" model, aligning platform revenue with user success.

- Freemium Layer: Users access basic market data and limited AI analysis for free.
- Premium Insights: Deep-dive EV calculations and specific "Nuke" trade execution strategies require a micropayment. This is handled via a transferUSDC function within the trading context, routing a small fee from the user's Safe to the Treasury seamlessly.

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8. Roadmap

Phase 1: The Terminal (Current)

- ☑ Launch of Next.js interface.
- ☑ Integration of Gemini 3 Flash for single-market analysis.
- ☑ Implementation of Gnosis Safe Relayer for gasless trading.

Phase 2: Consensus Engine

- ☐ Implementation of "Multi-Model Consensus." The agent will query Gemini, GPT, and Claude simultaneously.

- [ ] Trades are only recommended when a consensus on probability is reached across all three LLMs, reducing hallucination risk.

Phase 3: Telegram & Mobile

- [ ] Porting the AnalyzeButton logic to a Telegram bot.
- [ ] Mobile-first alert system allowing users to execute pre-authorized trades via chat commands.

Phase 4: Automated Vaults

- [ ] Transition from human-confirmed trades to fully autonomous vaults.
- [ ] Users deposit USDC into a strategy vault (e.g., "Political Arb Vault"), and the AI agent executes trades automatically 24/7 based on strict risk parameters and EV thresholds.

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9. Conclusion

Nuke.Farm is not just a betting tool; it is an infrastructure and intelligence upgrade for the prediction market ecosystem. By combining the reasoning capabilities of Large Language Models with the security of Gnosis Safe account abstraction, we provide retail users with the tools previously reserved for institutional market makers.

Explore the future of prediction markets at nuke.farm.

Disclaimer: Nuke.Farm is a software interface. It does not act as a financial advisor or custodian. Prediction markets carry financial risk. Users should exercise their own judgment and due diligence before participating.