αlpha DeepFi WhitePaper

Alpha DeepFi — Whitepaper (v0.4, Non-Custodial Concept)

Last updated: September 2025

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1) Abstract

Alpha DeepFi is a decentralized protocol for AI-powered, risk-managed yield strategies, built fully non-custodially on Solana.

Users deposit into vaults, which are smart contracts with pre-coded guardrails. Funds never leave-chain, and no operator has custody. Instead, AI bots act as keepers: monitoring markets and submitting hedge/rebalance/entry calls to vault contracts.

Vaults integrate with Solana-native derivatives protocols like Zeta Markets, Drift, Mango, PsyOptions, and Phoenix, so hedging and directional exposure remain entirely on-chain.

Flagship vaults:

- Delta-controlled hedged strategies (basis carry, perp funding harvest, hedged short-vol).

- AI Directional strategies — forecasts open positions only when model confidence is high.

A native utility token, $ALDAI (Solana SPL), underpins capacity access, fee discounts, and governance signaling. 30% of protocol fees are burned automatically.

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2) Problem

- Complex execution: Managing hedges across venues is costly and error-prone.

- Opaque risk: Many "high APY" products hide leverage, illiquidity, or

short gamma.

- **Liquidity fragmentation: Solana has multiple perp/option venues, each with different pricing/liquidity.**

- **Trust issues: Custodial services pose counterparty risks; users want non-custodial access.**

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3) Solution Overview

Alpha DeepFi solves this by packaging strategies into on-chain vaults with:

- **Policy specs: asset universe, hedge bands, drawdown caps, kill-switches.**

- **Mechanized guardrails: max $|\Delta|$, re-hedge thresholds, position limits.**

- **Agentic AI execution: off-chain models submit transactions to contracts; never custody funds.**

- **Integrations: Solana DEXs & derivatives (Zeta, Drift, Mango, PsyOptions, Phoenix).**

- **Attestations: signed logs + on-chain checkpoints for NAV, exposure, and fees.**

Users get vault share tokens (SPL) representing proportional claim on strategy assets and PnL.

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4) Core Products (Phase 1 & 1b)

4.1 Delta-Controlled Basis Carry

- **Goal: harvest perp funding spreads while hedging delta.**

- **Mechanics: spot/perp pairs, adaptive re-hedge bands.**

- **KPIs: net APY after fees/slippage, tracking error, hedge cost efficiency.**

4.2 Strictly Hedged Short-Volatility

- **Goal: earn premium from short-dated options while hedging continuously.**

- **Mechanics: short 1D–7D options with automated delta hedges.**

- **KPIs: Sharpe ratio, max drawdown, hedge cost %, stress scenarios.**

4.3 AI Directional Vaults

- **Goal: capture short-term directional alpha with risk caps.**

- **Models: transformer/MoE, trained on order book flow, funding/OI, vol surface, on-chain flow.**

- **Execution: only trades when $p(up|down) >$ threshold; Kelly-capped sizing; flatten in stressed regimes.**

- **KPIs: hit-rate, information ratio, alpha half-life, slippage costs.**

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5) RWA Yield On-Ramp (Phase 2, optional)

- **Whitelisted KYC pools linked via licensed SPV.**

- **Example: tokenized T-bills via regulated custodians.**

- **Not available in all jurisdictions.**

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6) Architecture

- **Chain: Solana mainnet; low fees, high throughput.**

- **Vaults: SPL vault tokens, ERC-4626-equivalent pattern.**

- **Integrations: Zeta, Drift, Mango, PsyOptions, Phoenix (and future venues).**

- **AI Layer: off-chain models run inference, submit calls to smart contracts. No custody.**

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- **Oracles: redundant feeds (Pyth, Switchboard); medianization + staleness guards.**

- **Security: multisig + timelock on upgrades; public audit trails; external audits.**

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7) Token Utility ($ALDAI)

- **Stake for access & capacity (vault slots, capped launches).**

- **Fee discounts (tiered management/performance fee reduction).**

- **Voting signals (staked holders vote on next vaults/products to trial).**

- **AI research perks: stakers access signal telemetry & inference credits.**

- **VIP NFTs:**

  - **≥ 50,000 $ALDAI = Lifetime NFT with 10% discount.**

  - **≥ 300,000 $ALDAI = High-Tier NFT with 30% discount.**

- **Burn: 30% of all protocol fees burned automatically on Solana.**

Supply: 1B $ALDAI SPL tokens

- **Community incentives: 20%**

- **Ecosystem/partners: 15%**

- **Treasury: 20%**

- **Team: 20% (6m cliff + 18m vest)**

- **Public Sale: 10%**

- **MM & market health: 10%**

- **Infra/Advisors: 5%**

Target circulating supply: 8–12% at launch.

8) Fees & Economics

- Management: 0–0.5% p.a.

- Performance: 5–15% of realized gains.

- Burn: 30% of protocol fees auto-burned (weekly cadence).

- Remaining 70%: audits, infra, liquidity, staker rewards.

- Proof-of-Yield: weekly reports; real-time NAV; transparent accrual.

9) Risk, Safety & Ops

- Guardrails: max delta/gamma, loss caps, venue caps.

- Kill-switch: auto-neutralize on oracle failure or extreme slippage.

- Stress tests: Monte Carlo + historical.

- Security: audits, bug bounties, staged rollout.

10) Community Direction Signals

- Stake-to-vote: stakers vote on which vaults/features to prioritize.

- Pre-launch Alpha Trials: small-cap trial vaults with shadow-mode first.

- Deposit signals: vaults filling fastest get scaling priority.

11) Launch & Liquidity

- IDO/IEO: Solana launchpad or Gate.io.

- Liquidity: SOL/$ALDAI pool with MM.

- TGE & Vesting (public):

- 10% unlock at 30 days post-TGE.

- Months 2–8: 15/15/15/15/10/10/10%.

- Linear per month; no early exit.

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12) Roadmap

- **Q4'25: token generation, IDO, Testnet vaults (basis, hedged short-vol, AI directional shadow). Audit #1.**

- **Q1'26: Mainnet v1, token IEO, Proof-of-Yield reports.**

- **Q2'26: More venue integrations (Mango, Phoenix), Alpha Trials expansion, Audit #2.**

- **H2'26: Expanded vault catalog, RWA partner integrations, institutional APIs.**

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13) Compliance & Disclaimers

- **Non-custodial: contracts enforce custody; Alpha DeepFi does not custody funds.**

- **Utility token: $ALDAI is not an investment contract.**

- **Restrictions: Not available in U.S., UK, EU retail, SG, HK, or sanctioned regions.**

- **Risk: crypto strategies carry loss-of-principal risk.**

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14) Team, Advisors, Partners

Angus — Founder & Lead Architect

- **Professional crypto investor with over a decade of experience in trading and digital assets.**

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- **AI developer with a Master's degree in Data Science & Artificial Intelligence.**

- **Background in quantitative strategies, DeFi product design, and blockchain-based AI applications.**

- **Leads the vision and technical design of Alpha DeepFi, integrating advanced AI forecasting with fully non-custodial on-chain vaults.**

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15) Glossary

- **SPL Token: Solana's native fungible token standard.**

- **Delta/Gamma: sensitivities to underlying moves.**

- **Basis carry: yield from spot vs perp spreads.**

- **Keeper bot: off-chain agent triggering contract functions, not custody.**

Contact

- **Website: Alpha DeepFi (http://www.alphadeepfi.com)**

- **Docs: Litepaper (this)**

- **Community: TBA**