

Shiva Shanmuganathan | Senior Smart Contract Engineer

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With **3+ years of experience in Blockchain**, I specialize in building and scaling highly modular, production-grade upgradable smart contracts across DeFi, gaming, and cross-chain systems with ERC-2535 Diamond Standard. Led smart contract development for [Crypto Unicorns](#), which hit **\$100M TVL**, **\$25M+ in NFT volume**, **\$2.5B FDV** at token launch, and over **50K DAU** at its peak.

KEY ACHIEVEMENTS

- **Architected and deployed 20+ Diamond Proxy projects (ERC-2535)** comprising **250+ facet contracts** and **50K+ lines of Solidity code**, powering the production-scale backend for Crypto Unicorns, including **asset creation and management**, **game economy**, **war mechanics**, **permissioned systems**, and **onchain marketplaces**.
- **Led the development of the fully onchain war game**, where players engage in a battle between Shadowcorns and Unicorns. Orchestrated **157K+ squad deployments** and **27K+ battles** over 60 days. **Implemented a queue-based rewards system**, driving **\$1.5M in user rewards** and achieving a **+70% retention rate** for daily active wallets, all built on **Diamond architecture** with advanced combat logic.
- **Led full ecosystem migration of 200+ contracts from Polygon to Xai (Arbitrum L3)** using **ERC7201 (namespaced storage)**. Achieved **90%+ user retention**, **\$12.9M TVL**, and over **900K+ transactions**. Integrated **cross-chain token bridges** for **\$CU**, **\$RBW**, and **\$UNIM** using **LayerZero and Arbitrum**.

TECHNICAL SKILLS

- **Programming Languages:** Solidity, Python, Typescript, Rust
- **Development:** Foundry, Hardhat, Truffle, EthersJS, Web3JS, React, Test Driven Development, Github Actions
- **Security analysis:** Woke, Foundry Fuzz

EXPERIENCE

LAGUNA GAMES | SENIOR SMART CONTRACT ENGINEER

MAY 2022 – FEB 2025

CRYPTO UNICORNS

Core Systems Development

- **Engineered the full lifecycle architecture for Crypto Unicorns:** from Unicorn minting, land-based farming, and crafting to battle loops and PvP mechanics. Designed foundational contracts powering the game economy, asset flow, and progression loops.
- **Game Bank:** Architected the core smart contract system managing all in-game assets and token flows, supporting 50K+ daily active users across the Crypto Unicorns ecosystem.
- **Satellite Bank:** Designed and developed a modular Diamond-based system to securely integrate 2nd-party and casual games like Unigatchi, Rainbow Rumble, and Unicorn Party, enabling scalable external game integrations while preserving core economy integrity.
 - Role-Based Permissions for granular access control
 - App Economy Support for in-app fees
 - Queue + Server-Side Signing for tamper-proof reward distribution

Ecosystem Infrastructure

- Built onchain marketplace with auctions, dynamic fees, and bundled listings, enabling 100K+ trades and \$10M+ volume. Created Keystone-gated Land Vending Machine using bonding curves, distributing 10K+ NFTs and driving 2,000+ ETH in sales.

Key Assets Development

- **Unicorns:** ERC721 tokens with onchain genetic encoding (via bit manipulation) used for farming, battles, and breeding.
- **Shadowcorns:** PvP-specialized NFTs powering raids, minion breeding, and faction battles. Core asset in Twilight Tactics and Shadowforge systems.
- **Land:** Virtual real estate where players can build farms, breed Unicorns, and generate in-game resources. Land NFTs are central to the game's play-to-earn mechanics

Gameplay Architecture

- **Farm Loop & Economy:** Engineered land-based farming, breeding, crafting, and questing systems using tokenized assets (\$CU, \$UNIM). Developed interoperable core contracts with 90%+ user retention and contributing to \$45M+ in digital asset sales.
- **Battle Loop:** Designed and implemented onchain PvP/PvE systems including Jousting, Racing, Tribes, and Team RPG using Diamond architecture. Supported progression, leaderboard mechanics, and tournament payouts, enabling \$2M+ in rewards.
- **Shadowforge and Twilight Tactics(PvP):** Built the onchain PvP loop with queue-based rewards, 5-region combat, and NFT burn mechanics. Designed a scalable minion breeding engine with squad deployment and leaderboard mechanics.

NEO OLYMPUS

As the Founding Engineer, developed the core asset and presale system of Neo Olympus

- **Primecore (Neo Olympus):** Designed and developed PrimeCore token using hybrid DN404 + Diamond Standard architecture. featuring a reroll function, allowing users to spend \$PC tokens to change NFT metadata via UniswapV3 swaps.
- **Primecore Presale (Neo Olympus):** Built a gas-efficient presale system using Merkle Tree for fair token distribution, and efficient allowlist management.

PROJECTS

💎 Fullstack Dynamic NFT Mini Game (Personal Project, 2022)

Designed and built the first open-source, fullstack game using the Diamond Standard (EIP-2535), a modular NFT battle game where players mint dynamic Hero NFTs and battle an onchain boss.

- Onchain gameplay mechanics with dynamic metadata updates on battle and staking-based healing.
- Built a collateral-free NFT rental marketplace, allowing owners to rent out NFTs with time-bound usage restrictions and automatic return enforcement.
- The project gained recognition from Nick Mudge (author of Diamond Standard), and referred me to Laguna Games.

Tech stack: Solidity (Diamond Pattern), Hardhat, React, Mumbai Testnet, IPFS, EthersJS

EDUCATION

- Rareskills: Rust Bootcamp (May 2025)
- Rareskills: Advanced Solidity Bootcamp (2022 – 2023)
- Encode Club: ZK Bootcamp (April 2023)
- Encode Club: Expert Solidity Bootcamp (Febraury 2022)
- Consensys: Blockchain Developer Bootcamp (2021)
- SRM University: Bachelor of Technology in Computer Science Engineering (2017 - 2021)

BLOGS

- Authored 8 comprehensive blogs documenting key systems behind Crypto Unicorns and Neo Olympus, including smart contract architecture, gameplay loops, asset design, and economic mechanisms.
 - Read: <https://slinga-web.vercel.app/blog>