

Aleksei Diakonov

Senior Senior Blockchain Engineer

SUMMARY

- Blockchain engineer with 5 years in DeFi, cross-chain infrastructure, and EVM smart contracts, specializing in AMM math, precision-safe arithmetic, and gas optimization.
- Proficient in Solidity, TypeScript, C++, Python; skilled in security tools like Slither and Echidna, with Code4rena audit experience.
- Led design of cross-chain messaging protocols supporting 21 blockchains, achieving 44% gas cost reduction and \$500K+ annual savings.
- Developed concentrated-liquidity AMM and liquid staking protocols with rigorous invariant validation and 100% unit test coverage using Foundry.
- Experienced in CI/CD, fuzz testing, static analysis, and formal security reviews within Agile environments.

TECHNICAL SKILLS

Main Technical Skills	Solidity (5 yr.), TypeScript, JavaScript, C/C++/C# (1 yr.), Python
Programming Languages	JavaScript, Python, Solidity (5 yr.), TypeScript
C++ Libraries and Tools	C/C++/C# (1 yr.)
JavaScript Libraries and Tools	Drizzle, Ethers.js
JavaScript Frameworks	Node.js (1 yr.)
Databases & Management Systems / ORM	PostgreSQL (1 yr.), Redis
Message/Queue/Task Brokers	BullMQ
Deployment, CI/CD & Administration	CI/CD (2 yr.), SALT (2 yr.)
Blockchain and Decentralized Software	DeFi (3 yr.), Ethers.js, Foundry (2 yr.), Hardhat (3 yr.), NFT (1 yr.), Truffle, Viem
Virtualization, Containers and Orchestration	Docker
Version Control	Git
Operating Systems	Linux
QA, Test Automation, Security	Usability tests (2 yr.)

Other Technical Skills	math analysis (3 yr.), Slither
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WORK EXPERIENCE

Senior Blockchain Engineer - Entangle (Universal Interoperability Protocol (UIP))

Duration: 01/2025 – Present

Summary:

- UIP is a production messaging and liquidity-transfer protocol connecting heterogeneous blockchains including EVM, Solana, and TON
- It enables seamless cross-chain communication and asset transfers, facilitating interoperability across multiple blockchain networks

Responsibilities:

- Architected smart contracts for cross-chain message verification using light-client proofs with chain-agnostic design.
- Developed adapters for Axelar, LayerZero, and Wormhole to enable migration to UIP without code changes.
- Implemented gas-efficient batch signature validation reducing cross-chain transaction costs significantly.
- Integrated 21 blockchain networks including Ethereum, BSC, Polygon, Solana, and others.
- Configured CI/CD pipeline with Echidna fuzz testing and Slither static analysis achieving near 100% branch coverage.
- Performed internal security review and remediated replay-attack vector before production deployment.

Technologies: Solidity, Hardhat, Echidna, Slither, Foundry, ethers.js, Viem, Docker, Linux, Git

Blockchain Developer - TorusChain (Torus)

Duration: 10/2022 – 01/2025

Summary:

- Torus is a Delegated Proof of Stake (DPoS) EVM-compatible Layer 1 blockchain with a native DeFi ecosystem including AMM, liquid staking, and bridges
- It aims to provide scalable and secure blockchain infrastructure with integrated DeFi services

Responsibilities:

- Designed and implemented a concentrated-liquidity AMM inspired by Uniswap V3 with advanced tick-based accounting and fixed-point arithmetic.
- Engineered Liquid Staking Protocol with rebasing token mechanics, delegation queue, and slashing protection.
- Developed Arbitrary Messaging Bridge featuring fraud-proof challenge window and optimistic verification.
- Built NFT Marketplace with off-chain order signing and royalty enforcement (ERC-2981).
- Maintained ~100% unit-test coverage using Foundry and led internal audit review cycles.



Technologies: Solidity, Foundry, Hardhat, ethers.js, TypeScript, Node.js

Blockchain Developer - DDG LLC (Novarally, Stadio, CreditMetaverse)

Duration: 08/2021 – 10/2022

Summary:

- Developed multiple Web3 projects including Novarally (a play-to-earn game), Stadio (a white-label NFT marketplace), and CreditMetaverse (an NFT-collateralized lending platform)
- These projects focus on GameFi, NFT infrastructure, and decentralized finance

Responsibilities:

- Developed NFT-backed lending protocol enabling borrowing against NFT collateral with liquidation triggers.
- Wrote C++ smart contracts for EOSIO and custom node plugins handling in-game events.
- Designed off-chain indexer using Node.js and PostgreSQL for real-time NFT attribute search with low latency.
- Implemented Hardhat test suites with property-based edge-case tests ensuring ~100% business logic coverage.

Technologies: C++, Solidity, Hardhat, Node.js, PostgreSQL, EOSIO

EDUCATION

- **Bachelor's Degree in Computer Science**
Saint Petersburg Electrotechnical University 'LETI' | Graduated 08/2022

