Kumar J

Senior Blockchain Developer, 6+ years experience
SF, United States
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Senior Blockchain Developer with deep expertise in Solana, Rust, and advanced on-chain systems including Light Protocol, Compressed Accounts, and Pyth Network integrations. Skilled in zero-knowledge proof systems such as Groth16, Circom, SnarkJS, and Merkle proof construction and verification. Experienced in building secure, high-performance decentralized applications and cross-chain solutions. Proficient in Solidity, Ethereum smart contracts, IPFS, Chainlink CCIP, and gRPC-based communication. Adept at designing scalable blockchain architectures and optimizing cryptographic workflows. Passionate about emerging Web3 technologies and delivering robust, production-ready blockchain solutions.

INDUSTRIES: Blockchain

TECHNICAL SKILLS

• Rust	6 years & 1 months
• Ethereum	5 years & 9 months
• Solidity	5 years & 9 months
• Solana	3 years & 5 months
• zero knowledge proofs	2 years & 9 months

PROJECT DETAILS

• stervault.rippner.com

Project Description: Built traditional financing experiences on solana chain
Responsibilities: Built traditional financing experiences on solana chain with smart contracts development in anchor, web application development in nextjs and pyth onchain oracles for live spl token prices to perform interest accrued deposits, collateral backed borrowing and share based users spl token balances tracking
Technologies: solana, anchor, ipfs, nextjs
Industry: Blockchain
Link: https://stervault.rippner.com/

• cloak-minster-ballot.rippner.com

Project Description: cloak-minster-ballot.rippner.com - Built zero knowledge proof based voting market.
Responsibilities: Zero knowledge proofs are powered by circom, groth16, and off chain merkle and indexed merkle trees to track valid voter memberships. Deployed IPFS node for decentralised off chain storage to store serialised merkle trees to avoid to everytime re-constructions
Technologies: solana, circom, zero knowledge proofs, circom, groth16, ipfs, indexed merkle trees
Industry: Blockchain
Link: https://cloak-minster-ballot.rippner.com

• meridian-link

Project Description: github.com/RippnerLabs/meridian-link - Building a to and fro cross chain token bridging platform between solana and any EVM based chain powered by zero knowledge proofs and compressed onchain accounts.
Responsibilities: Solana bridge is powered by lightprotocol with compression api and prover endpoint to store millions of compressed deposit and withdrawal records onchain. EVM bridge is powered by ERC20 tokens and security vulnerabilities like double withdrawals are mitigated by onchain nullifiers tracking and off chain ethereum deposit and withdrawals tracking on IPFS. Circom circuits are used to generate proofs for both solana and ethereum deposits. A trusted relayer is setup to listen to deposit records on both chains to perform withdrawals on the destination chain with validity proofs.
Technologies: solana, ethereum, solidity, anchor, rust, ipfs, circom, merkle trees
Industry: Blockchain
Link: https://github.com/RippnerLabs/meridian-link

EMPLOYMENT HISTORY

• Senior Blockchain Developer

Description: stervault.rippner.com - Built traditional financing experiences on solana chain with smart contracts development in anchor, web application development in nextjs and pyth onchain oracles for live spl token prices to perform interest accrued deposits, collateral backed borrowing and share based user’s spl token balances tracking cloak-minster-ballot.rippner.com - Built zero knowledge proof based voting market. Zero knowledge proofs are powered by circom, groth16, and off chain merkle and indexed merkle trees to track valid voter memberships. Deployed IPFS node for decentralised off chain storage to store serialised merkle trees to avoid to everytime re-constructions github.com/RippnerLabs/meridian-link - Building a to and fro cross chain token bridging platform between solana and any EVM based chain powered by zero knowledge proofs and compressed onchain accounts. Solana bridge is powered by lightprotocol with compression api and prover endpoint to store millions of compressed deposit and withdrawal records onchain. EVM bridge is powered by ERC20 tokens and security vulnerabilities like double withdrawals are mitigated by onchain nullifiers tracking and off chain ethereum deposit and withdrawals tracking on IPFS. Circom circuits are used to generate proofs for both solana and ethereum deposits. A trusted relayer is setup to listen to deposit records on both chains to perform withdrawals on the destination chain with validity proofs. npmjs.com/package/@jayanth-kumar-morem/snarkjs-to-solana - Developed a toolkit for converting snarkjs artifacts to Solana-compatible formats. Converts a snarkjs verification key JSON file to a Rust file compatible with Solana's groth16 verifier. The package automatically detects the environment i.e., bundler, web or nodejs and loads the appropriate wasm pack generated js code to help with converting proof’s G1 points. Used Arkworks rust crate to negate point A and change Endiannes. npmjs.com/package/@jayanth-kumar-morem/indexed-merkle-tree - TypeScript and Circom implementation of Indexed Merkle Trees with Poseidon hash function support for generating and verifying non-membership proofs. npmjs.com/package/@jayanth-kumar-morem/sparse-merkle-tree

EDUCATION

• Masters degree in Computer Science from IIT Madras 2018 - 2020

LANGUAGES

• English - native

END OF DOCUMENT
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