JAYAKUMAR S

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Technical Skills

Languages : Solidity , JavaScript , Python , Rust .
FrameWorks : Node js , Web3 js , Ether js, Viem , React js .
Tools : Foundry , Hardhat , Truffle , Brownie , Ape , Remix.

Experience

Trugard Labs
Feb 2023 - jan 2025

Smart contract Research Engineer — *remote*

- Developed an automation tool for contract and wallet security on EVM blockchains.
- Researched and implemented a **digital signature module using OpenZeppelin libraries, leading to the discovery of multiple scam networks, including a $1 million scam on the Base network in August 2024**.
- Implemented a **bytecode analysis module incorporating fuzzing and low-level transaction simulation on a mainnet fork within a Python-based environment.**
- Researched static analysis tools such as **Slither, Rattle, MythX and wake, developed custom modules like Hidden Mint and Hidden Balance** for detecting rug pulls and scams.
- **Conducted research and experimentation on dynamic analysis tools (Echidna, Halmos, Manticore), decompilers (Heimdall, Dedaub), and formal verification tools (Certora).**
- **Tracing malicious wallets using transaction analysis, pattern matching and investigated ML model hits.**
- Assisted in ML model development by preparing datasets, reviewing results, and adding new features.
- Supported the above developments on the engineering side by deploying them in a Docker and Kubernetes setup, including interactions with G-Cloud, ArangoDB, and ETL pipelines.

GuardianLink
March 2022 - Dec 2022

Blockchain Developer — *Chennai,Tamilnadu*

- Researcher at **Guardian link and Jump.trade marketplaces with $400k– $500k monthly trading volume.**
- Engaged with Internal **Smart Contract Auditing** and **Research** of new frameworks and tools.
- Researched and developed POCs for **Raffling, ENS, EIP-998, auctions, and ERC-721 variants.**
- Research and developed POCs of new **custom blockchains in Avalanche and Cosmos**.
- Implemented NFT drop with **Merkle tree authentication and raffle mechanism** for random allocation.
- Developed an **CI/CD pipeline with automated scripts for metadata generation, image stitching, and rarity plots using Python** for NFT project **MCL, which generated $1.2 million in revenue during the drop** and achieved **monthly trading volumes of $100,000 − $150,000**.
- Research and Implementation of **prediction smart contracts similar to pancake swap prediction platform** with custom features such as **automated house bets, automated funds collection and distribution**.

Blockchain App Factory
Sep 2021 - Nov 2021

Blockchain Developer Intern — *Chennai,Tamilnadu*

- Worked in a **TDD** set-up, focusing on **Attack-Vector analysis** using security tools and manual analysis.
- **Decreased deployment fee and gas fees by 30%** by optimizing and restructuring code flow.
- Developed automated script in Typescript which queried more than **100K random numbers continuously without any breakage** with help of **ChainLink oracle in Polygon Mainnet for dynamic NFT generation.**
- Created a **Token Bridge(ETH-BSC)** with Burn and Mint Interfaces and utilized **Web3 js** for **listening events**.

BYTEX
Aug 2021 - Sep 2021

Blockchain Developer Intern - ⚙ — *Remote*

- Created Two **ERC20 Tokens and a De-fi Staking smart contract** entirely from scratch.
- Integrated above mentioned smart contracts with an attractive **front-end with a Complete test suite.**

Projects

EVM Storage Slot Reader (Open Source) - ⚙ - Live

- Designed a tool to decode storage slot values on the fly for verified and unverified contracts on EVM-compatible chains.

Proof-Of-Stake(Prototype) - ⚙

- P2P connection established,Nodes automatically sync with each other when a transaction is posted.
- Implemented Block validation,Signature Validation,Transaction Validation and POS consensus protocol.
- Created API endpoints for Blockchain state, Info , Transaction pool and Transaction.

Achievements

- **Winners of CERTORA capture the spec** at de-fi security summit 2024.
- Won Multiple Bounties at ETH GLOBAL and Devfolio Hackathons around the globe. (in-person)
- Completed CTF's like Damn Vulnerable De-Fi - ⚙ , Rare Skills Gas-puzzles - ⚙ , Ethernaut , Paradigm CTF's.