Abhijit Roy

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👤 Profile

I am an Agnostic Software Engineer specialized in Blockchain technology with 8 years of experience as CTO, HoD, Lead/Senior Blockchain Engineer in multiple Web3 startups/projects mostly in Smart contract & Backend in DeFi, NFT, Gaming, Protocol, etc. I hold development experience in multiple protocols like EVM, EOSIO, Substrate, Solana; contributed in many open-source projects as well.

I have consistently delivered high-quality work across multiple projects. Despite facing challenges like funding issues or μ-management style in the past, my focus on producing stellar results has remained unwavering.

🖥️ Experience   **9** years

🎓 Education

2014 – B.Tech in Avionics, **IIST**, Trivandrum

👤 Coding Languages

Rust, Solidity, TypeScript, Python, C++

🏅 Achievements

- Contributed to Opensource projects: Subspace, LayerZero, STARK Winterfell, Uniswap v2, OpenZeppelin, Telos Blockchain, STFX (Perpetual), Substrate Runtime & SC ink lang, Rustlings, Sui.
- Developed Polygon's native stablecoin (DeFi) using a multi-collateral CDP approach, incentivized staking to prevent liquidation, informed by research into MakerDAO, Liquity and Yeti Finance.
- Bagged 2nd rank in SNI Hack 2021 competition as EOSIO Blockchain Developer (also Presenter) for a project "Ceven.Parks".
- Built the architecture of GameFi project – "Bowled.io" with play-to-earn Game-Fi intent using different types of cards as NFT categories.
- Represented DRIFE as CTO at WBS in 2018, where it ranked as best start-up in utility tokens category. Later, it received UNESCO award for its innovation in 2022.

💼 Career Timeline

Aug 2024 — Present | UniFi
- Researched & developed a novel highly scalable EVM Gasless Engine lowering on-chain fees by upto ↓84% supporting both custodial/non-custodial wallets. | Rust, Solidity.
- Built a modern, beautiful, responsive UI-based WASM web app with Tailwind. | (Dioxus) Rust, CSS.
- Built a secure OTP system ensuring unique 6-digit codes within the 1M space using efficient allocation and expiry handling. | Rust.
- Developed & deployed the Backend with API, Proxy servers (in Axum, ..); native modules — Auth, Payment, Wallet, Support. | Rust.
- Built the interactive Telegram Bot with integrated mini-app. | Rust.

Oct 2023 – Jul 2024 | Solidity Engineer @ Subspace Labs (now Autonomys) | Full-time
- Load testing of Subspace's EVM domain in Async Rust & different Solidity contracts having low to high gas-consuming functions for sending transactions on-chain with custom load value; created Solidity repository monorepo for community.
- Built a native cross-chain bridge based on custom LZ contracts between Subspace's EVM and other EVM chains using Solidity & TypeScript; also, extensive Foundry unit & integration testing done; found security vulnerability & raised a bug bounty report.
- Did some work on ZK-based Identity solution for native product using TypeScript & Solidity.
- ETA Prediction of probabilistic farming reward for a Subspace farmer; released custom GTK4 FE component for Space Acres in Rust.
- Plagiarism detection on text embeddings via LSH random projection with Python & Rust.
- Worked on SDK development featuring PKI-based identity for Autonomys; Built a community telegram bot using Rust.

Jun – Sep 2023 | Self
- As Coursera Instructor, released a GP on "Target proximity game & food delivery proximity app using Rust"
- Built a Rock-Paper-Scissors game using commit-reveal cryptography in Rust.
- Developed Bank pallet for substrate chain featuring traditional staking features like fixed, recurring deposits in Rust.
- Built Revealable Stakeable Dynamic On-chain NFT for EVM chain; developed concurrent RESTful APIs using Rust Actix web framework.

Nov 2022 – Jun 2023 | Head of Blockchain Department @ Rapid Innovation | Full-time
- R&D on ZKP algorithms, Project lead for building ZKP module with zkSNARK for Fuel Blockchain using Circom, Rust, Cairo (zkSTARK).
- R&D on Cross-chain messaging protocols like Substrate XCMP, Axelar GMP to enable a web3 project support multi-chain.
- Have worked on DeFi auto-compounding vault based on Tetu protocol using Foundry with contracts & scripts written using Solidity.
- Engineering Architect for NFT marketplace projects like Xstrela, VTR Connect, TGE projects like Orasis with extensive research on custom wallet development.
- Audited the Projects' Solidity & Rust codebase for security vulnerabilities, code optimization, testing, documentation.
- Collaborated on the Xstrela project, building scalable, thread-safe APIs using the Actix-web framework in Rust.
- Upgrade the foundation stone for the blockchain department abent considering latest evolution in terms of SC security & Gas optimization techniques, Use of Foundry tool, Fuzz testing. Periodic leadership on the project estimation on RFP received from several major clients.

May 2022 – Oct 2022 | Senior Smart Contract Backend Engineer @ Upside | Full-time
- Collaborated with auditors from Quantstamp, Certik, Omniscia on Token, Vesting, Staking Solidity smart contracts for clients including Metacraft, Delysium, and Zedrun, etc.
- Designed AMM & Developed smart contracts for DeFi DEX - "Bioform" with MIT using their free-energy based parametrized model.
- While writing smart contracts, I ensured testing, deployment scripts, flattening, verification, fuzzy-testing, gas optimization (using Yul, Solidity), contract-size optimization of smart contracts using Truffle, Hardhat, Foundry tools before deploying to mainnet, testnet.
- Co-developed and led 'Zippy' TGE tool project, crafting architecture with whitepaper, built REST APIs with NextJS, and conducting API tests via data mocking and integrated Swagger UI; also managed Firebase's NoSQL & SQL databases. Proficient in React and Redux.
- Implemented CI/CD via GitHub Actions and Docker for automated testing and repository packaging, respectively.

Dec 2021 – May 2022 | CTO @ Theia Finance | Contract
- Architected a modular, upgradeable DeFi platform and smart contract system leveraging ERC-2535 Diamond Standard. Also crafted a DAO-governed crowdfunding platform based on bonding curves; also featured an option of collective formation by top investors.
- Drove product iterations and custom token faucet trials, boosting Discord community from 300 to 30k, while managing database scalability for concurrent usage.
- Engaged in product design deliberations, whitepaper composition, and provided extensive hands-on guidance for full-stack and blockchain development to the team.
- Researched cross-chain capabilities via Layerzero and Axelar projects, including engaging in technical discourse on Axelar's features.
- Collaboratively wrote and audited solidity smart contracts, enhancing security, optimizing gas use, and minimizing contract size.

Nov 2021 – Mar 2022 | Senior Blockchain Engineer @ Master Ventures | Contract
- Collaborated on translating an EVM crowdsale smart contract from Solidity to Solana using Rust language; also documented.
- Played a key role in the launch of the native Polkadot parachain, 'Paidchain,' leveraging Substrate, Cumulus repositories, and CLI tools for network launch.
- Evaluated Paidchain deployment by executing a sample EVM smart contract development lifecycle via Hardhat; also documented.

Jul 2021 – Sep 2021 | Lead Blockchain Developer @ Boot Finance | Full-time
- Conducted extensive research on Uniswap, Curve, and Saddle to write smart contracts for a DEX, utilizing native CustomSwap AMM and liaised with a Quant researcher.
- Developed robust test cases with Hardhat Typescript for the smart contracts – DEX, Vesting, Token.
- Leveraged data wrangling techniques to categorize and modify user token allocations within GSheets; wrote API scripts for file upload.
- Explored the Aave protocol in order to add lending/borrowing feature on top of the platform.

Jan 2019 – Jun 2021 | Freelancing as Web3 Full-stack Engineer | Full-time
- Developed on-chain and off-chain NFT projects using ERC721, ERC1155 standards, and NodeJS, Solidity, Hardhat. Automated deployment of Dynamic NFTs to IPFS, Arweave.
- Worked on diverse EVM smart contract projects related to ERC20 Token's variants, Vault, Staking, NFT Marketplace, Auction for clients.
- Worked on diverse EOSIO smart contract projects - GPK.Battles (Betting game with RNG Oracle), Tipping, ICO (single/multi phases), Staking, Vault using C/C++, JavaScript/TypeScript.
- Developed three Telegram Bots (Tipping, KYC, Quiz) using EOSIO smart contracts and integrating Heroku Redis databases.
- Developed 'Autoplot,' a CLI-based data visualization software leveraged in the Indian Space Programme for comprehensive analytics based on parsed Excel data; using python language.
- Worked on numerous data wrangling projects in the semiconductor industry using Python and Rust; developed custom scripts.

Feb 2018 – Dec 2018 | Founding CTO @ DRIFE | Full-time
- Developed Ride-sharing smart contracts suite for EOSIO blockchains using C++.
- Established an interdisciplinary team for engineering, sales, marketing, and content creation.
- Designed & Formulated tokenomics and revenue model for zero-fee rides feasibility.
- Authored technical whitepaper outlining governance, economics, and technology pillars & platform architecture and product workflow.
- Presented at the WBS event and successfully pitched to ~ 35 investors, resulting in recognition as one of the most innovative projects.

Sep 2016 – Jan 2018 | Freelancing as Web3 Full-stack Engineer | Full-time
- As a full-stack developer, I created an Android App - "BitInfoCoin" for web3 space to provide crypto related services like show nearby crypto ATMs, exchanges, crypto price, news feed.
- Extensive research into Steem blockchain's Tokenomics model & deep dived into EOS blockchain codebase. Wrote several contracts using C++; also written test scripts; deployment using CLI.
- Recognized as a leading technical content creator for the Utopian developer community on the Steem Blockchain; also researched their consensus algorithm – 'Proof of Brain'.

Sep 2014 – Sep 2016 | Scientist @ ISRO | Full-time
- Worked in field of "Dry Etching" in 8-inch foundry for fabrication of CMOS, ASIC devices.
- Developed a command-line interface (CLI) application in Python for automated analysis of large-scale data (QC, production) collected from foundry machines.