Axel Noel Alicea

Senior Software Engineer / Blockchain Specialist

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Summary

Results-driven Senior Software Engineer with over a decade of experience building scalable, secure, and high-performance applications across the blockchain and web ecosystems. Specialized in Rust development and blockchain engineering, with deep expertise in Solana, Ethereum, smart contracts, and DeFi protocols. Proven success delivering production-ready decentralized applications, Layer 1/Layer 2 integrations, staking systems, and ZK-rollup solutions. Adept at designing backend architectures using Node.js, Golang, and Python, and deploying cloud-native solutions with AWS, Docker, and Kubernetes. Skilled in leading full software development lifecycles and passionate about pushing the boundaries of Web3 through innovation, security, and performance optimization.

Skills

- **Program Language: HTML, CSS, JavaScript, Typescript, Python, Node.js, PHP, Rust, C++, C**
- **Frameworks/Libraries: React.js, Angular, Vue.js, Next.js, Django, Flask, Express.js, FastAPI, Bootstrap**
- **APIs: GraphQL, Restful APIs, GRPC,**
- **Blockchain Tech: Solana, Ethereum, Bitcoin, Smart Contract, Solidity, DeFi, Web3.js**
- **Database PostgreSQL, MongoDB, MariaDB, MySQL, NoSQL**
- **Project Management AWS, GCP, Azure, Agile, Jira, Trello**
- **Environment Kubernetes, Docker, OpenShift, Spinnaker, PaaS, Github, Gitlab, Firebase**

Education

Texas State University | 2008 – 2013
BS in Computer Science

Work Experience

Senior Rust Engineer ***Jan 2024 – May 2025***

Solu Labs *(Los Angeles, CA)*

- Leveraged Rust's ownership model and type system to write reliable code and contributed to open-source projects within complex Rust ecosystems. My familiarity with Rust's tooling, such as Cargo and its package manager, has enabled me to develop and maintain production-grade applications focused on performance and safety.
- Developed and deployed smart contracts that were written in Solidity and Rust to handle asset management, reward distribution, and user transactions for liquidity pools, yield farming, and staking mechanisms.
- Developed reusable, well-documented smart contracts written in Rust using the CosmWasm framework to allow DAOs to efficiently align incentives through token swaps and liquidity provision.
- Develop and deploy custom smart contracts on the Solana blockchain, ensuring code quality, security, and performance.
- Used Rust to enhance the security and performance of smart contracts on Ethereum and EVM-compatible blockchains, improving staking mechanisms and reducing latency by 25%.
- Provided expertise in the transition to and maintenance of Proof of Stake chains, contributing insights that improved network stability and reduced staking-related issues by 20%.
- Leveraged Rust to implement efficient, low-level blockchain components for Ethereum and ZK-rollup

scaling solutions, leading to a 50% reduction in gas fees and improved transaction throughput.
- Built a Solana program similar to Banana Miner to allow users to deposit SOL and earn 12% daily APR. Integrates with Solana/@web3.js.

Senior Blockchain Developer *Apr 2021 – Oct 2023*

Avolox *(Amarillo, TX)*

- Advanced Microsoft's DeFi landscape with Microsoft Coin on Solana, harnessing smart contracts to elevate digital asset management and trading into a new DeFi paradigm.
- Developed a thoroughly tested Solana program using Anchor Rust for presales, airdrops, LP token staking, and SPL token staking.
- Facilitated the integration of Layer 1 (Ethereum) and Layer 2 (off-chain VM) components, ensuring seamless communication and synchronization between the layers.
- Defined blockchain solution architecture for energy trading platform and while preparing gas efficient smart contracts for Ethereum Blockchain.
- Developed a stable and efficient trading bot and integrated it with Solana-based decentralized exchanges (DEXs) and wallets.
- Rebuilt the infrastructure by designing, building, and maintaining a state-of-the-art Geth-based Ethereum node, increasing transaction throughput and improving network stability across the ecosystem.
- Optimized the core ABCI message handlers (CheckTx, DeliverTx, BeginBlock, EndBlock) to ensure efficient transaction validation and processing, resulting in a 30% improvement in transaction throughput.
- Created comprehensive testing strategies, including unit tests and end-to-end tests, ensuring the reliability and robustness of cross-chain applications.
- Wrote smart contracts on various blockchain platforms including Ethereum and Hyperledger Fabric to fine-tune the business logic and meet various business requirements.

Blockchain Developer *Sep 2019 – Jan 2021*

Ripple *(San Francisco, CA)*

- Developed reusable, well-documented smart contracts written in Rust using the CosmWasm framework to allow DAOs to efficiently align incentives through token swaps and liquidity provision.
- Led the 'Jungle Safari' rebrand and technical strategy, integrating React and Phantom Wallet, which contributed to a 25% growth in daily active users and solidified Jungle Cat's presence in the Web3 space.
- Masterminded the deployment of over 30 high-stakes smart contracts on the Solana blockchain using Rust, achieving a 99.9% success rate in transaction validations and contract executions.
- Orchestrated the launch of Microsoft Coin $MSFT on the Solana blockchain, achieving over 50,000 transactions per second, demonstrating Microsoft's strong brand in harmony with Solana's rapid ecosystem.
- Reduced smart contract execution time by 15% by optimizing code and leveraging off-chain computations, serving over 10,000 daily transactions.
- Involved leading the development of a space-themed crypto game where players earn and trade NFTs, with support for Solana and Ethereum blockchains.
- Engineered core smart contracts for the Keep Network's tBTC bridge, enabling secure collateralization of Bitcoin on Ethereum by leveraging TSS (Threshold Signature Scheme) and SCDSA (Secure Distributed Signing Algorithm) technologies for multi-signature wallet management.
- Managed the launch of tokens on the ZK-rollup platform, achieving a 60% average staking participation rate through comprehensive tokenomics strategies and secure staking platforms.
- Developed and deployed smart contracts written in Solidity and Rust to process user transactions for asset management, reward distribution, liquidity pools, yield farming, and staking mechanisms.

Back-end Developer *Jan 2016 – Jul 2019*

Levelset *(New Orleans, LA)*

- Created and integrated RESTful APIs with Node.js and Express.js, facilitating real-time data synchronization between the Manufacturing Optimization Platform and other internal systems, ensuring accurate and up-to-date information across all departments.
- Developed several dApp's using web3.js, ether.js and several dashboards and backends using React.js, Vue.js, Node.js, Next.js
- Developed a custom order processing workflow in Node.js, automating the entire order lifecycle from order placement to fulfillment, resulting in faster processing times and reduced manual errors.

- Engineered a dynamic and user-friendly dashboard in React to provide real-time insights into production metrics, inventory levels, and logistics, enabling better decision-making and resource management.
- Built data content based on the MySQL PHP Smarty plugin library framework that is still used by many websites.
- Developed secure user authentication and permission management features using Node.js and Express.js, allowing organizations to manage user roles and access levels effectively.
- Developed Sou Server, a Dialogflow bot with an external Node.js API for business logic, along with an admin interface powered by React, Redux, and Apollo.
- Created the front end of an invoice management app in React, featuring full responsiveness, custom inputs, and dynamically generated pages.
- Designed, engineered and built a responsive Angular frontend supported by a thin PHP Drupal backend for one implementation of a high-end corporate website.

React Developer *Apr 2013 – Dec 2015*

ActivTrak *(Austin, TX)*

- Developed and maintained a robust suite of software applications that deliver dynamic and responsive frontend interfaces using React.js, efficient and scalable backend APIs using Flask, and seamless user experiences and robust performance using PostgreSQL.
- Led the entire SDLC leveraging a comprehensive technology stack including JavaScript, TypeScript, React, Redux Saga, Redux Thunk, Gatsby, npm, Node.js, Express, Lambda functions, and Serverless frameworks.
- Built a frontend for an invoice management app in React that features full reactivity, custom inputs, and dynamically generated pages.
- Designed a dynamic and user-friendly dashboard in React that provides real-time insights into production metrics, inventory levels, and logistics, enabling better decision making and resource management.
- Improved app performance by reducing unnecessary API calls by 95% using React Query's caching strategy.
- Played a key role in developing Toggl's time-tracking application using React (16.13.1) on the front-end, ensuring a smooth and intuitive user experience across all devices with responsive design and performance optimizations.