

Tumukunde Arnold

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Summary

I'm a skilled and motivated Software Engineer with a passion for cutting-edge technologies and a decade of experience in the software development field. My expertise spans a wide range of programming languages, making me a proficient polyglot programmer with in-depth knowledge of PHP, Python, TypeScript, and Rust.

My current focus lies in the exciting and rapidly evolving world of blockchain technology, where I have developed a deep understanding of the Substrate framework. Over the years, I have honed my skills in working with Substrate, both on the runtime and in building pallets for diverse applications.

One of my key strengths is my proficiency in crafting robust and efficient applications in the blockchain space. Leveraging my experience with Substrate, I have successfully contributed to the development of various applications, each tailored to specific use cases and requirements.

My dedication to producing high-quality code and adherence to best practices have ensured the delivery of reliable and scalable solutions.

In addition to blockchain development, I have ventured into the realms of peer-to-peer (P2P) and threshold cryptography applications. My experience in this domain has enabled me to build secure and decentralized systems, ensuring data privacy and integrity for users.

Experience

Senior Blockchain Engineer

Serv Inc • Miami, FL

12/2022 - Present

During my tenure at Seneca, I have held a pivotal role as the sole Blockchain Engineer at the company. My time here has been marked by a strong focus on the blockchain domain, where I have been deeply involved in various critical aspects of the project.

A significant part of my work revolved around the implementation and refinement of the Nominated Proof of Stake (NPoS) consensus. Taking on this challenging task, I successfully integrated NPoS into the project's runtime, ensuring a secure and efficient mechanism for block validation and consensus on the blockchain.

In addition to consensus mechanisms, I played a crucial role in designing and implementing the tokenomics of the chain. Carefully crafting the economic model and token distribution, I ensured that the blockchain ecosystem operated optimally and incentivized active participation from stakeholders.

One of the highlights of my contributions has been the development of pallets for Verified Credentials adhering to the W3C standard. This feature has significantly enhanced the trust and credibility of the blockchain platform, allowing seamless integration with existing systems and establishing a strong foundation for future applications.

Furthermore, I took on the task of building an off-chain worker responsible for communication with external validation partners. This innovation expanded the scope and capabilities of the blockchain, enabling it to interact with external resources while maintaining its integrity and security.

As part of my dedication to expanding the functionality of the blockchain, I successfully incorporated the Ethereum Virtual Machine (EVM) into the chain. This integration opened up a myriad of possibilities, allowing the platform to leverage smart contracts and expand its reach across the broader blockchain ecosystem.

Another significant achievement during my time at Seneca has been deploying the chain to an AWS instance. This milestone ensured the project's accessibility and scalability, enabling seamless integration with cloud-based services while maintaining robust performance and reliability.

Currently, I am actively engaged in developing the Zero Knowledge Environment concept. Leveraging trusted execution environments, this cutting-edge initiative aims to elevate the privacy and confidentiality of the chain and its validators to unprecedented levels. This endeavor reflects my commitment to exploring innovative solutions and contributing to the advancements of the blockchain space.

Throughout my time at Seneca, I have demonstrated unwavering dedication to my role as the blockchain expert. My ability to navigate complex challenges, coupled with my passion for advancing the blockchain ecosystem, has been the driving force behind my success. Working in a dynamic and innovative environment has further enhanced my problem-solving abilities, adaptability, and resilience.

My time at Seneca has been an incredible journey of growth and learning, and I eagerly look forward to continuing to push the boundaries of what the blockchain can achieve in the future.

Senior Blockchain Engineer

Analog Corporation • San Francisco, CA

03/2022 - 12/2022

During my tenure at Analog, I had the privilege of being a pioneering engineer at the forefront of blockchain technology. Throughout my time with the company, I played a crucial role in various aspects of the blockchain's development, and my contributions were instrumental in shaping the landscape of the project.

One of the highlights of my journey at Analog was my involvement in the creation of the Timegraph. From its inception to its implementation, I was deeply involved in conceptualizing and bringing to life the proof of concept. Leveraging my expertise in Frost Dalek based threshold cryptography, I played a vital role in verifying messages from external chains, ensuring secure communication with the Timechain, a substrate-based chain that formed the backbone of our innovative solution.

An essential aspect of my work was contributing to the initial implementation of the Proof of Time consensus. This groundbreaking consensus mechanism was a testament to our commitment to pushing the boundaries of what blockchain technology could achieve. By utilizing cutting-edge cryptography and innovative approaches, we were able to redefine how time and events were recorded and secured on the blockchain.

In addition to my work on the core technology, I also took on the responsibility of developing the substrate pallets that facilitated seamless communication with the Timegraph API. This pivotal component ensured the smooth interaction between different elements of the system and played a crucial role in enhancing the overall functionality of the blockchain platform.

My time at Analog provided me with invaluable experiences and opportunities for growth. Collaborating closely with the research and product teams, as well as my fellow engineers, I honed my skills in critical thinking, problem-solving, and innovation. The dynamic and supportive environment at Analog fostered a spirit of exploration and experimentation, encouraging us to think outside the box and find creative solutions to complex challenges.

Working on such a pioneering project taught me the importance of teamwork and interdisciplinary collaboration. It was an enriching experience to be part of a group of dedicated professionals, each bringing their unique expertise to the table, all united by a common vision of revolutionizing the blockchain space.

My time at Analog left a lasting impact on me, both professionally and personally. It deepened my passion for cutting-edge technologies and inspired me to continue pushing the boundaries of what is possible in the world of blockchain and decentralized systems. I am grateful for the knowledge and skills I gained during my tenure at Analog, and I look forward to leveraging these experiences to drive innovation and contribute meaningfully to future projects in the blockchain domain.

Co-founder & Blockchain Engineer

Mon4x OU • Houston, TX

09/2020 - 01/2022

During my tenure at Mon4XL, I held a pivotal role as the sole Rust Engineer, driving the development of an innovative blockchain project from concept to reality. My journey at Mon4XL was marked by a series of significant contributions, as I worked on every aspect of the blockchain, demonstrating my versatility and dedication to building a robust and functional platform.

One of the notable achievements during my time at Mon4XL was the successful construction of the proof of concept

One of the notable achievements during my time at Mon4XL was the successful construction of the Proof of Concept blockchain. Leveraging my expertise, I implemented a Proof of Authority consensus mechanism that laid the foundation for the project's early stages. Subsequently, I transitioned the blockchain to utilize Nominated Proof of Stake (NPOS), enhancing its decentralization and security.

As a key member of the team, I undertook the responsibility of building the core infrastructure to support WebAssembly (Wasm) smart contracts. This development expanded the platform's capabilities, empowering developers to create dynamic and versatile applications that ran directly on the blockchain.

A standout accomplishment during my tenure was the development of the Automated Market Maker (AMM) smart contract, drawing inspiration from Uniswap v2. This addition to the blockchain opened doors to efficient and decentralized exchange mechanisms, facilitating seamless token swaps and liquidity provision for users.

In addition to AMM, I dedicated my efforts to building the pallet for the onchain stablecoin. This significant feature played a crucial role in the project's ecosystem, providing users with stability and confidence in their transactions.

Another critical aspect of my work at Mon4XL was designing the tokenomics and multi-asset transaction fee structure. With transaction fees payable in either the native token or the stablecoin, I ensured a flexible and user-friendly fee model that adapted to the needs of the platform and its users.

As the sole Rust Engineer, I took on a leadership role, collaborating closely with other team members to shape the blockchain's vision and direction. My problem-solving skills and technical expertise were continuously put to the test as we navigated the complexities of blockchain development.

Working at Mon4XL allowed me to grow both professionally and personally. The fast-paced and dynamic environment challenged me to think creatively and innovatively to overcome obstacles. My time at Mon4XL instilled in me a strong sense of ownership and a passion for building cutting-edge blockchain solutions.

Overall, my tenure at Mon4XL was an enriching experience that reinforced my commitment to advancing the blockchain industry. My contributions to the project's success have been a source of pride, and I am eager to continue pushing the boundaries of what is possible in the blockchain space. The knowledge and experiences gained during my time at Mon4XL have prepared me for future challenges, and I look forward to further making an impact in the world of blockchain and decentralized technologies.

Full Stack Engineer

Moving Ads (U) LTD • Kampala, Central Province

09/2013 - 12/2016

During my tenure at Moving Ads, I engaged in a diverse array of projects that spanned from web development to crafting embedded players tailored for billboard advertisements. My role encompassed a comprehensive spectrum of the software development lifecycle, granting me the opportunity to delve into various stages of project creation. This experience served as a gateway for me to interact with an assortment of cutting-edge technologies, broadening my technical prowess and expanding my knowledge base.

Integral to my responsibilities was the pivotal task of interfacing with clients. This entailed delving into detailed discussions to discern their precise software needs before initiating the development process. Navigating these client interactions sharpened my communication acumen, enabling me to efficiently translate their requirements into tangible software solutions. Simultaneously, it honed my leadership abilities as I steered projects towards successful fruition, guiding teams through intricate software landscapes.

My time at Moving Ads was characterized by multifaceted challenges that instilled within me the capacity to deftly maneuver across an assortment of programming languages and software projects. This experience not only enriched my technical skill set but also cultivated a resilient problem-solving mindset, fostering my ability to seamlessly transition between disparate technologies and project domains.

In retrospect, my tenure at Moving Ads was transformative. It crystallized my aptitude for effective communication, honed my leadership capabilities, and catalyzed my adeptness in adapting to dynamic software landscapes. The amalgamation of hands-on development, client collaboration, and navigating complex programming environments have collectively shaped me into a versatile and proficient software engineer, primed to navigate the intricacies of future challenges.

Education

Bachelor of Applied Science - BAsC

ISBAT University • Kampala, Central Province

11/2019

Higher National Diploma Software Engineering

Aptech Computer Education • Kampala, Central Province

07/2016

Bachelor of Commerce - BCom

Bangalore University • Bangalore, Karnataka

Skills

Communication skills, Time management, Project management, Javascript, APIS, REST, Agile, Rust, Substrate Framework, Software development, GIT, C++