MUHAMMAD ZAIN ALI

Portfolio | LinkedIn | GitHub | Leetcode

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SOFTWARE ENGINEER

Highly accomplished Full Stack Blockchain Engineer with a proven history of crafting innovative blockchain solutions and full-stack applications. Adept in frameworks like ReactJs, NextJs, NodeJs, and NestJS. Possessing deep expertise in smart contract development using Rust, FunC, and Solidity for Solana, TON, and EVM blockchians. My passion for blockchain technology drives me to excel in dynamic environments, contributing to cutting-edge projects and research initiatives.

EDUCATION

Information Technology University
Master of Science in Data Science

Lahore, Pakistan
2021 – 2023

University of Engineering and Technology Taxila
Bachelor of Science in Computer Engineering

Taxila, Pakistan
2017 – 2021

SKILLS

Languages	:	JS/TS, Solidity, FunC, Rust, Java, Python, C/C++, C#, Circom, ZoKrates
Frameworks	:	NestJs, AdonisJs, ReactJs, NextJs, Vue, ExpressJs, NodeJs, Hardhat, Truffle, ElectronJs, Openzeppelin
Libraries	:	Web3JS, EtherJS, Sequelize, Prisma, Wagmi, Telegram Bot, Scikit-learn, PyTorch, Numpy, Pandas, OpenCV, Tailwind CSS, Material UI, Shadcn UI, Ant Design, ERC Standards
Databases	:	Oracle, MySQL, MS SQL Server, PostgreSQL, MongoDB, Firebase, Supabase, SQLite
Dev Tools	:	Visual Studio Code, Git, RemixIDE, IntelliJ, Eclipse, Jupyter Notebook, zkREPL, Postman, Docker

EXPERIENCE

Backend Lead - DeFi
Sagestudios.ai | United States

Dec 2024 – Present
Remote

- Integrated leading DeFi platforms (Aave, Uniswap, 1inch, Coingecko, Pump.fun, DEX Screener) into altar.market.
- Engineered backend workflows to interface Flowise AI fork with @SageSightBot for real-time DeFi insights.
- Streamlined platform interactions for seamless DeFi execution via a Telegram bot-driven UX.

Sr. Software Engineer
Funavry Technologies | Pakistan

Jul 2024 – Jan 2025
Islamabad, Pakistan

- Actively lead and execute comprehensive blockchain development projects
- Implemented Swapping Pool Contracts on Solana in Rust, enabling secure token swaps and optimizing rewards.
- Develop and Deploy Swapping Pool Contracts on TON in FunC, ensuring secure and reliable token swap mechanisms.
- Led the migration of the codebase to NestJS, improving code modularity, scalability, and overall performance.

Full Stack Blockchain Developer
BigOSoft LLC

Jun 2023 – Jul 2024
Lahore, Pakistan

- Developed a custom metadata API for a metaverse NFT game, enhancing functionality and user experience.
- Built a full-stack website with Next.js app routing, integrating advanced features for user engagement.
- Spearheaded Blockchain RnD using ERC721/A, ERC1155, ERC2981, ERC20, DAOs and Vesting Contracts.
- Conducted in-depth research on Ordinals and Doginals inscriptions, exploring innovative use cases in blockchain.
- Upgraded and optimized a React, Electron, and Node.js-based point-of-sale system.

Research Assistant
NCCS Blockchain Security Lab, ITU

Sep 2021 – Nov 2022
Lahore, Pakistan

- Conducted RnD in the blockchain, with a focus on creating DApps and EVM state extraction and migration tool.
- Conduct Formal Verification of Smart Contracts with high-level temporal properties.
- Worked with APIs to retrieve, process, and analyze data from blockchain networks, ensuring actionable insights.

PROJECTS

altar.market *TypeScript, Node.js, Flowise AI, viem, Telegram API, langchain, DeFi APIs* Visit Studio

- Led backend DeFi integration for a Flowise AI-forked platform, interfacing with Aave, Uniswap, 1inch, and others.
- Built robust APIs and workflows to enable @SageSightBot to deliver real-time DeFi insights via Telegram.
- Designed a modular DeFi integration layer using NestJS and viem for scalable on-chain interaction.

Sheertopia *TypeScript, Solidity, NextJs, Postgres, Wagmi, Git, ExpressJs, Node.js, REST APIs* Visit Website

- Crafted a dynamic website paired with robust back-end APIs, enhancing user experience.
- Seamlessly integrated OpenSea API and Crypto Wallet functionalities into the back-end services.
- Spearheaded Smart Contract RnD and managed deployments of ERC721/A, ERC1155, and ERC2981, DAOs Contracts.
- Streamlined the minting process, deployment, and contract verification through Hardhat scripts in TypeScript.
- Developed contract integration APIs for seamless integration with webGL games and Telegram bots.

ChainGPT *TON, FunC, Solana, Nest.js, PostgreSQL, Git, Sequelize, Metaplex, Shyft API* Visit Website

- Led the migration of a legacy Express.js codebase to a modern Nest.js framework with TypeScript.
- Integrated Solana blockchain into the platform, enabling fast transactions and low transaction fees.
- Streamlined NFT minting and validation using the Shyft API for ChainGPT SDK, ensuring secure transactions.
- Developed Ton Network smart contracts using FunC, create a Jetton swapping pool to enable token exchanges.
- Implement Solana smart contracts using Rust, create swapping pools to enable token exchanges.

PKIChain *Solidity, Vue.js, Express, MySQL, Git, Node.js* Visit Website

- Spearheaded RnD for a Domain Validation Certificate Issuance DApp for decentralizing SSL certification issuance.
- Led the development of both front-end website UI and robust back-end services for seamless functionality.
- Ensured security through formal verification of the smart contract, enhancing the project's integrity.

Interstellar Buy Bot *NodeJs, TS, tg-bot-api, Postres, TON Blockain, Ton API, Dexs API, EC2, Redis* Visit Bot

- Independently developed a Telegram buy bot that provides real-time alerts for token purchases on the TON network.
- Implemented a streaming service that actively listens to TON network events, ensuring timely alerts.
- Handled Telegram chat integrations to send respective alerts, enhancing user engagement and responsiveness.
- Developed and implemented an algorithm for trending tokens, providing users with insights on popular tokens.
- Generated wallets and verified payments received for the paid trending service, ensuring secure transactions.

RajaaRani App *OAuth, AWS, EC2, Docker, ES Search, NodeJS, ExpressJs, Postgres, Microservices, NextJs* Download App

- Independently developed the back-end for a matrimonial app for Muslims, from scratch to completion.
- Implemented a robust MVC architecture with microservices, ensuring modularity and scalability.
- Dockerized all microservices separately for seamless deployment and management.
- Deployed the application on EC2, leveraging AWS services for optimal performance and reliability.

BigOPOS *ElectronJs, React.js, Sqlite, Git, NodeJs*

- Built an end-to-end POS system using React, Node.js, Electron.js, and SQLite3, ensuring seamless functionality.
- Streamlined stock management and enhanced analytical reporting for business insights and decision-making.
- Led the design and development of UI/UX, backend architecture, and database structure for the POS project.