

Employment History

Software Engineer	Archax, Philippines	February 2021 - Present
<ul style="list-style-type: none">Implemented Risk Limit Management for Archax OMS.Created High-level design Architecture for some OMS features.Implemented API handlers in NodeJS to process data from OMS to DB.Created Docker images for the Crypto Matching Engine projects to ease developer environment setup and server deployment.Implemented admin API handlers in the Matching Engine Library to interface between the Matching Engine and OMS.Designed and implemented a round-robin connection/reconnection approach in preparation for Matching Engine scalability.Implemented a cross-project utility library. Extracted and refactored common helper functions from across projects.Implemented a message version check as part of client logon. This validates the message alignment on both client and the Matching Engine.Implemented a performance tool for the Matching Engine which will send payloads of order messages using <i>Unix Sockets</i> and calculate the overall metrics.Implemented a timeout interval controlled non-blocking connect/reconnect for client connections to the Matching Engine.Implemented a session storage to cache executions and orders in a specific session.Designed a metric service that will query all business metrics as criteria for organisation rebalancing in multiple OMS. This is part of the OMS scalability to have multiple organisations per OMS.Designed the OMS rebalancing flow which discusses scheduled and admin triggered rebalance, OMS state changes, and post-rebalancing behaviours(<i>includes fetching of open orders in 24/7 venues and fetching of organisation details</i>).Implemented a FIX test client in <i>Golang</i> to test inbound and outbound messages to and from the exchange. It also supports burst mode to benchmark the FIX middleware.Designed a subscription model for OMS. This functionality enables the OMS to only process inbound messages from the Matching Engine based on what organisation it's subscribed to.		
Software Engineer	Retone, Remote	July 2020 - February 2021
<ul style="list-style-type: none">Implemented a Python based C++ code formatter to be called from Bazel.Implemented sharding of multiple guitar string renders to increase the speed of magnetic field computation then after merging it.Implemented a Bazel script(Starlark) to do an end-to-end computation of magnetic fields based on magnetic file input.Implemented a guitar knob controller which sends and receives data through software based UARTReader/Writer, which will then be relayed to the actual MCU.		
Senior Engineer	CryptoBLK, Hong Kong	March 2019 - March 2021(Consultant)
<ul style="list-style-type: none">Created the ABE token with <i>Solidity</i>.Integrated the quantum signature scheme Dilithium for Abelian cryptocurrency and exchanged some of the ed25519 computations.Created and modified unit-tests and functional with google test and python to further improve code quality.Created python scripts to run transaction testing using the built-in JSON RPC.Integrated new scheme on quantum proof linkable ring signatures(https://github.com/salrs/salrs).Created integration tests, flow test, and contract test and APIs for Corda smart contracts for trade finance applications.Implemented backend features on Contour trade finance application specifically in Letter of Credit amendments. <i>Corda Smart Contracts and Spring</i>		
Firmware Engineer	Lexmark, Philippines	November 2018 - March 2019
<ul style="list-style-type: none">Developed a feature to have different handle for Apple SMTP server(<i>Embedded C++</i>).Migrated some projects from Unix Makefile to <i>CMake</i>.Fixed some functional issues on printer firmware code as well as Coverity and Canary issues.		
Software Engineer	Zcoin, Remote	July 2018 - September 2018
<ul style="list-style-type: none">DevOps work. Implemented a CI/CD server using Travis CI, Circle CI, Jenkins CI which calls a gitian-builder and results 3 platform builds.Integration of new MTP(Merkle Tree Proof) to electrumx server, a python based server for the electrum client.		
Software Engineer	Horizen, Remote	January 2018 - June 2018
<ul style="list-style-type: none">Integrated Horizen to the Ledger Nano S Hardware Wallet.Implemented and integrated Domain fronting with ZenCash Light Wallets(<i>Arizen wallet, ElectronJS</i>).Added build capabilities with macOS for Horizen source.Developed automated unit tests on Ledger Nano S and Trezor T hardware wallets.Integrated advanced daemon specific features for the Horizen Java swing wallet.		
Software Engineer Post Office UK, Ltd.	NCR Corporation, Philippines	August 2012 - February 2018
<ul style="list-style-type: none">Implemented a parser in MFC C++ using the MSXML library to gather data from the service to be shown on the device UI.		

- Implemented a scale wrapper for the Avery scale in MFC C++ to integrate the 3rd party scale into the checkout system.
- Created a build machine using Jenkins CI for Post Office UK Integration processes.

Walmart

- Designed and implemented UI using MFC C++ as language used for the Model and Controller, and XML as for the View.
- Integrated and supported Walmart Mobile Payment for Self Serve Checkout lanes, using MFC C++ and XML.(Bentonville, AR)
- Developed a log parser in C# which uses telnet to connect to the IBM POS and extract the data for efficient log tracing.
- Implemented test scripts for IBM POS to anticipate changes in messages.

Australia Post Office

- Developed and integrated AMEX payment in MFC C++ into the Australia Post SST.
- Designed and implemented UI using MFC C++ as language used for the Model and Controller, and XML as for the View.

Education

Dumaguete City, Philippines	Silliman University	June 2007 - March 2012
<ul style="list-style-type: none">• B.S in Computer Engineering, March 2012• Undergraduate Coursework: Operating Systems, Data structures and Algorithms, Microcontroller Design, Computer Architecture, C++ Programming, Digital Systems, Control system design• Thesis work: Android Phone controlled Quadrotor with Bluetooth as medium of communication.		
Remote	Consensys Academy	October 2019
<ul style="list-style-type: none">• Graduated on the October 30 Cohort Bootcamp• Dapp Development with Ethereum and Solidity• Project link: https://github.com/josephnicholas/proposal-dapp		

Technical Experience

Github Profile

- www.github.com/josephnicholas

Programming languages and Technologies

Language

- C++11/14/17, Kotlin, Golang, Python, JavaScript, Solidity, SQL

Paradigms

- Object Oriented Programming, TDD with Catch2 and Google test

Libraries

- C++-STL, Boost, Smart Contracts(Corda and Ethereum), Abseil-C++, Radia, Protobuf, ZeroMQ, Unix Socket Library

Database

- PostgreSQL, SQLite

Tools

- Visual Studio, CLion, IntelliJ, VSCode, JIRA, SVN, Git, Github, Vim, CMake, Bazel, Docker

Platform

- Windows OS, macOS, Linux Ubuntu

Frameworks

- Qt, Corda, Ethereum, ReactJS(used only for the Solidity developer bootcamp), Spring, NodeJS, MochaJS