Silliman University Campus,
Dumaguete City, PH

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Employment History

Software Engineer	Archax, Philippines	February 2021 - Present

- Implemented Risk 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 functionalities in the Crypto Matching Engine Library to interface between the Crypto Matching Engine and OMS.
- Implemented a Python test client that will send messages on behalf of the OMS or the admin application.
- Implemented round-robin connection/reconnection logic for preparation for Hot-Warm High-Availability.
- Created a cross-project utility library. Extracted and refactored common helper functions from across projects.
- Implemented a message version check upon logon which validates if both client and the Crypto Matching Engine messages are aligned.
- Implemented a performance tool for the Crypto Matching Engine which will send a payload of orders and calculate acceptable latency metrics.
- Implemented reconnect and timeout logic for non-blocking client connections in the internal library which is consumed by OMS and the Crypto Matching Engine .
- Implemented buffer(executions, orders, etc.) processing and storage by session in the internal library which is consumed by OMS and the Crypto Matching Engine.

Software Engineer	Retone, Remote	July 2020 - February 2021

- 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)

- Created the ABE token with *Solidity*.
- 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. *Corda Smart Contracts and Spring*

Firmware Engineer	Lexmark, Philippines	November 2018 - March 2019

- Developed a feature to have different handle for Apple SMTP server*(Embedded C++)*.
- Migrated some projects from Unix Makefile to *CMake*.
- Fixed some functional issues on printer firmware code as well as Coverity and Canary issues.

Software Engineer	Zcoin, Remote	July 2018 - September 2018

- 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

- Integrated Horizen to the Ledger Nano S Hardware Wallet.
- Implemented and integrated Domain fronting with ZenCash Light Wallets*(Arizen wallet, ElectronJS)*.
- 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	NCR Corporation, Philippines	August 2012 - February 2018

Post Office UK, Ltd.
- 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 ancticipate 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**

- 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**

- 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

Additional Experience and Awards

- **1st Prize, 1st Engineering Robotics competition:** Maze Traversal and Line Following category

Programming languages and Technologies

Language(arranged according to proficiency, last 3 ones are basic knowledge)
- C++11/14/17, C, Kotlin, Python, JavaScript, TypeScript, 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, Unix Socket Library

Database
- PostgresSQL, 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