Freddy Li

Blockchain Protocol Developer at Oneledger · Software Engineering Master at University of Waterloo (Toronto, ON Canada)

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"Addicting to technology ; Self-motivated learning ; Definitely NOT nerd ; Love music, love sports and love coding!!"

Skills

- Ethereum, Truffle, Geth, Parity, Solidity, IPFS, Web3, Docker, PBFT, PoW, PoA, PoS, DPoS(Consensus algorithms), Tendermint, Go, NodeJs, Typescript, Java, Python, Android, JavaEE, Jenkins, MySQL, MongoDB, LevelDB, OOP, REST, MVC, Linux, Git

Education

University of Waterloo

Waterloo, ON

Master of Engineering (Software Engineering) — *Sept. 2015 - Dec. 2017*

Tianjin University of Technology

Tianjin City, Tianjin China

Bachelor of Software Engineering — *Sept. 2011 - Jun. 2015*

Working Experience

Oneledger

Toronto, ON

Blockchain Protocol Developer — *Apr. 2019 - Now*

- Technologies: Go, Tendermint, PBFT, levelDB, parity, Solidity, Typescript, JSONRPC, HD key derivation, PostgreSQL
- Designed and developed Oneledger HD Wallet that supports BTC, ETH and OLT(Oneledger) key derivation.
- Designed and developed Oneledger SDK which allows community to build their own apps and talk to Oneledger chain.
- Designed and developed Oneledger Explorer and Explorer SDK which allows community to query Oneledger block and transaction info.
- Developed Oneledger chain Apply Validator feature.
- Developed Oneledger chain Fee feature.

Skyquark

Toronto, ON

Blockchain Application Developer — *Apr. 2018 - Apr. 2019*

- Technologies: Ethereum, geth, parity, Solidity, Truffle, Mist, web3, IPFS, EOS, Docker, koa
- Designed and developed Skyquark Crowdsourcing system back-end using Nodejs, MongoDB, LevelDB, web3js, Parity
- Designed and developed Skyquark Aristotle Chain using Parity.
- Designed and developing the Aristotle token system within Edusphere eco-system.
- Developed Edusphere Intellectual Property protection dApp(smart contracts) on Aristotle Chain.
- Developed Edusphere certificate verification dApp(smart contracts) on Aristotle Chain.
- Designed and developed Skyquark ICO smart contract(ERC-20)
- Provided 'Blockchain for Junior' online lectures as instructor at www.edusphere.io
- Developed an EOS based PoC of Aristotle Chain prototype.

BlackBerry

Waterloo, ON

Security platform Automation Developer Intern — *May. 2017 - Sept. 2017*

- Technologies: Android, Jenkins, Shell Script, UiAutomatorViewer, JUnit4, Linux, Git, JIRA, SSH, Security key exchange
- Developed security key based unit test cases including S/MIME, PGP and large size Sign and Encrypt key.
- Developed test sanity to automatically build testing job for different BlackBerry app components.
- Set up and configure Jenkins server and nodes to organize BlackBerry security message jobs.
- Designed and developed Monkey command tool App for automation and pressure test on BlackBerry apps.

TCSL

Tianjin City, Tianjin China

Full Stack Developer — *Feb. 2015 - Aug. 2015*

- Technologies: JavaEE, JavaScript, jQuery, Struts2, Spring3, Hibernate4, Linux, Maven, Nexus, Tomcat, PostgreSQL, SVN
- Participated in design and development the architecture and backend framework.
- Built a local maven component server for the entire developing group.
- Developed business components of data persistence using Hibernate.
- Developed business transactions control unit using Spring.
- Participated in the development of user interfaces.

Oracle

Tianjin City, Tianjin China

Back-end Developer Intern — *Sept. 2014 - Feb. 2015*

- Technologies: JavaEE, AJAX, jQuery, DBCP, MySQL, Tomcat, Apache Component lib, MVC, Linux, SSH, Git
- Developed a social network system based on JavaEE(SSH framework) and MySQL.
- Designed the database and implemented with PowerDesigner.
- Designed the architecture and using MVC for implementation.
- Awarded Best Intern Project by Oracle.

Projects(Github)

Oneledger SDK

Technologies: Typescript, RPC, JSON serialization, messagePack — *Apr. 2019 - now*

- Oneledger Chain SDK is the middle layer between community developers and oneledger blockchain which allows developers to query block or transaction info from remote RPC endpoint or serialise transactions offline and securely send transactions.
- Support multiple offline serialization implementations such as JSON base64, MessagePack.
- Easily configurable transaction offline serialization and sign workflow which allows community to extend their own transaction types and use different network.
- Support different type of transaction broadcasting.
- Support RPC Call for regular transaction type and HTTPS API call for BTC Interoperability transaction type.
- Support different chain's transaction with default currency registration and other optional currencies.
- Easily configurable error handler for community to add and handle new errors.
- Integrated with Oneledger Explorer which allows community to query all kinds of chain info.
- Provided faucet to mint OLT tokens for Testnet.

Oneledger Hierarchical Deterministic(HD) Wallet

Technologies: Typescript, BIP-39, Ed25519, Secp256K1, RIPEMD160, SHA256 — *Jun. 2019 - Now*

- Oneledger HD Wallet allows community to generate new keypairs and sign RawTxs for multiple chains.
- Support configurable entropy to derive master seed for backup.
- Support whole wallet recovery from any device.
- Support BTC, ETH and OLT(Oneledger) keys derivation.
- Encapsulated master seed and any private key derivation for security.
- Export new key derivation and transaction sign to caller.
- Using hardened extended key path for local wallet.
- Support different address verification based on the chain type.

Oneledger Protocol

Technologies: Go, Tendermint — *May. 2019 - Now*

- Oneledger chain is one of the main Blockchain networks which aims to build enterprise level Interoperability and open source for community to build apps.
- Using Tendermint as core consensus component, Oneledger chain builds application(Fullnode) layer, transaction verification layer and chain state distributed database layer on fullnode and explorer node.
- Contributed on Apply Validator feature. Allow fullnode address to stake and become a validator or unstake to purge validator.
- Contributed on Transaction Fee feature. Designed and implemented transaction fee charge logic, fee collection and fee reward withdraw for validators.

Oneledger Explorer

Technologies: Go, Tendermint, PostgreSQL *Aug. 2019 - Now*

- Oneledger chain Explorer is a centralized server to watch and synchronize new block from Oneledger Fullnode and provide API for querying Oneledger chain info.
- By connecting to RPC endpoint of a Fullnode Tendermint, watch and sync all blocks and all transactions and persist in PostgreSQL.
- Catching up blocks and transactions if Explorer is down or restarted.
- Easily extendable transaction type design and DB design for new transaction types in Protocol.
- Provide web socket for Oneledger Explorer UI.
- Provide API for community developers to query blocks and transactions info.

Skyquark Aristotle Chain

Technologies: Truffle, Parity, AWS *May. 2018 - Apr. 2019*

- Aristotle Chain using parity with PoA consensus algorithm generates an EVM based public chain for the foundation of Skyquark Eco-system.
- Users need to sign up Edusphere system to get a wallet address connecting to Aristotle Chain.
- ETH Pre-fund accounts are transaction validators who are responsible for mining new blocks, validating all transactions.
- Users could be part of validators and sync full Aristotle Chain blocks to earn more tokens.

Skyquark Crowdsourcing System

Technologies: Nodejs, KoA, MongoDB, LevelDB, web3.js, truffle, AWS, Postman *Sept. 2018 - Apr. 2019*

- Crowdsourcing system is the extension of Nodejs back-end web server between Edusphere system and Aristotle Chain.
- It's also the Aristotle chain user address, chain nodes and smart contracts management center.
- It connects with MongoDB as main business logic database and LevelDB as users reputation and other behaviors databases.
- It communicates with Aristotle Chain through Web3.js API.
- It provides APIs to the front-end edusphere system.
- It provides users a revenue auto-distribution system based on the Aristotle Token mechanism without signing any paper or electrical revenue sharing contracts
- Users behaviors on edusphere.io will be used to calculate the reputation and token rewards and the smart contracts deployed on Aristotle Chain will be triggered to make reward transactions

Skyquark ICO Smart Contract for Aristotle Token

Technologies: Solidity, Truffle, Remix IDE, Ethereum Wallet, OpenZeppelin, Quantstamp *Aug. 2018 - Oct. 2018*

- This ICO smart contract has four components: Secure math, ownership control, pause, ERC-20 implementation.
- It has been tested by OpenZeppelin and Quantstamp.
- It was deployed on Ethereum mainnet but tested on Rinkeby.
- Aristotle Token is able to be transferred between Ethereum mainnet and Aristotle chain using parity bridge protocol(developing).

Skyquark Intellectual Property Protection dApp

Technologies: Truffle, Solidity, Web3, NodeJs, IPFS, Webpack *June. 2018 - Sept. 2018*

- IP Protection dApp developed on Rinkeby testnet first and deployed to Aristotle Chain after.
- It has four different layers: chain layer, smart contract layer, web3(NodeJs) layer and UI layer
- For the web part, it needs a web server like AWS to host the all front-end resource files(or IPFS) and web3 will connect to blockchain provider to interact with smart contracts and send transactions to the chain.
- For all large size documents that users submit, they are all stored on the IPFS, only hash value will be stored into blockchain.

Monkey

Technologies: Android, adb shell monkey, Android system permission, Android system sign, Git *June. 2017 - Sept. 2017*

- This is an Android application for BlackBerry Spark Day.
- This app encapsulates adb shell monkey command for BlackBerry internal pressure and performance testing.
- Granting Android system permission and system sign to run sudo commands.
- Running monkey command on target apps and generating the testing report for analyzing.

Waterloo Discovery

Technologies: Android, Google Map API, Geolocation, AWS, MySQL, Web Server, Git *Feb. 2017 - Feb. 2017*

- Developed an Android application about exploring the city of Waterloo for new comers such as international students and travelers in 2 people's team.
- Using Google Map API to locate users, then calculate the distance.
- Using Google Nearby resources.
- Awarded Top 5 Hackathon project.

Accomplishments

Waterloo Hackathon No.1 Team 2016

Oct. 2016 - Oct. 2016

- Technologies: HTML5, CSS3, AngularJS.
- Developed a widget based on UW Portal SDK in a 5 people team.
- This widget allows students to create and answer questions for different subjects.
- Questions and answers could be ranked by different features.
- Awarded No.1 Hackathon project.

Java Coding Standards Research

Mar. 2016 - Jul. 2016

- Research about Java Coding Standard – Exception chapter.
- Software Reliability Engineering Research.
- Applying testing tools to prove reliability. ex. PMD, SonarQube, FindBugs, JML, Checker Framework, Z3, SMT, SAT.
- Awarded Top Research project by UW Research Group in Summer 2016.

Honors & Awards

2015	**Outstanding Graduated Student**, Tianjin University of Technology	*Tianjin China*
2015	**National Scholarship of China**, Tianjin City Government	*Tianjin China*
2014	**First Class Student Scholarship**, Tianjin University of Technology	*Tianjin China*