

Yuan Zhou

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Tsinghua University (*Ranked 12 in the World University Rankings by Times*)
University of Denver

Master	Computer Science	2017-2020
Bachelor	Computer Science	2011-2014

Experienced **Senior Full Stack Developer** with over 7 years in **blockchain, AI and mobile app development**, specializing in **Ethereum and Cosmos** ecosystems. Successfully led projects at **Multiverse Labs**. Holds a Master's in Computer Science from **Tsinghua University** and a notable IEEE TDSC publication. Completed a four-year course in three years at the University of Denver. Former U.S. Army service member with an **honorable discharge** and recipient of the 'Sky Master' **battalion awards**.

Multiverse Labs (multiverse.ai) *Senior Full Stack Developer* 2021.07-2024.06

RAG AI Application: Architected and led the development of a sophisticated RAG AI application hosted on Google Cloud Platform, leveraging Firestore for robust data management of user documents, including chat history and configurations. Pioneered a system allowing users to upload and selectively merge documents to form a dynamic knowledge base, optimizing the AI's response capabilities. Implemented Cloud Storage solutions for efficient indexing, utilizing both OpenAI and HuggingFace Embeddings for local and remote processing. Designed and integrated an intuitive user interface, facilitating seamless user interactions and document management, which significantly enhances the usability and accessibility of AI-driven data retrieval and analysis. This project underscores my expertise in AI application development, cloud architecture, and user-centric design, contributing significantly to advancing AI accessibility and functionality in practical applications. (**React Native, Flask, Google OAuth, cloud run, storage, and firestore, etc.**)

HODL Decentralized App: Led the design, architecture, and development of [Hodlnodes.com](https://hodlnodes.com) and stake.hodlnodes.com, showcasing expertise in full-stack development. Used solidity to write the hodlnodes's smart contract on Ethereum. Pioneered the front-end application of stake.hodlnodes.com using Next.js, creating a responsive and user-friendly interface. Engineered the back-end infrastructure utilizing Google Firestore, including designing a robust and scalable database schema, and ensured efficient hosting on Vercel. Spearheaded the setup and management of a staking device for the Ethereum blockchain, implementing a custom ARM Linux system. Maintained high security and reliability standards by managing the device's firewall and overseeing continuous internet monitoring, ensuring uninterrupted and secure blockchain operations (**Solidity, WalletConnect, Metamask, Next.js, Google cloud functions, scheduler, firestore, etc.**)

NFT minting website: Developed a user-centric platform for custom NFT creation and deployment on the Ethereum blockchain, leveraging Solidity for smart contract development and integrating Web3 technologies. Designed an intuitive UI enabling advanced NFT customization and easy contract deployment, while implementing robust security measures and conducting extensive testing to optimize contract efficiency and minimize gas costs. (**Solidity, WalletConnect, React, express, ether.js, cloud functions, scheduler, etc.**)

Multiverse Meta Land: Developed a cutting-edge, user-friendly platform poised to revolutionize the buying, selling, and trading of virtual land in the metaverse, catering to both individual and business needs. Architecturally designed the entire land sale process, incorporating advanced blockchain technology to ensure secure and transparent transactions. Implemented an intuitive user interface that simplifies complex land acquisition processes, enhancing user engagement and accessibility. This platform not only streamlines the virtual land transaction process but also sets a new standard in the digital real estate market within the metaverse ecosystem.

U.S. Army *AH-64 Armament / Electrical / Avionic Systems Repairer* 2016.01-2017.01
Honorable discharge. Rank 1st in 18-16 class. Sky Master from 1-222nd Battalion reward 2016-12

arcPI *iOS and Android Engineer* 2014.06-2016.01

Using Java, Swift, Objective-C for native mobile App. PHP, MySQL, mongoDB for the back-end server.



Achievements

JNI Global References Are Still Vulnerable: Attacks and Defenses *Co-first Author* 2020.04-2020.04
<https://ieeexplore.ieee.org/document/9095351>

Top-tier journal article (IEEE TDSC - CCF Category A) on the issue of JNI Global Reference resource exhaustion, proposing an automatic vulnerability detection framework and method, and constructing attacks and defenses. Using the automatic detection method, 22 vulnerabilities were found in Android 8.1, and 16 were found in Android 9.

Utilizing these vulnerabilities, various attacks were constructed that can paralyze and indefinitely restart the Android system (including the Android 10). Designed a defense method that can successfully withstand these attacks.

Android Service Layer Testing Framework Based on Automatic Code Generation *First Author* 2020.05-2020.05
<https://wjys.cbpt.cnki.net/WKD2/WebPublication/paperDigest.aspx?paperID=fc0c4d88-74a7-45bb-a308-d20a1c3a5f44>

Interchain Developer Academy - Certification *Cosmos SDK Developer* 2023.08
<https://badgr.com/public/assertions/1d6EwR06T4qpXIIzV3Ql6w>

Skills

Programming: Solidity, TypeScript, JavaScript, Java, Python, Swift, Kotlin, C, C++, Go, and Rust.

Blockchain and Web3: Truffle, Hardhat, Web3.js, ethers.js, IPFS, Arweave, and Chainlink.

Frameworks & Libraries: ReactJS, NextJS, AngularJS, NodeJS, ExpressJS, jQuery, Bootstrap, Pandas, Jest, Mocha, Ignite CLI, Flask App, PyTest, Cosmos SDK and CosmJS.

Tools & Platforms: Docker, Kubernetes, Kafka, Git, GitHub, SVN, AWS, Google Cloud Platform (OAuth, Cloud functions, Cloud run, Scheduler, Firestore, etc.), Azure Cloud (AI cognitive search, OpenAI API), Parse Server, OpenAI, Langchain, Prometheus, and Grafana

Database: MySQL, NoSQL, MongoDB, Firebase Firestore, Google Cloud storage, GraphQL