Wonjae **Choi**

BLOCKCHAIN RESEARCH ENGINEER

Seoul, Republic of Korea

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"In Trustlessness We Trust."

Education

Seoul National University
M.S/Ph.D. in Electrical and Computer Engineering

Seoul, Korea
Sep. 2024 - Present

- Virtual Machine & Optimization Lab
- Focus on Blockchain & Cryptography Research

Yonsei University
B.S. in Computer Science

Seoul, Korea
Mar. 2020 - Aug. 2024

- Scholarship Granted by Wemade (₩ 5,000,000)

Skills

Programming	Good: Rust, Solidity, Python Intermediate: C/C++, Go, Typescript
Research	Blockchain, Cryptography, Layer 2, Zero-Knowledge Proof, TEE, MEV
Others	Smart Contract, Full-Stack Web, TEE, Linux, Git, Docker, RabbitMQ

Working Experience

Radius
Research Engineer

Seoul, Korea
Oct. 2024 - Present

- Lead the development of lightbulb, a secure block block building system using TEE.
- Research and development on Intel TDX and Linux security modules integration.
- Developed with Rust and Go leveraging multi-threading.

Nethermind
Research Engineer Intern

London, England (Remote)
June. 2024 - Sep. 2024

- Cryptography research & engineering
- Research and development on FRIDA(YoDA) which is new DAS scheme using FRI Proof.
- Developed initial build of YoDA client based on Reth.

Seoul National University Virtual Machine & Optimization Lab
Undergraduate Research Intern

Seoul, Korea
Feb. 2024 - Aug. 2024

- Conducted research on Ethereum core and execution clients.
- Conducted research on ZKP.
- Experiment on fuzzing EVM on various Ethereum execution clients.

XRPL Korea
Blockchain Developer & Developer Relations

Seoul, Korea
June. 2023 - Sep. 2023

- Developed DEX on XRPL.
- Researched and developed WASM contract on XRPL.
- Made an technical documentation for Korean XRPL developers.
- Held several technical sessions on meetups.

Web3Mon
Smart Contract & Backend Developer

Seoul, Korea
Feb. 2023 - May. 2023

- Developed smart contracts(programs) using Rust for Solana.
- Maintained and developed Rust backend server.
- Conducted research on the novel cross-chain implementation using virtual state channel.

Freelance *Remote*

Quantitative Developer *Oct. 2021 - Jan. 2023*

- Algorithmic Trading:
    - Developed trading algorithms using technical analysis and AI.
    - Handled large and performance-sensitive data pipeline.
- Researched and developed MEV bot
- AUM $400k

Extracurricular Activity

Decipher *Seoul National University, Korea*

Senior Researcher *Sep. 2023 - Present*

- A member of Decipher, a blockchain society at Seoul National University.
- Awarded the "Best Member Prize" for the second semester of 2024.
- Team Opensource Warriors
    - Contributed to ERC-6900 github and Alchemy team.
    - Conducted research and made a simulation model for LVR minimization method on AMM DEX.
- ZK Research Team
    - Conducted various research on ZKP and rollup architectures.
    - Made PoC level implementation of MSM computing network for ZKP using gRPC.
- Academic Paper Seminar Group (Nonceipher)
    - Organized a weekly academic paper seminar group.
    - Each member presents academic paper from the top academic conferences.
- Bitcoin Scalability Team
    - Published presented 70 pages long Bitcoin Report.
- Held weekly sessions about "BitVM", "Data Availability", "Future Bank" and published the researches on Medium.

Blockchain at Yonsei *Yonsei University, Korea*

Tech Lead & Board Member *Sep. 2022 - Aug. 2023*

- Drove research initiatives on emerging topics in blockchain and web3 technologies.
- Prepared and lectured solidity smart contract development for 12 hours course.
- Conducted research on MEV and made arbitrage bot using cyclic arbitrage method on DEX.

Morgorithm (Algorithm Club at Yonsei University) *Yonsei University, Korea*

Member *Mar. 2020 - Mar. 2022*

- Solved and learned algorithm problems in depth and improved coding skills.
- Participated Morgorithm algorithm camp, studied various in-depth algorithms.

Honors & Awards

International

Chainlink Constellation Hackathon *Online*

Top Quality Prize, Best Use of Subgraph *Dec. 2023*

- Crosschain Lending Protocol
- Implemented crosschain functionalities with CCIP(crosschain interoperability protocol).
- Used DID, graph, oracle services.

Viction Horizon Hackathon *Online*

Defi Track 3rd Prize *Dec. 2023*

- Delta Neutral Stablecoin using Perpetual DEX.
- Used Layerzero for crosschain support.
- Used VRC-25 for native gas paymaster usage.
- 4 days full-sponsored tour to Vietnam hosted by Coin98.

XRPL Summer Hackathon | Ripple *Online*

Grand Prize *Aug. 2023*

- Implemented concentrated liquidity pool.
- Used XRPL hooks which is a Web Assembly based smart contract on XRP Ledger.

Ethereum Global Tokyo Hackathon *Tokyo, Japan*

Polygon Track Prize *April. 2023*

- Federated learning on public blockchain.
- Implemented p2p AI learning protocol.

Projects

XRPL Swap

XRP Ledger

LEAD DEVELOPER

June. 2023 - Oct. 2023

- Made a DEX platform on XRPL.
- WASM Smart Contract (XRPL Hooks) & Backend.
- Designed novel tokenomics leveraging native AMM auction on XRPL.
- Pitched on XRPL side event of Korean Blockchain Week(KBW).

Bitcoin Layer 2

Confidential

RESEARCHER & DEVELOPER

Feb. 2024 - April. 2024

- Conducting research on building Layer 2 on Bitcoin.
- Researched on verifying ZKP on Bitcoin using BitVM and OP_CAT.

Presentation

Blockchain at Yonsei Regular Session

Yonsei University, Korea

PRESENTER FOR <REGULAR SESSIONS IN BLOCKCHAIN AT YONSEI>

Mar. 2023 - July. 2023

- Held regular sessions.
- Conducted 6-week Solidity course.

XRP Ledger Korea Dev Meetup

Seoul, Korea

PRESENTER FOR <XRP LEDGER DEV SESSION>

Aug. 2023

- Introduced XRP Ledger architecture and technical features.
- Held practice session to help developers on-boarding.