

Intak Hwang

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RESEARCH INTERESTS

Lattice-Based Cryptography, Fully Homomorphic Encryption and Zero Knowledge Proofs

EDUCATION

Seoul National University

2023 — Present

Integrated M.S./Ph.D. in Computer Science & Engineering

Advisor: Prof. Yongsoo Song

DGIST

2018 — 2022

B.S. in School of Undergraduate Studies

Summa Cum Laude

PUBLICATIONS

2025/395

Provably Secure Approximate Computation Protocols from CKKS

Intak Hwang, Yisol Hwang, Miran Kim, Dongwon Lee, Yongsoo Song

2025/382

On the Security and Privacy of CKKS-based Homomorphic Evaluation Protocols

Intak Hwang, Seonhong Min, Jinyeong Seo, Yongsoo Song

A Privacy-Preserving HLA Imputation Method with Homomorphic Encryption

Hakin Kim, Intak Hwang, Yongsoo Song, Buham Han

2025/216

Practical Circuit Privacy/Sanitization for TFHE

Intak Hwang, Seonhong Min, Yongsoo Song

2025/203

Ciphertext-Simulatable HE from BFV with Randomized Evaluation

Intak Hwang, Seonhong Min, Yongsoo Song

2024/1879

Practical Zero-Knowledge PIOP for Public Key and Ciphertext Generation in (Multi-Group) Homomorphic Encryption

Intak Hwang, Hyeonbum Lee, Jinyeong Seo, Yongsoo Song

2024/1502

TopGear 2.0: Accelerated Authenticated Matrix Triple Generation with Scalable Prime

Fields via Optimized HE Packing

Hyunho Cha, Intak Hwang, Seonhong Min, Jinyeong Seo, Yongsoo Song

2024/306

Concretely Efficient Lattice-based Polynomial Commitment from Standard Assumptions

Intak Hwang, Jinyeong Seo, Yongsoo Song

CRYPTO 2024

2023/1328

Optimizing HE via Level-aware Key-switching

Intak Hwang, Jinyeong Seo, Yongsoo Song

WAHC 2023

HONORS AND SCHOLARSHIPS

National Cryptographic Contest	2024
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Grand Prize, Excellence Prize

National Cryptographic Contest	2023
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Special Prize

CTF Security Competitions	2020 — 2022
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SSTF Hacker's Playground 2022	5th place
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WhiteHat Contest 2021	3rd place
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DEF CON CTF 2021	Finalist
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PlaidCTF 2021	5th place
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Real World CTF 2020/2021 (Media Coverage)	1st place
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Midnight Sun CTF 2020 Finals	7th place
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TokyoWesterns CTF 2020 Finals	3rd place
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DEF CON CTF 2020	Finalist
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DGIST Dean's List	2020
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SKILLS

Languages

Korean (native), English (fluent)

Programming Languages

Go, Python (SageMath), C/C++, C#, Rust, \LaTeX

OTHER ACTIVITIES

Member of CTF Team CodeRed	2020 — Present
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I participate in CTF competitions from time to time, mostly solving crypto challenges.

Developer & Writer of Team Invertible

2020 — Present

I am actively working on INVERTIBLE, a sokoban puzzle game. We are planning to release the game on Steam.

OTHER INTERESTS

I love watching films. I wrote and directed four short films, and I still write screenplays as a hobby!