

# Hwang In Tak

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## RESEARCH INTERESTS

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

## EDUCATION

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**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

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**A Privacy-Preserving HLA Imputation Method with Homomorphic Encryption**

*Hakin Kim, Intak Hwang, Yongsoo Song, Buham Han*

In Submission

**Practical Circuit Privacy/Sanitization for TFHE**

*Intak Hwang, Seonhong Min, Yongsoo Song*

In Submission

**Ciphertext-Simulatable HE from BFV with Randomized Evaluation**

*Intak Hwang, Seonhong Min, Yongsoo Song*

In Submission

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*

In Submission

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*

In Submission

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

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<b>National Cryptographic Contest</b>	2024
Grand Prize, Excellence Prize	
<b>National Cryptographic Contest</b>	2023
Special Prize	
<b>CTF Security Competitions</b>	2020 — 2022
SSTF Hacker's Playground 2022	5th place
WhiteHat Contest 2021	3rd place
DEF CON CTF 2021	Finalist
PlaidCTF 2021	5th place
Real World CTF 2020/2021 (Media Coverage)	1st place
Midnight Sun CTF 2020 Finals	7th place
TokyoWesterns CTF 2020 Finals	3rd place
DEF CON CTF 2020	Finalist
<b>DGIST Dean's List</b>	2020

## SKILLS

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**Languages**

Korean (native), English (fluent)

**Programming Languages**

Go, Python (SageMath), C/C++, C#, Rust,  $\text{\LaTeX}$

## OTHER ACTIVITIES

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**Member of CTF Team CodeRed** 2020 — Present  
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

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