

## Research Interests

---

AI Privacy, Privacy-Preserving Machine Learning (PPML), Homomorphic Encryption

## Education

---

### Pohang University of Science and Technology (POSTECH)

M.S. in Electrical Engineering

South Korea

Feb. 2027 (expected)

– Advisors: Prof. Yongjune Kim

### Chung-Ang University

B.S. in Computer Science and Engineering

South Korea

Feb. 2025

– GPA: 4.31/4.50 (*Summa Cum Laude*)

## Publications

---

\*: Equal contribution

- [1] H. Park\*, **B.-S. Min**\*, J. Woo, M.-W. Jeong, J. Shin, Y. Lee, Y.-S. Kim, and Y. Kim, “Efficient softmax reformulation for homomorphic encryption via moment generating function”, *arXiv preprint arXiv:2602.01621*, Feb. 2026, *submitted to ICML 2026*.
- [2] **B.-S. Min** and J.-W. Lee, “Low-latency linear transformations with small key transmission for private neural network on homomorphic encryption”, *Cryptology ePrint Archive*, Jun. 2024, *submitted to Neurocomputing*.

## Service

---

- **Reviewer**, IEEE Transactions on Dependable and Secure Computing Feb. 2026
- **Reviewer**, IEEE Transactions on Dependable and Secure Computing Apr. 2025

## Projects

---

- Optimization Methods for Improving the Accuracy of Homomorphically Encrypted LLM Inference 2026  
*LG Electronics*
- Optimizing Homomorphic Computations for Transformer Models 2025  
*LG Electronics*
- Building and optimizing GPU-based homomorphic encryption library 2023  
*Samsung Advanced Institute of Technology*

## Patent

---

1. Efficient Operation Processing System or Method Therefor, Y. Kim, J. Woo, **B.-S. Min**, and H. Park, 10-2026-0006852, filed.
2. Computational efficient approximation method for softmax, Y. Kim, J. Woo, **B.-S. Min**, and H. Park, 10-2025-0095082, filed.
3. Device and Method for Providing Homomorphic Encryption-Based Private Neural Networks Using Low-Latency Linear Transformation, J.-W, Lee, and **B.-S. Min**, 10-2025-0018299, filed.
4. Apparatus and Method of Homomorphic Encryption Operation, J.-W, Lee, **B.-S. Min**, and S. Song, 10-2024-0003754, filed.

## Extracurricular Activities

---

- |   |           |
|---|-----------|
| • Band Club (Nuriwoolim), Chung-Ang University<br><i>Vocal, Keyboard</i>                  | 2020–2025 |
| • Theater Club (Yeongjuk Stage), Chung-Ang University<br><i>Actor, Assistant Director</i> | 2024–2025 |