

Research Interests

AI Privacy and Security, Privacy-Enhancing Technologies, 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. Min***, J. Woo, M.-W. Jeong, J. Shin, Y. Lee, Y.-S. Kim, and Y. Kim, “CGF-Softmax: A cumulant-based softmax reformulation for efficient inference under homomorphic encryption”, *arXiv preprint arXiv:2602.01621*, May 2026, *submitted to NeurIPS 2026*.
- [2] **B. 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. Min**, and H. Park, 10-2026-0006852, filed.
2. Computational efficient approximation method for softmax, Y. Kim, J. Woo, **B. 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. Min**, 10-2025-0018299, filed.
4. Apparatus and Method of Homomorphic Encryption Operation, J.-W, Lee, **B. Min**, and S. Song, 10-2024-0003754, filed.

Extracurricular Activities

- Band Club (Nuriwoolim), Chung-Ang University 2020–2025
Vocal, Keyboard
- Theater Club (Yeongjuk Stage), Chung-Ang University 2024–2025
Actor, Assistant Director