

# Byeongseo Min

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## Research Interests

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

## Education

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

M.S. in Electrical Engineering

- Advisors: Prof. Yongjune Kim

South Korea

Feb. 2027 (expected)

### Chung-Ang University

B.S. in Computer Science and Engineering

- GPA: 4.31/4.50 (*Summa Cum Laude*)

South Korea

Feb. 2025

## 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
- **Reviewer**, IEEE Transactions on Dependable and Secure Computing

Feb. 2026

Apr. 2025

## Projects

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

## Patent

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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

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