

# Hunjun Lee

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## PERSONAL

Webpage: <https://hpcs.snu.ac.kr/~hunjun>  
Date of birth: Mar 1995  
Citizenship: South Korea  
Languages: Korean (native), English (fluent)

## RESEARCH INTERESTS

Computer Architecture  
Brain-Inspired Computing Architecture  
Brain-Computer Interface  
Process-in-Memory Architecture

## EDUCATION

**Seoul National University**, Seoul, South Korea

- M.S. / Ph.D. student in Electrical and Computer Engineering Mar 2018 – Present
  - Advisor: Prof. Jangwoo Kim
- B.S in Electrical and Computer Engineering Mar 2014 – Feb 2018
  - Graduated with Cum Laude

## RESEARCH EXPERIENCE

**High Performance Computer System Lab, SNU**, Seoul, South Korea

- Designing an Optimal Brain-Inspired Computing System
  - Flexible simulation system [MICRO2019]
  - High performance simulation system [ASPLOS2021]
  - Scalable simulation system [HPCA2022]
  - Performance analysis [Neurocomputing]
- Designing a Secure Microarchitecture
  - Vulnerabilities in micro-operation caches [MICRO2021]
- Designing an Optimal PIM Architecture
  - 3D NAND flash-based PIM unit [MICRO2022]

## PUBLICATIONS

- [MICRO2022] **3D-FPIM: An Extreme Energy-Efficient DNN Acceleration System Using 3D NAND Flash-Based In-Situ PIM Unit**  
Hunjun Lee, Minseop Kim, Dongmoon Min, Joonsung Kim, Jongwon Back, Honam Yoo, Jong-Ho Lee, and Jangwoo Kim  
*Proceedings of the 55th IEEE/ACM International Symposium on Microarchitecture (MICRO) Oct 2022.*
- [HPCA2022] **NeuroSync: A Scalable and Accurate Brain Simulation System Using Safe and Efficient Speculation**  
Hunjun Lee, Chanmyeong Kim, Minseop Kim, Yujin Chung, and Jangwoo Kim  
*Proceedings of the 28th IEEE International Symposium on High-Performance Computer Architecture (HPCA) Apr 2022.*
- [MICRO2021] **UC-Check: Characterizing Micro-operation Caches in x86 Processors and Implications in Security and Performance**  
Joonsung Kim, Hamin Jang, Hunjun Lee, Seungho Lee, Jangwoo Kim  
*Proceedings of the 54th IEEE/ACM International Symposium on Microarchitecture (MICRO) Oct 2021.*
- [Neurocomputing] **An Accurate and Fair Evaluation Methodology for SNN-Based Inferencing with Full-Stack Hardware Design Space Explorations**  
Hunjun Lee, Chanmyeong Kim, Seungho Lee, Eunjin Baek, and Jangwoo Kim  
*Neurocomputing Sep 2021.*

- **[ASPLOS2021] NeuroEngine: A Hardware-Based Event-Driven Simulation System for Advanced Brain-Inspired Computing**  
Hunjun Lee, Chanmyeong Kim, Yujin Chung, and Jangwoo Kim  
*Proceedings of the 26th ACM International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS) Apr 2021.*
- **[MICRO2019] FlexLearn: Fast and Highly Efficient Brain Simulations Using Flexible On-Chip Learning**  
Eunjin Baek\*, Hunjun Lee\*, Youngsok Kim, and Jangwoo Kim  
*Proceedings of the 52nd ACM/IEEE International Symposium on Microarchitecture (MICRO) Oct 2019.*  
(\*Equal Contribution)

#### HONORS & AWARDS

##### Scholarship

- Global Ph.D. Fellowship, NRF  
The most competitive national scholarship in South Korea

2019 – Present

#### PROFESSIONAL SERVICE

##### Journal Reviews

- IEEE CAL 2023
- ACM TACO 2023
- Parallel Computing 2022

#### TEACHING EXPERIENCE

##### Teaching Assistant

- ECE201 Digital Logic and Lab, SNU (Fall 2018/2019)
- ECE322 Computer Organization, SNU (Spring 2018/2019)

#### INVITED TALKS

- **An Extreme Energy-Efficient In-Memory DNN Acceleration Using 3D NAND Flash** presented at Electronics and Telecommunications Research Institute (ETRI), March 13th, 2023
- **Next-Generation Computer Architecture for Brain-Inspired Computing** presented at Seoul National University AI Summer Camp, August 3rd, 2022