

# Jihoon Hong

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## EDUCATION

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**Georgia Institute of Technology**  
Ph.D., Computer Science

Aug. 2024 – Exp' Aug. 2029

**Seoul National University**  
B.A., Economics & B.S., Computer Science and Engineering  
• Minor in Mathematics

Mar. 2017 – Feb. 2024  
GPA: 3.93/4.0

## SCHOLARSHIPS

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**Kwanjeong Educational Foundation (KEF) Scholarship**

**Kwanjeong Educational Foundation**  
Sep. 2024 – Aug. 2029

## PUBLICATIONS

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**LAMB: A Training-Free Method to Enhance the Long-Context Understanding of SSMs via Attention-Guided Token Filtering**

*Under review for a conference.*

**LongMamba: Enhancing Mamba's Long-Context Capabilities via Training-Free Receptive Field Enlargement**

Z. Ye, K. Xia, Y. Fu, X. Dong, J. Hong, X. Yuan, S. Diao, J. Kautz, P. Molchanov, Y. Lin  
*13<sup>th</sup> Thirteenth International Conference on Learning Representations (ICLR), Apr' 2025.*

**3D Gaussian Rendering Can Be Sparser: Efficient Rendering via Learned Fragment Pruning**

Z. Ye, C. Wan, C. Li, J. Hong, S. Li, L. Li, Y. Zhang, Y. Lin  
*38th Annual Conference on Neural Information Processing Systems (NeurIPS), Dec' 2024.*

**VGA: Hardware Accelerator for Scalable Long Sequence Model**

S. Lee, H. Lee, J. Hong, S. Cho, J. Lee  
*57th International Symposium on Microarchitecture (MICRO), Nov' 2024.*

**A Memory-Efficient Edge Inference Accelerator with XOR-based Model Compression**

H. Lee, J. Hong, S. Kim, S. Lee, J. Lee  
*60<sup>th</sup> Design Automation Conference (DAC), Jul' 2023.*

## RESEARCH EXPERIENCE

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**Efficient and Intelligent Computing Lab, GaTech**

Aug. 2024 - Apr. 2025

Graduate Research Assistant, Advisor: Prof. Yingyan (Celine) Lin

- Developed a framework that leverages LLMs to generate cycle-level simulators for custom hardware from natural language specification
- Working on a reasoning model that performs hardware engineering through Github pull requests

**Architecture and Code Optimization Lab, SNU**

Sep. 2022 – Aug. 2023

Undergraduate Research Assistant, Advisor: Prof. Jae W. Lee

**Cryptography and Privacy Lab, SNU**

Jun. 2022 – Aug. 2022

Undergraduate Research Assistant, Advisor: Prof. Yongsoo Song

## PROJECTS

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### GPU Kernel Optimization for Deep Learning

May. 2023 – Jun. 2023

- Implemented optimized GPU kernels for end-to-end inference of a Seq2Seq translation model on a GPU cluster using MPI and CUDA, achieving ~14,000x speed-up compared to a naïve CPU implementation

### Café Seat Detector

Oct. 2022 – Dec. 2022

- Combined camera calibration, image rectification through homography, and YOLO v5 object detection model to process multi-view CCTV footage and identify vacant seats in a café

### News Classification Contest

Dec. 2020 – Feb. 2021

- Implemented an LSTM-based RNN model to distinguish actual finance news article sentences from advertisement phrases

### Military Camp Guide Application

Jun. 2020 – Oct. 2020

- Developed an android application that introduces the camp to visitors

### Military Program Survey System

Mar. 2020 – Nov. 2020

- Developed a website that collects survey data on training programs from soldiers, and displays relevant statistics with feedback to instructors using HTML, PHP and SQL

## COMMUNITY SERVICE

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### Korea University Guro Hospital Mentoring Program

Mar. 2023 – Aug. 2023

Mentor/Session Leader

- Held weekly mentoring sessions for long-term hospitalized students to teach mathematics and programming
- Designed curriculums for each age group of patients, ranging from elementary to high school

### Incheon International Airport Quarantine Service

Jun. 2020 – Jul. 2020

Military Interpreter

- Provided interpretation services to foreigners flying into Korea during the pandemic outbreak