

# SEONYOUNG KIM

seonyoungkim55@gmail.com  
[seonyoungkims.github.io](https://seonyoungkims.github.io)

## EDUCATION

---

Korea Advanced Institute of Science and Technology (KAIST) <i>Daejeon, South Korea</i> M.S. in Computer Science	Sep. 2019 - Feb. 2022
• Thesis: Generating small anomaly detection models through distillation of long term dependency.	
Hongik University <i>Seoul, South Korea</i> B.S.E. in Computer Engineering	Mar. 2015 - Aug. 2019
• GPA: 4.24/4.50 (Ranked 3rd of 173 students)	

## RESEARCH EXPERIENCE

---

SoC Architecture Team   Samsung Research <i>AI Researcher</i>	Aug. 2022 - Present
• Research on Model Compression, Optimization, and HW-SW Co-Design for AI	
• Commercial Deployment of AI Models on Neural Processing Unit (NPU)	
• NPU Model Validation	
Database Lab   KAIST <i>Graduate Research Assistance</i> Advisor: Professor Myoungho Kim	Sep. 2019 - Feb. 2022
• Knowledge Distillation	
• Time-series Anomaly Detection	
Research Lab for Distributed Intelligence and Autonomy   Hongik University <i>Undergraduate Research Assistant</i> Advisor: Professor Young Yoon	Nov. 2018 - Aug. 2019
• Data Analysis	
• Distributed system	

## PUBLICATIONS

---

### Under Review

- Seonyoung Kim\*, Jooeun Kim\*, Hayoung Yun, Meejeong Park, Sangjeong Lee, Hanjoo Cho, and Heonjae Ha. “Bespoke LUT: Non-Linear Approximation for Integer-only Transformer Inference on NPUs.” *Under review at IEEE Transactions on Emerging Topics in Computing (IEEE TETC)*, 2025.
- Youngcheon Yoo, Banseok Lee, Minseop Choi, Seonyoung Kim, Hyochan Chong, Changdong Kim, Youngmin Kim, and Dongkyu Kim. “RaBiT: Residual-Aware Binarization Training for Accurate and Efficient LLMs.” *Under review at International Conference on Learning Representations (ICLR)*, 2025.

### Thesis

- Seonyoung Kim. “Generating Small Anomaly Detection Models through Distillation of Long-Term Dependency.” *Master’s Thesis*, KAIST, School of Computing, 2022.

### Published

- Seonyoung Kim and Myoungho Kim. “Knowledge Distillation for Anomaly Detection in Multivariate Time Series Data.” *Korea Computer Congress (KCC)*, 2021.

## PATENT

---

- Youngcheon Yoo, Banseok Lee, Minseop Choi, Seonyoung Kim, Hyochan Chong, Changdong Kim, Dongkyu Kim, Youngmin Kim. “Residual-Aware Binarization Training Method.” Patent Pending (KR Patent 10-2025-0133039), 2025.

## PROJECTS

---

1. Efficient AI Deployment on NPUs | Samsung Research Aug. 2022 – Present
  - Developing hardware-aware model compression techniques for LLMs, focusing on ultra low-bit quantization and ongoing publications.
2. Edge Computing-Based Anomaly Detection in Memory Semiconductor Processes | KAIST Sep. 2020 – Sep. 2021
  - Developed an autoencoder-LSTM model for life prediction of memory semiconductors.
3. Chemical Mechanical Planarization (CMP) Wafer Defect Detection Project | KAIST Dec. 2019 – Jun. 2020
  - Developed wafer defect detection using vision models on CMP wafer surface images.
4. Neouly Security Project | Hongik University Dec. 2018 – Jun. 2019
  - Developed a malware detection system using DNN, achieving 97.8% accuracy.
5. AI-based Restaurant Recommendation System | Hongik University Jan. 2018 – Nov. 2018
  - Built a restaurant recommendation system using Bi-LSTM with Word2Vec.

## TALKS AND PRESENTATIONS

---

- Internal Seminar (Journal Club) | Samsung Research Feb. 2023 - Present
  - Presented 8 papers on model compression and LLMs as part of a rotating paper review seminar.
- Graduate Seminar | KAIST Jan. 2019 – May. 2021
  - Presented 6 talks on recent research papers, advanced methods, and my own thesis work.

## HONORS AND SCHOLARSHIP

---

- Outstanding Teaching Assistant Award | KAIST Jun. 2020
  - Recognized as an Outstanding Teaching Assistant based on top-tier student evaluations.
- The Hongik scholarship | Hongik University Aug. 2015 - Sep. 2018
  - Awarded \$15,900 in total, covering approximately four semesters.
- Korea Open Source Software Developers Hackathon | Korea IT Business Promotion Association Oct. 2016
  - Contributed to the Linux perf open-source project and awarded 2nd place.

## TEACHING ASSISTANT

---

- Database System, Graduate Course | KAIST Mar. 2021 – Jun. 2021
- System Programming, Undergraduate Course | KAIST Sep. 2020 – Dec. 2020
- Data Structure, Undergraduate Course | KAIST Mar. 2020 - Jun. 2020

## ACTIVITIES

---

- Vice President, Graduate Student Association | School of Computing, KAIST Mar. 2020 – Feb. 2021