

# Daegun Yoon

High Performance Computing System Research Section  
Future Computing Research Division  
Artificial Intelligence Computing Research Laboratory  
ETRI, Republic of Korea

Tel: +82 42-860-5859  
Phone: +82 10-9471-4249  
Email: kljp@etri.re.kr  
Homepage: <https://sites.google.com/view/kljp>

---

## RESEARCH INTERESTS

**On-Device Inference:** ReRAM-based on-device sLLM inference via model compression and model layout transformation  
**Distributed Training:** Scalable distributed machine learning via gradient sparsification  
**High-Performance Computing:** Performance optimization via parallel and distributed computing

---

## POSITIONS

**Researcher** in Electronics and Telecommunications Research Institute (**ETRI**), Republic of Korea Jan. 2024 - Present

---

## EDUCATION

**Ph.D.** in Department of Artificial Intelligence, Ajou University, Republic of Korea Sep. 2018 - Feb. 2024  
Advisor: Prof. Sangyoon Oh  
**B.S.** in Department of Software, Ajou University, Republic of Korea Mar. 2013 - Aug. 2018

---

## SELECTED PUBLICATIONS

- C3. **Daegun Yoon**, Sangyoon Oh, “Preserving Near-Optimal Gradient Sparsification Cost for Scalable Distributed Deep Learning”, 24th IEEE/ACM International Symposium on Cluster, Cloud, and Internet Computing (CCGrid), May. 2024.  
C2. **Daegun Yoon**, Sangyoon Oh, “MiCRO: Near-Zero Cost Gradient Sparsification for Scaling and Accelerating Distributed DNN Training”, 30th IEEE International Conference on High Performance Computing, Data, and Analytics (HiPC), Dec. 2023.  
C1. **Daegun Yoon**, Sangyoon Oh, “DEFT: Exploiting Gradient Norm Difference between Model Layers for Scalable Gradient Sparsification”, 52nd International Conference on Parallel Processing (ICPP), Aug. 2023.

---

## PATENTS

- P3. Sangyoon Oh, Byeong-hee Roh, **Daegun Yoon**, Cheol-woong Lee, Kyungwoo Kim, “METHOD OF IMPROVING PERFORMANCE OF SOFTWARE-DEFINED NETWORKING OF ELECTRONIC DEVICE”, Korea Patent, Feb. 2024.  
P2. Sangyoon Oh, **Daegun Yoon**, “APPARATUS AND METHOD FOR ADAPTIVE GRAPH TRAVERSAL BASED ON WORKLOAD ANALYSIS”, Korea Patent, Jun. 2023.  
P1. Minho Park, Sangyoon Oh, **Daegun Yoon**, Jaehyun Ham, “METHOD AND APPARATUS FOR PARTITIONING OF EVENT, COMPUTER-READABLE STORAGE MEDIUM AND COMPUTER PROGRAM”, Korea Patent, Jul. 2022.

---

## SELECTED RESEARCH PROJECTS

- R3. **Electronics and Telecommunications Research Institute**, “Analog AI Computing”. Jan. 2024 - Present  
R2. **Samsung Display**, “Development of High Efficiency HPC Job Scheduling Algorithm”. Jan. 2023 - Dec. 2023  
R1. **Korea Institute of Science and Technology Information**, “Research on Optimizing Memory Utilization and Communication Scheduling of Sharded Data Parallel for Accelerating Large-Scale Distributed Deep Learning”. Mar. 2022 - Oct. 2022

---

## PROFESSIONAL SERVICES

**Reviewer:** The Journal of Supercomputing (2023, 2024)  
**Reviewer:** World Wide Web (2024)  
**Reviewer:** International Journal of Machine Learning and Cybernetics (2024)  
**Reviewer:** ACM Transactions on Multimedia Computing Communications and Applications (2023)

---

## TEACHING EXPERIENCES

**Teaching Assistant:** “Software Engineering”, Department of Software, Ajou University Spring 2021  
**Teaching Assistant:** “Digital Circuits”, Department of Software, Ajou University Fall 2022