

RESEARCH INTERESTS

Storage Systems, Distributed Systems, Operating Systems, Formal Methods

EDUCATION

- **Northeastern University** Boston, MA, United States
Ph.D. in Computer Science Sep 2026 – Present
- **Sookmyung Women's University** Seoul, Republic of Korea
M.S. in Computer Science (GPA: 4.44/4.5) Mar 2022 – Feb 2024
- **Sookmyung Women's University** Seoul, Republic of Korea
B.E. in Software Convergence (GPA: 3.92/4.5) Mar 2017 – Feb 2022

SELECTED PUBLICATIONS

International Journal

- AIR-YARN: Automatic Internal Parallelism Reconfiguration on Heterogeneous Low-Power Hadoop Clusters [doi]
Sooyoung Lim and Dongchul Park
Future Generation Computer Systems, 2026 (*under revision*)
- Improving Hadoop MapReduce performance on heterogeneous single board computer clusters [doi]
Sooyoung Lim and Dongchul Park
Future Generation Computer Systems, 2024
- Efficient Stack Distance Approximation Based on Workload Characteristics [doi]
Sooyoung Lim and Dongchul Park
IEEE Access, 2022

International Conference

- Accelerating I/O Performance for AI Frameworks on DAOS [paper] [poster]
Sooyoung Lim, Taehyun Yoo, Jaegi Son, and Dongmin Kim
ICONI, Okinawa, Japan, 2025
- Toward Heterogeneity-Aware Striping in Lustre [doi] [poster]
Sooyoung Lim, Jaegi Son, and Dongmin Kim
IEEE ICTC, Jeju Island, Republic of Korea, 2025

WORK EXPERIENCE

- **Korea Electronics Technology Institute (KETI)** Seongnam-si, Gyeonggi-do, Republic of Korea
Researcher May 2025 – Jun 2026
 - **I/O Optimization for ML Frameworks on Object Storage Systems**
Offloaded multimodal data preprocessing operations to storage engines in the Distributed Asynchronous Object Storage (DAOS)
 - **I/O Optimization for Distributed File Systems on Heterogeneous Storage Systems**
Designed a resource-aware striping mechanism in Lustre

RESEARCH EXPERIENCE

- **Chung-Ang University** Seoul, Republic of Korea
Research Assistant Jun 2024 – Feb 2025
 - **Auto-Tuning for Resource Scheduling on Heterogeneous Low-Power Clusters**
Redesigned Hadoop YARN by implementing a resource-aware tuning method based on the node-level parallelism
- **Big Data Storage Systems Lab, Sookmyung Women's University** Seoul, Republic of Korea
Research Assistant Jan 2022 – Feb 2024
 - **Big Data Processing on Heterogeneous Low-Power Clusters**
Redesigned Hadoop YARN by implementing two dual-mode scheduling strategies and a MapReduce task placement policy
 - **Data Access Pattern Profiling for Cache Simulation**
Designed a workload-aware stack distance approximation algorithm for efficient cache behavior simulation

TEACHING EXPERIENCE

- **Sookmyung Women's University** Seoul, Republic of Korea
Teaching Assistant
 - Linux System *Fall 2022, Fall 2023*
 - Data Structures *Spring 2023*
 - Introduction to Programming *Spring 2023*
 - Big Data Processing *Fall 2022*

SELECTED PROGRAMMING PROJECTS

- **Chatbot for Clothing Recommendation** *[github]* *Sep 2020 – Mar 2021*
Implemented a CNN-based recommendation model on the customized web-based chatbot service and integrated YOLACT for data preprocessing pipelines
- **Application for Discovering Nearby Discounted Expiring Foods** *[github]* *Nov 2019 – Jan 2020*
Developed an Android application that alerts users to nearby discounted food items nearing expiration and implemented real-time backend updates and location-based filtering functions via RESTful API communication
- **Application for Voting on Member of Parliament** *[github]* *Jun 2018 – Jul 2018*
Built Android frontend interfaces by converting design mockups into XML layouts and custom view components

PATENTS

- Resource-Aware Striping Method and File Storage System in a Heterogeneous Storage Environment
Dongmin Kim, Jaegi Son, and Sooyoung Lim
Korea Patent, 10-2025-0204420, 2025
- Method and Device for Allocating MapReduce Task in Heterogeneous Cluster Environment
Dongchul Park and Sooyoung Lim
Korea Patent, 10-2025-0008411, 2025

HONORS AND AWARDS

- **Best Paper Award**, ICONI *2025*
- **Excellent Alumna Scholarship**, Sookmyung Women's University (*full scholarship*) *2022 – 2023*
- **Research Support Scholarship**, Sookmyung Women's University *2022*
- **2nd prize**, Sookmyung Hackathon powered by AWS, Sookmyung Women's University *2019*
- **Scholarship**, Sookmyung Women's University *2017, 2019, 2020, 2021*

TECHNICAL SKILLS

- **Proficient** C/C++, Python, Java, UNIX Shell, LaTeX, Git, SQL, R
- **Familiar** Rocq, QEMU, Go, Kotlin

LANGUAGE PROFICIENCY

- **TOEFL iBT** Total 104 (Reading 28, Listening 22, Speaking 26, Writing 28)