Sooyoung Lim

CONTACT INFORMATION

Sookmyung Women's University
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RESEARCH INTERESTS

Big data software platforms, parallel & distributed computing, cloud computing, operating systems, storage systems, Compute Express Link (CXL) technologies and applications

STRENGTHS

Large Open-source Programming: Analyzed and improved large open-source platforms
Research Capability: Authored three papers in renowned SCIE journals

EDUCATION

Sookmyung Women's University, Seoul, Republic of Korea

Master of Engineering in Computer Science Mar 2022 – Feb 2024

- Thesis: *Redesigning Hadoop YARN Architecture for Heterogeneous Single Board Computer Clusters*
- Adviser: Prof. Byeong-Mo Chang
- Committee: Prof. Dongchul Park and Prof. Yoonjin Kim
- Total GPA of 4.44/4.5

Bachelor of Engineering in Software Convergence Mar 2017 – Feb 2022

- ExtraCredit Completion in Software Convergence (Major GPA: 4.03/4.5)
- Interdisciplinary Program for Big Data Analysis
- Total GPA of 3.92/4.5

PUBLICATIONS

[1] S. Lim and D. Park, "Automatic Reconfiguring the Node-Level Parallelism of YARN in Heterogeneous Low-Power Clusters," *Journal of Big Data*, 2024. (***under review***) (JCR: top 5.2%)

[2] S. Lim and D. Park, "Improving Hadoop MapReduce performance on heterogeneous single board computer clusters," *Future Generation Computer Systems*, vol. 160, pp. 752-766, Nov., 2024. (JCR: top 9.4%) *[paper]*

[3] S. Lim and D. Park, "Efficient Stack Distance Approximation Based on Workload Characteristics," *IEEE Access*, vol. 10, pp. 59792-59805, Jun., 2022. (JCR: top 34.7%) *[paper]*

RESEARCH EXPERIENCE

Chung-Ang University, Seoul, Republic of Korea
Post-Master's Researcher (Adviser: Prof. Dongchul Park)

- **Automatic Configuration of Big Data Processing Platform** Sep 2023 – Present

  Designed an automatic Hadoop configuration mechanism to effectively utilize the internal parallelism of cluster nodes based on actual computing capability

Sookmyung Women's University, Seoul, Republic of Korea
Research Assistant (Big Data Storage Systems Lab., Adviser: Prof. Dongchul Park)

- **Big Data Processing on Heterogeneous Low-Power Clusters** Jun 2022 – Apr 2024
  (Master's thesis project)

  Designed two (master-driven vs. slave-driven) YARN scheduling policies for more effective processing and Hadoop task distribution mechanisms for consistent performance on resource-frugal clusters

- **Stack Distance Approximation Algorithm** Mar 2022 – Jun 2022

  Designed an efficient stack distance approximation algorithm based on workload characteristics and applied the scheme to a cache behavior simulation

Sookmyung Women's University, Seoul, Republic of Korea
Undergraduate Student

- **Graduation Project** Sep 2020 – Mar 2021
  - *User-based Clothing Recommendation Chatbot Service [code]*
    - Deep Learning: preprocessed crawled data using image segmentation and trained a CNN model
    - Web: implemented the model on the customized webpage for providing a conversational recommender

- **Android Applications**
  - *Location-Based Expiring Discounted Food Introduction Service [code]* Nov 2019 – Jan 2020
    - Integrated APIs to manage the exchange of data between the mobile application and backend servers
  - *Popularity Voting Service for Members of Parliament [code]* Jun 2018 – Jul 2018
    - Translated wireframes into functional interfaces using XML layouts and Android UI components

PATENTS

- D. Park and S. Lim, "Method and Device for Allocating MapReduce Task in Heterogeneous Cluster Environment," Korea Patent, 10-2025-0008411, 2025

HONORS AND AWARDS

Sookmyung Women's University, Seoul, Republic of Korea

- Excellent Alumna Scholarship — Spring 2022 – Fall 2023
- Support The Research Scholarship — Spring 2022
- Career Development Scholarship — Fall 2020
- Sookmyung Special Scholarship for COVID-19 — Spring 2020
- Special Scholarship (Academic Support) — Fall 2019
- **2nd prize**, Sookmyung Hackathon powered by AWS — Nov 2019
- Scholarship — Fall 2019, Spring 2020, Fall 2020, Fall 2021
- Prime Scholarship — Spring 2017

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

EXTRACURRICULAR ACTIVITIES

Leadership Activities

- Data Science Federation Club — Mar 2020 – Jul 2020
  - Led a 12-week team study to teach Python and data science concepts for students from other departments
- Department Representative — Mar 2017 – Dec 2017
  - Contributed to building the foundation of the newly established division by dedicating 32 hours of volunteer work per semester and executed a variety of departmental events such as welcoming party and field trips

Club Activities

- ALGOS: ACM-ICPC Program Competition Preparation Club — Mar 2018 – Feb 2019
  - Participated in study groups for in-depth problem-solving skills and and prepared for 2018 ACM-ICPC (Association for Computing Machinery - International Collegiate Programming Contest) regional preliminaries
- SOPT: Undergraduate IT Venture Startup Club — Mar 2018 – Jul 2018
  - Learned techniques of implementing Android applications based on Kotlin and gained hands-on experience by creating IT services through a 2-week collaboration with other departments (i.e., Plan, Design and Server)

TECHNICAL SKILLS

Programming	C/C++, Python, Java, UNIX Shell, HTML/CSS, SQL, R, LaTeX
IDE	Atom, CLion, PyCharm, IntelliJ, Texifier
Operating Systems	Ubuntu, Mac OS, Android

REFERENCES

Professor Dongchul Park
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Professor Byeong-Mo Chang
Division of Computer Science
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