Sooyoung Lim

CONTACT INFORMATION

Sookmyung Women's University
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RESEARCH INTERESTS

Big data processing software platforms, parallel & distributed computing, non-volatile memory 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 on two research topics

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

- Intensive Major in Software Convergence (Major GPA: 4.03/4.5)
- Interdisciplinary Major in Big Data Analysis
- Total GPA of 3.92/4.5

PUBLICATIONS

[1] <u>S. Lim</u> 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] <u>S. Lim</u> 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] <u>S. Lim</u> 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 Control of Big Data Processing Platform**   Sep 2023 - Present

   Redesigned a MapReduce task distribution mechanism with automatic and immediate detection of computational 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 Apache Hadoop YARN scheduling policies for improving Hadoop performance on resource-frugal SBC Hadoop clusters and an ApplicationMaster and reduce task distribution mechanism

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

   Extended a lightweight, highly approximated stack distance calculation algorithm in real-time based on workload characteristics and applied the scheme to show cache performance in an online environment

Undergraduate

- **Graduation Project**   Sep 2020 - Mar 2021

  - *User-based Clothing Recommendation Chatbot Service*
    - Deep Learning: preprocessed crawled data using image segmentation and trained a CNN model
    - Web: implemented the model on the customized webpage for supporting a conversational recommender

- **Android Applications**
  - *Location-Based Expiring Discounted Food Introduction Service*   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*   Jun 2018 - Jul 2018
    - Translated wireframes into functional interfaces using XML layouts and Android UI components

HONORS AND AWARDS

- **Excellent Alumna Scholarship**, Sookmyung Women's University   2022–2023
- **Research Support Scholarship**, Sookmyung Women's University   2022
- **Career Development Scholarship**, Sookmyung Women's University   2020
- **2nd prize, Sookmyung Hackathon powered by AWS**, Sookmyung Women's University   2019
- **Special Scholarship for Academic Support**, Sookmyung Women's University   2019, 2020
- **Honor Student Scholarship**, Sookmyung Women's University   2019, 2020, 2021
- **Academic Excellence Scholarship for Freshmen**, Sookmyung Women's University   2017

TEACHING EXPERIENCE

Sookmyung Women's University, Seoul, Republic of Korea
Teaching Assistant

- Linux System   Fall 2022, Fall 2023
  - Managed a training lecture once a week for over 120 undergraduate students, answered questions in person and online, marked assignments, and proctored exams
- Data Structures   Spring 2023
  - Participated in the creation and review of assignments based on Python, answered questions via e-mail, marked assignments, and proctored exams
- Introduction to Programming   Spring 2023
  - Managed C programming training lecture once a week for 20 undergraduate students, answered questions in person and online, and marked assignments
- Big Data Processing   Fall 2022
  - Created instructional videos for Apache Hadoop and Spark Wordcount tutorial assignments, addressed questions on the online bulletin board, and marked assignments

EXTRACURRICULAR ACTIVITIES

Leadership Activities

- Data Science Federation Club   Mar 2020 - Jul 2020
  - Led a 12-week team study designed to teach Python programming and data science concepts to students from non-technical backgrounds and designed and reviewed custom assignments
- 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
- Undergraduate IT Venture Startup Club   Mar 2018 - Jul 2018
  - Learned techniques of implementing Android applications using Kotlin and gained hands-on experience in creating services through a 2-week collaboration with other departments

TECHNICAL SKILLS

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

REFERENCES

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