Hejing Li

CONTACT

Ph.D. Student
Max Planck Institute for Software Systems
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RESEARCH INTERESTS

High-performance networked systems, full system simulation, network function virtualization

EDUCATION

Max Planck Institute for Software Systems (MPI-SWS) APR. 2022 ~ Present
Ph.D. Student
Advised by Antoine Kaufmann

Korea Advanced Institute of Science and Technology (KAIST) MAR. 2018 ~ FEB. 2020
M.S., in School of Electrical Engineering
Advised by Dongsu Han

Korea Advanced Institute of Science and Technology (KAIST) SEPT. 2013 ~ FEB. 2018
B.S., in School of Electrical Engineering
Advised by Dongsu Han

RESEARCH EXPERIENCE

Modular Full system Simulation Framework for Network Systems MAR. 2020 ~ Present
Work on **SimBricks**, which combines multiple existing simulators for individual components including processor, NIC, and network into a full end-to-end networked system simulation. I am responsible for simulator validation, constructing the simulation, evaluating and analysing the simulation results of various simulation frameworks.
Advised by Antoine Kaufmann, Keon Jang (MPI-SWS) and Jialin Li (NUS)

Network Applications Acceleration Using SIMD Technology MAR. 2018 ~ FEB. 2020
Implement parallel packet classification module in Open vSwitch and a high-performance bloom filter with new SIMD instructions. The evaluation shows the improvement up to 162% in bloom filter and 48% in Open vSwitch compared to their scalar versions. I lead the project from scratch.
Advised by Dongsu Han (KAIST)

WORK EXPERIENCE

Max Planck Institute for Software Systems (MPI-SWS) MAR. 2020 ~ MAR. 2022
Intern, Research Engineer
Advised by Antoine Kaufmann

PUBLICATIONS

Bin Gao, **Hejing Li**, Jialin Li, and Antoine Kaufmann. 2022. Improving Disaggregated System Evaluation with Modular End-to-End Simulation. The 3rd Workshop On Resource Disaggregation and Serverless Computing (WORDS'22). To appear.

Hejing Li, Jialin Li, and Antoine Kaufmann. 2022. SimBricks: End-to-End Network System Evaluation with Modular Simulation. In Proceedings of the ACM SIGCOMM 2022 Conference (SIGCOMM '22). Association for Computing Machinery, New York, NY, USA, 380–396. https://doi.org/10.1145/3544216.3544253

Hejing Li, Juhyeng Han, and Dongsu Han. 2020. Leveraging SIMD Parallelism for Accelerating Network Applications. In 4th Asia-Pacific Workshop on Networking (APNet '20). Association for Computing Machinery, New York, NY, USA, 23–29. https://doi.org/10.1145/3411029.3411033

TEACHING EXPERIENCE

Operating Systems — WINTER SEMESTER 2021
Saarland University
Instructor: Antoine Kaufmann

PATENTS

"Method for accelerating open virtual switch using parallel computation and open virtual switch using the same", Hejing Li, Juhyeng Han, Dongsu Han, Korean Patent Application 10-2018-0128958(2019)

PROFICIENT SKILLS

Programming Languages: C/C++, Python, UNIX shell scripting
Languages: Chinese (native), Korean (native), English (TOEFL iBT 92)

REFERENCES

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Max Planck Institute for Software Systems (MPI-SWS)

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