Dongkwan Kim

Curriculum Vitae

Contact Information

School of Electrical and Electronic Engineering
Yonsei University
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Seoul, South Korea, 03722

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Education

Yonsei University, Seoul, Republic of Korea
M.S./Ph.D. Student, March 2020 to Present
Advisor: Prof. Hanjun Kim

Yonsei University, Seoul, Republic of Korea
Bachelor of Engineering in Electrical and Electronic Engineering, March 2014 to February 2020

Experience

Research Assistant, March 2020 to Present
Compiler Research Laboratory (Corelab), *Yonsei University*, Seoul, Republic of Korea

- Developing privacy-aware authorization on edge-cloud for Homomorphic Encryption
- Developing sensor fault detection with sensor fusion for Autonomous Driving
- Designing CPU and GPU scheduling based on thermal modeling

Undergraduate Research Assistant, January 2019 to February 2020
Compiler Research Laboratory (Corelab), *Yonsei University*, Seoul, Republic of Korea

- Designing CPU and GPU scheduling based on thermal modeling

Recognition

- The 30th Humantech Paper Awareds, Silver Prize, Samsung Electronics Co., Ltd., Republic of Korea, February 2024
- Minister of Science and ICT Award in ICT Challencge hosted by Ministry of Science and ICT, Republic of Korea, September 2023
- Excellence Award, High Honors, School of Electrical and Electronic Engineering, Yonsei University, June 2019

Activities

International Conference Organizing Assistant

- Student Volunteer, DrCCTProf workshop at The 20th ACM/IEEE International Symposium on Code Generation and Optimization (CGO), April 2022

Domestic Conference Organizing Assistant

- Local Arrangements Assistant, KIISE Computer System Society Winter Workshop, Feburary 2021

International Conference Sub-reviewer

- Sub-reviewer, The 50th International Symposium on Computer Architecture (ISCA), 2023
- Sub-reviewer, ACM International Conference on Embedded Software (EMSOFT), 2022 and 2023
- Sub-reviewer, The 31st ACM SIGPLAN Conference on Compiler Construction (CC), 2022
- Sub-reviewer, IEEE Real-Time and Embedded Technology and Applications Symposium (RTAS), 2021, 2022 and 2023
- Sub-reviewer, ACM/IEEE International Symposium on Code Generation and Optimization (CGO), 2021, 2022 and 2024
- Sub-reviewer, The 38th IEEE International Conference on Computer Design (ICCD), 2020
- Sub-reviewer, The 26th IEEE International Conference on Embedded and Real-Time Computing Systems and Applications (RTCSA), 2020
- Sub-reviewer, ACM SIGPLAN/SIGBED Conference on Languages, Compilers, and Tools for Embedded Systems (LCTES), 2020 and 2023

Teaching

- EEE2020: Datastructures, Yonsei University
  Teaching Assistant, Yonsei University, Spring 2023
  (Teaching weekly lab classes about datastructure assignments)
- EEE3540: Microprocessors, Yonsei University
  Teaching Assistant, Yonsei University, Fall 2022
  (Teaching weekly lab classes about CSAPP assignments)
- EEE1108: Engineering Information Processing, Yonsei University
  Teaching Assistant, Yonsei University, Fall 2018
  (Teaching weekly lab classes about how to write C language code)

Publications

Refereed Conference Publications

[1] Seonyoung Cheon, Yongwoo Lee, Dongkwan Kim, Ju Min Lee, Sunchul Jung, Taekyung Kim, Dongyoon Lee, and Hanjun Kim, "DaCapo: Automatic Bootstrapping Management for Efficient Fully Homomorphic Encryption," to appear in *33nd USENIX Security Symposium (USENIX Security)*, August 2024.

[2] Yongwoo Lee, Seonyoung Cheon, Dongkwan Kim, Dongyoon Lee, and Hanjun Kim, "Performance-aware Scale Analysis with Reserve for Homomorphic Encryption," to appear in *ACM International Conference on Architectural Support for Programming Languages and Operating Systems 2024 (ASPLOS)*, April 2024.

[3] Yongwoo Lee, Seonyoung Cheon, Dongkwan Kim, Dongyoon Lee, and Hanjun Kim, "ELASM: Error-Latency-Aware Scale Management for Fully Homomorphic Encryption," in *32nd USENIX Security Symposium (USENIX Security)*, August 2023.

Refereed Poster Publications

[4] Dongkwan Kim, Yongwoo Lee, Seonyoung Cheon, Heelim Choi, Jaeho Lee, Dongyoon Lee, and Hanjun Kim, "Privacy Authority-Aware Compiler for Homomorphic Encryption on Edge-Cloud," in *32nd USENIX Security Symposium - (Poster) (USENIX Security)*, August 2023.

Patents

[5] Hanjun Kim, Yongwoo Lee, Seonyoung Cheon, and Dongkwan Kim, "System and Method of Homomorphic Encryption Based on Scale Optimization," KR Patent App. 10-2024-0008916, January 2024.

[6] Hanjun Kim, Seonyeong Heo, and Dongkwan Kim, "Multiscale Object Detection Device and Method," KR Patent App. 10-2022-0032150, March 2022.

[EPO Patent App. EP22216491.5, JP Patent App. 2022-211881 and US Patent App. 18/090,869]