Hanjun Kim
Curriculum Vitae

CONTACT INFORMATION

School of Electrical and Electronic Engineering
Yonsei University
Engineering Hall #3 C415
50 Yonsei-Ro Seodaemun-gu
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EDUCATION

Princeton University, Princeton, NJ
Ph.D. in Computer Science, September 2013
   Thesis: "ASAP: Automatic Speculative Acyclic Parallelization for Clusters,"
   Advisor: Prof. David I. August
   April 5, 2009 To September 21, 2013
M.A. in Computer Science, April 2009
   Advisor: Prof. David I. August
   September 17, 2007 To April 4, 2009

Seoul National University, Seoul, Republic of Korea
Bachelor of Science in Electrical Engineering, June 2007
   Thesis: "Design and Implementation of XCP Network Analyzer"
   Advisor: Prof. Wook Hyun Kwon
   March 1, 2000 To August 30, 2007
Bachelor of Business Administration, June 2007
   Thesis: "Case study: iRiver"
   Advisor: Prof. Jungsuk Oh
   March 1, 2000 To August 30, 2007

EXPERIENCE

Professor, September 1, 2024 to Present;
Associate Professor, September 1, 2018 to August 31, 2024
School of Electrical and Electronic Engineering, *Yonsei University*, Republic of Korea

Associate Professor, March 1, 2018 to August 31, 2018;
Assistant Professor, July 1, 2013 to February 28, 2018
Department of Creative IT Engineering (CITE), *POSTECH*, Republic of Korea
Joint-Appointed with the Department of Computer Science and Engineering (CSE)

Research Intern, June 6, 2011 to September 13, 2011
Intel Labs, Santa Clara, CA

Research Intern, June 29, 2009 to August 31, 2009
IBM Tokyo Research Laboratory, Japan

Research Intern, June 15, 2009 to June 26, 2009
Parakinetics, Princeton, NJ

Software Developer, January 13, 2004 to November 26, 2005
Army Computer Center, Headquarters of ROK Army

Programmer, July 1, 2003 to August 31, 2003
Mamurian Design, Seoul, Republic of Korea

Recognition

- Best Teaching Award, Yonsei University, 2024
- Special Prize in recognition of outstanding dedication and great work as supervising students in the 30th Humantech Paper Awards, Samsung Electronics, 2024
- Young Engineering Professor Award, College of Engineering, Yonsei University, 2021
- Young Computer Researcher Award, KIISE/IEEE Computer Society, 2020
- Best Teaching Award, Yonsei University, 2020
- Appointed as a Siebel Scholar based on academic achievement and excellence by the Siebel Scholars Foundation, 2012
- Awarded the Intel Corporation PhD Fellowship for pursuing leading-edge work in fields related to Intel's business and research interests, 2012
- Highest ranked paper in double-blind review process at the 43rd IEEE/ACM International Symposium on Microarchitecture (MICRO), 2010
- "Addressing the Multicore Problem" selected among the top innovations with commercial potential at the 4th Annual Innovation Forum held by the Keller Center for Innovation in Engineering Education, 2009
- Princeton University Graduate Fellowship, 2007-2008
- Grand Prize for embedded mobile messenger on XScale PXA255 at Embedded Software Contest hosted by Ministry of Information and Communication, Republic of Korea, December 2003
- Best Design Award, 2002 Samsung-SNU Digital ASIC Design course with Video game on ALTERA FPGA, July 2002

Activities

International Conference Organizing Committee

- Local Arrangement Chair, International Symposium on Code Generation and Optimization (CGO), 2022
- Local Arrangement Chair, International Symposium on Code Generation and Optimization (CGO), 2021
- Paper Submission Chair, The 42nd Annual IEEE/ACM International Symposium on Microarchitecture (MICRO), 2009

International Conference Technical Program Committees

- International Conference on Embedded Software (EMSOFT), 2024
- International Conference on Supercomputing (ICS), 2024
- International Symposium on Code Generation and Optimization (CGO), 2024
- International Conference on Embedded Software (EMSOFT), 2023
- IEEE Real-Time and Embedded Technology and Applications Symposium (RTAS), 2023
- ACM SIGPLAN/SIGBED International Conference on Languages, Compilers, and Tools for Embedded Systems (LCTES), 2023
- ACM SIGPLAN International Conference on Compiler Construction (CC), 2022
- International Conference on Embedded Software (EMSOFT), 2022
- IEEE Real-Time and Embedded Technology and Applications Symposium (RTAS), 2022
- International Symposium on Code Generation and Optimization (CGO), 2022
- IEEE Real-Time and Embedded Technology and Applications Symposium (RTAS), 2021
- International Symposium on Code Generation and Optimization (CGO), 2021
- International Conference on High Performance Computing in Asia Pacific Region (HPCAsia), 2021
- IEEE International Conference on Embedded and Real-Time Computing Systems and Applications (RTCSA), 2020
- ACM SIGPLAN/SIGBED International Conference on Languages, Compilers, and Tools for Embedded Systems (LCTES), 2020
- IEEE International Conference on Computer Design (ICCD), 2020
- IEEE International Conference on Computer Design (ICCD), 2019
- IEEE International Symposium on Embedded Multicore/Many-core Systems-on-Chip (MCSoC), 2019
- IEEE International Symposium on Workload Characterization (IISWC), 2018
- IEEE International Symposium on Embedded Multicore/Many-core Systems-on-Chip (MCSoC), 2018
- IEEE International Symposium on Embedded Multicore/Many-core Systems-on-Chip (MCSoC), 2017
- IEEE International Symposium on Parallel and Distributed Processing with Applications, 2015

International Conference Session Chair

- Annual ACM SIGPLAN/SIGBED Conference on Languages, Compilers, and Tools for Embedded Systems (LCTES), 2017

International Conference External Review Committees

- International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS), 2020
- International Conference on Computer Architecture (ISCA), 2023

Local Conference Organizing Committees

- Session Chair, The KIISE Computer Systems Winter Conference, 2024
- Session Chair, The KIISE Computer Systems Winter Conference, 2023
- Online Conference Chair, The KIISE Computer Systems Winter Conference, 2021
- Session Chair, The KIISE Computer Systems Winter Conference, 2020
- Member, Committee of Next Generation at The Korean Institute of Information Scientists and Engineers(KIISE), 2020
- Program Committee Member, Software Convergence Symposium (SWCS), 2020
- Program Committee Member, Korea Software Congress (KSC), 2019
- Local Arrangements Chair, The KIISE Computer Systems Winter Conference, 2019
- Local Arrangements Chair, The KIISE Computer Systems Winter Conference, 2018
- Local Arrangements Chair, The KIISE Computer Systems Winter Conference, 2017
- Local Arrangements Chair, The KIISE Computer Systems Winter Conference, 2016
- Program Committee Member, The 1st Linux Kernel Camp, 2015
- Session Chair, KRNet, 2015
- Registration Chair, The KIISE Computer Systems Winter Workshop, 2015

Local Organization

- Chair, Korea ACM SigArch Chapter, 2023-Present
- Board Member, Korea Information Processing Society (KIPS), 2024
- Board Member, Computer System Society in the Korean Institute of Information Scientists and Engineers (KIISE), 2015-Present

Local Journal Editing

- Editor in Chief, KIPS Transactions: Computer and Communication Systems, 2024
- Associate Editor, KIISE Transactions on Computing Practices, 2021-Present

Advisory Committee

- Member of CEO Round-table for Envisioning Advanced TEchnology (CREATE), SK Hynix, 2018-2022

Invited Talks

- "HECATE: Fully Homomorphic Encryption Compiler with Error-Latency-Aware Scale Management" presented at NUS, January 18th, 2024.
- "HECATE: Fully Homomorphic Encryption Compiler with Error-Latency-Aware Scale Management" presented at KAIST, May 22nd, 2023.
- "HECATE: Performance-Aware Scale Optimization for Homomorphic Encryption Compiler" presented at the 6th HomomorphicEncryption.org Standards Meeting, March 23rd, 2023.
- "HECATE: Fully Homomorphic Encryption Compiler with Error-Latency-Aware Scale Management" presented at POSTECH, December 14th, 2022.
- "Compiler and Software Frameworks for Internet-of-Things" presented at Seoul National University, July 21st, 2022.
- "Thread-Aware Area-Efficient High-Level Synthesis Compiler for Embedded Device" presented at The Electronics and Telecommunications Research Institute (ETRI), November 17th, 2021.

- "Compiler Techniques and Distributed Optimization for Machine Learning" presented at Samsung Advanced Institute of Technology, April 28th, 2021.
- "Area-Efficient High-Level Synthesis" presented at KIISE Computer Systems Society Winter Conference, Feburary 2nd, 2021.
- "Compiler Techniques for Machine Learning" presented at KAIST, January 28th, 2021.
- "Compiler Techniques for Homomorphic Encryption" presented at Seoul National University, December 15th, 2020.
- "High-Level Synthesis for Lightwight IoT Devices" presented at Korea University, September 10th, 2019.
- "HW/SW Cooperative Framework for the Internet-of-Things" presented at Microsoft Research Workshop for Intelligent Cloud and Intelligent Edge, June 21st, 2019.
- "Compiler Techniques for Machine Learning" presented at Samsung Electronics, June 4th, 2019.
- "Embedded SW for IoT" presented at IEEE CEDA Seoul Section Winter Workshop, January 27th, 2019.
- "HW/SW Cooperative Framework for the Internet-of-Things" presented at Korea University, October 16th, 2018.
- "Real Time IoT System and Memory" presented at the SK Hynix Top Talent Symposium, October 5th, 2018.
- "Esperanto: Intelligent SW/HW Cooperative Framework for the IoT" presented at the KIISE Computer Systems Society Winter Conference, Korea, January 16th, 2018.
- "Rapid prototyping of IoT applications with Esperanto compiler" presented at the 28th International Symposium on Rapid System Prototyping (RSP), October 2017.
- "Esperanto: A Language Extension for Unified Internet-of-Things Programming" presented at the Fourth International Workshop on Parallelism in Mobile Platforms, Yonsei University and GIST, September-November 2016.
- "Esperanto: A Language Extension for Unified Internet-of-Things Programming" presented at the Fourth International Workshop on Parallelism in Mobile Platforms, June 2016.
- "Scalable Speculative Parallelization on Commodity Clusters" presented at UNIST, November 2015.
- "Automatic Computation Offload for Native Applications" presented at UNIST and SNU, November 2014-January 2015.
- "Smart Compilation for Heterogeneous Computer Systems from Mobile Platforms to Server Cloud " presented at Samsung Electronics, July 2014.
- "ASAP: Automatic Speculative Acyclic Parallelization on Clusters" presented at the KIISE Computer Systems Winter Workshop, Korea, January 2014.
- "ASAP: Automatic Speculative Acyclic Parallelization on Clusters" presented at SungKyunKwan University, Samsung Electronics, and POSTECH, December 2011 - January 2012.
- "Speculative Parallelization Using Software Multi-threaded Transactions" presented at IBM Tokyo Research Laboratory, July 2009.

University Service at Yonsei University

- Engineering College's Research Support Center Committee, 2021
- Chair of the Administrative Committee, EE Department, 2021-2024
- EE Department's Undergraduate School Committee, 2020
- EE Department's Graduate School Committee, 2019-2021

University Service at POSTECH

- University Advancement Council, 2017-2018
- University Committee on General Education for Freshmen, 2016-2017
- CITE Department's Graduate School Committee, 2017-2018
- CITE Department's Undergraduate School Committee, 2015-2017
- CITE Department's Environment Space Committee, 2015-2016
- CITE Department Committee on Undergraduate Curriculum, 2013-2016
- CITE Department Committee on Research Activity, 2013-2016
- CITE Department Committee on Student Recruiting, 2013-2015
- CSE Department Committee on Student Recruiting, 2016-2018
- CSE Department's Undergraduate School Committee, 2014-2018
- CSE Department Committee on Faculty Recruiting, 2015, 2017, 2018

Teaching at Yonsei University

- EEE 2020: Data Structure and Algorithms
  Every Spring in 2019-2024
- EEE 3313: Introductory Digital Labs
  Every Semester in 2019S-2023S
- EEE 3540: Microprocessors
  Every Fall in 2019-2023 except 2021
- EEE 3545: Application Programming
  Fall 2018
- EEE 5505: Advanced Operating Systems
  Falls in 2019 and 2021, Spring 2023
- EEE 6504: Compiler Design and Optimization
  Falls in 2018 and 2020, Springs in 2022 and 2024
- EEE 6680/6681: System Design and Practice
  Every Semester in 2021F-2022F and Fall 2024
- EEE 7980: Management and Revolution of IT Technology
  Fall 2019

Teaching at POSTECH

- CITE 201, 202, 301, 302: Creative IT Design
  Every Semester in 2013F-2018S
- CSED 341: Automata and Formal Languages
  Spring 2015
- CSED 423: Compiler Design
  Every Fall in 2013-2015, Every Spring in 2016-2018
- CITE 700/CSED 700: Parallel Programming
  Spring 2014, Spring 2017
- CITE 700/CSED702: Compiler Optimization for Modern Architectures
  Spring 2016

Students

Current Graduate Students

Shinnung Jeong (year 6), Jaeho Lee (year 5), Dongkwan Kim (year 5), Heelim Choi (year 5), Seonyoung Cheon (year 4), Sungwoo Yun (year 3), Jumin Lee (year 2), Kunmo Jeong (year 1), Chan Lee (year 1), Hoyun Youm (year 1), Hyunho Kwon (year 1), Haeeun Jeong (year 1)

Completed Degrees

Hyunjun Park
Master of Science. Thesis: GPU/FPGA-based Hybrid Platform for Accelerating LLM Inference
First Position: HyperAccel

Seungbin Song
Doctor of Philosophy. Thesis: Fine-Grained Compiler Optimization with Split-Schedule-Merge for Specialized Domains
First Position: Samsung Advanced Institute of Technology

Yongwoo Lee
Doctor of Philosophy. Thesis: Error-Latency-Aware Scale Management Compiler for Fully Homomorphic Encryption
First Position:

Gyeongmin Lee
Doctor of Philosophy. Thesis: Precise Correlation Extraction for IoT Device Fault Detection
First Position: Samsung Advanced Institute of Technology

Bongjun Kim
Doctor of Philosophy. Thesis: Semantic-aware Automatic Program Partitioning and Privacy-preserving Selective Encryption for Fog Computing
First Position: Samsung Advanced Institute of Technology

Seonyeong Heo
Doctor of Philosophy. Thesis: Real-time Object Detection with Adaptive Image Scaling and Network Path Scheduling
First Position: ETH Zurich

Changsu Kim
Doctor of Philosophy. Thesis: Area-Efficient High-Level Synthesis for Parallel Programs
First Position: MangoBoost

Sungjun Cho
Master of Science. Thesis: Regularized graph processing on GPU
First Position: Ph.D. student at POSTECH

Bongjun Hyun
Master of Science. Thesis: Timing Analysis of CNN Inference on GPU
First Position: Ph.D. student at KAIST

Juhyun Kim
Master of Science. Thesis: Context-Aware Memory Dependence Profiling
First Position: TmaxSoft (Military Service)

Hyunjoon Park
Master of Science. Thesis: Third-party Product Abstraction for Internet of Things Oriented Programming
First Position: TmaxSoft (Military Service)

Kyoungju Sim
Master of Science. Thesis: jSTM: JavaScript Software Transactional Memory System
First Position: TmaxSoft

PUBLICATIONS

BOOK CHAPTERS

[1] David I. August, Jialu Huang, Thomas B. Jablin, Hanjun Kim, Thomas R. Mason, Prakash Prabhu, Arun Raman, and Yun Zhang, "Automatic Extraction of Parallelism from Sequential Code," in *Fundamentals of Multicore Software Development* edited by Ali-Reza Adl-Tabatabai, Chapman Hall / CRC Press, December 2011. (ISBN: 978-1439812730)

REFEREED JOURNAL PUBLICATIONS

[2] Dongkwan Kim, Yongwoo Lee, Seonyoung Cheon, Heelim Choi, Jaeho Lee, Hoyun Youm, Dongyoon Lee, and Hanjun Kim, "Privacy Set: Privacy Authority-Aware Compiler for Homomorphic Encryption on Edge-Cloud System," in *IEEE Internet of Things Journal*, August 2024.
IF=8.2, Q1 (JCR 2023)

[3] Gyeongmin Lee, Bongjun Kim, Seungbin Song, Seonyeong Heo, and Hanjun Kim, "ComFlex: Composable and Flexible Resource Management for the IoT," in *IEEE Internet of Things Journal*, November 2021.
IF=9.936, Q1 (JCR 2019)

[4] Bongjun Kim, Seonyeong Heo, Jaeho Lee, Shinnung Jeong, Yongwoo Lee, and Hanjun Kim, "Compiler-assisted Semantic-aware Encryption for Efficient and Secure Serverless Computing," in *IEEE Internet of Things Journal*, April 2021.
IF=9.936, Q1 (JCR 2019)

[5] Bongjun Kim, Seonyeong Heo, Gyeongmin Lee, Soyeon Park, Hanjun Kim, and Jong Kim, "Heterogeneous Distributed Shared Memory for Lightweight Internet-of-Things Devices," in *IEEE Micro*, November 2016.
IF=1.933, Q2 (JCR 2016)

[6] Junwon Jang, Soohee Han, Hanjun Kim, Choon Ki Ahn, and Wook Hyun Kwon, "Rapid control prototyping for robot soccer," in *Robotica, 27 : 1091-1102 Cambridge University Press* , 2009.

REFEREED CONFERENCE PUBLICATIONS

[7] Shinnung Jeong, Sungjun Cho, Yongwoo Lee, Hyunjun Park, Seonyeong Heo, Gwangsun Kim, Youngsok Kim, and Hanjun Kim, "CR2: Community-aware Compressed Regular Representation for Graph Processing on a GPU," in *Proceedings of the 53rd International Conference on Parallel Processing (ICPP)*, August 2024.

[8] Seungbin Song, Ju Min Lee, Haeeun Jeong, Hyunho Kwon, Shinnung Jeong, Jaeho Lee, and Hanjun Kim, "TeMCO: Tensor Memory Compiler Optimization across Tensor Decompositions in Deep Learning Inference," in *Proceedings of the 53rd International Conference on Parallel Processing (ICPP)*, August 2024.

[9] 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," in *33rd USENIX Security Symposium (USENIX Security)*, August 2024.

[10] Junguk Hong, Si Ung Noh, Chaemin Lim, Seongyeon Park, Jeehyun Kim, Hanjun Kim, Youngsok Kim, and Jinho Lee, "PID-Comm: A Fast and Flexible Collective Communication Framework for Commodity Processing-in-DIMMs," in *The 51st Annual International Symposium on Computer Architecture (ISCA)*, July 2024.

[11] Jinwoo Choi, Yeonan Ha, Hanna Cha, Seil Lee, Sungchul Lee, Jounghoo Lee, Shin-haeng Kang, Bongjun Kim, Hanwoong Jung, Hanjun Kim, and Youngsok Kim, "MPC-Wrapper: Fully Harnessing the Potential of Samsung Aquabolt-XL HBM2-PIM on FPGAs," in *The 32nd IEEE International Symposium on Field-Programmable Custom Computing Machines (FCCM)*, May 2024.

[12] Yongwoo Lee, Seonyoung Cheon, Dongkwan Kim, Dongyoon Lee, and Hanjun Kim, "Performance-aware Scale Analysis with Reserve for Homomorphic Encryption," in *Proceedings of the 29th ACM International Conference on Architectural Support for Programming Languages and Operating Systems 2024 (ASPLOS)*, April 2024.

[13] Donghyeon Kim, Taehoon Kim, Inyong Hwang, Taehyeong Park, Hanjun Kim, Youngsok Kim, and Yongjun Park, "Virtual PIM: Resource-aware Dynamic DPU Allocation and Workload Scheduling Framework for Multi-DPU PIM Architecture," in *Proceedings of the 32nd International Conference on Parallel Architectures and Compilation Techniques (PACT)*, October 2023.

[14] 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.

[15] Jaeho Lee, Shinnung Jeong, Seungbin Song, Kunwoo Kim, Heelim Choi, Youngsok Kim, and Hanjun Kim, "Occamy: Memory-efficient GPU Compiler for DNN Inference," in *Proceedings of the 60th Annual Design Automation Conference 2023 (DAC)*, July 2023.

[16] Chaemin Lim, Suhyun Lee, Jinwoo Choi, Jounghoo Lee, Seongyeon Park, Hanjun Kim, Jinho Lee, and Youngsok Kim , "Design and Analysis of a Processing-in-DIMM Join Algorithm: A Case Study with UPMEM DIMMs," in *Proceedings of the 2023 ACM SIGMOD International Conference on Management of Data (SIGMOD)*, June 2023.

[17] Shinnung Jeong, Yongwoo Lee, Jaeho Lee, Heelim Choi, Seungbin Song, Jinho Lee, Youngsok Kim, and Hanjun Kim, "Decoupling Schedule, Topology Layout, and Algorithm to Easily Enlarge the Tuning Space of GPU Graph Processing," in *Proceedings of the 31st International Conference on Parallel Architectures and Compilation Techniques (PACT)*, October 2022.

[18] Seonyeong Heo, Shinnung Jeong, and Hanjun Kim, "RTScale: Sensitivity-Aware Adaptive Image Scaling for Real-Time Object Detection," in *34th Euromicro Conference on Real-Time Systems (ECRTS)*, July 2022.

[19] Yongwoo Lee, Seonyeong Heo, Seonyoung Cheon, Shinnung Jeong, Changsu Kim, Eunkyung Kim, Dongyoon Lee, and Hanjun Kim, "HECATE: Performance-Aware Scale Optimization for Homomorphic Encryption Compiler," in *Proceedings of the 2022 International Symposium on Code Generation and Optimization (CGO)*, April 2022.

[20] Gyeongmin Lee, Bongjun Kim, Seungbin Song, Changsu Kim, Jong Kim, and Hanjun Kim, "Precise Correlation Extraction for IoT Fault Detection with Concurrent Activities," in *Proceedings of the International Conference on Embedded Software (EMSOFT)*, October 2021.

[21] Changsu Kim, Shinnung Jeong, Sungjun Cho, Yongwoo Lee, William Song, Youngsok Kim, and Hanjun Kim, "Thread-Aware Area-Efficient High-Level Synthesis Compiler for Embedded Devices," in *Proceedings of the 2021 International Symposium on Code Generation and Optimization (CGO)*, March 2021.

[22] Seungbin Song, Heelim Choi, and Hanjun Kim, "Fine-Grained Pipeline Parallelization for Network Function Programs," in *Proceedings of the 2021 International Symposium on Code Generation and Optimization (CGO)*, March 2021.

[23] Seonyeong Heo, Sungjun Cho, Youngsok Kim, and Hanjun Kim, "Real-Time Object Detection System with Multi-Path Neural Networks," in *Proceedings of the IEEE Real-Time And Embedded Technology And Applications Symposium (RTAS)*, April 2020.

[24] Seonyeong Heo, Seungbin Song, Bongjun Kim, and Hanjun Kim, "Sharing-aware Data Acquisition Scheduling for Multiple Rules in the IoT," in *Proceedings of the IEEE Real-Time And Embedded Technology And Applications Symposium (RTAS)*, April 2020.

[25] Bongjun Kim, Seonyeong Heo, Gyeongmin Lee, Seungbin Song, Jong Kim, and Hanjun Kim, "Spinal Code: Automatic Code Extraction for Near-User Computation in Fogs," in *Proceedings of the 28th International Conference on Compiler Construction (CC)*, February 2019.

[26] Dongju Chae, Joonsung Kim, Gwangmu Lee, Hanjun Kim, Kyung-Ah Chang, Hyogun Lee, and Jangwoo Kim, "DynaMix: Dynamic Mobile Device Integration for Efficient Cross-device Resource Sharing," in *USENIX Annual Technical Conference (ATC)*, July 2018.

[27] Jiwon Choi, Hayoung Jeoung, Jihun Kim, Youngjoo Ko, Wonup Jung, Hanjun Kim, and Jong Kim, "Detecting and Identifying Faulty IoT Devices in Smart Home with Context Extraction," in *Proceedings of the 48th IEEE/IFIP International Conference on Dependable Systems and Networks (DSN)*, June 2018.

[28] Changsu Kim, Juhyun Kim, Juwon Kang, Jae W. Lee, and Hanjun Kim, "Context-Aware Memory Profiling for Speculative Parallelism," in *Proceedings of the 24th IEEE International Conference on High Performance Computing, Data, and Analytics (HiPC)*, December 2017.

[29] Seonyeong Heo, Seungbin Song, Jong Kim, and Hanjun Kim, "RT-IFTTT: Real-Time IoT Framework with Trigger Condition-aware Flexible Polling Intervals ," in *2017 IEEE Real-Time Systems Symposium (RTSS)*, December 2017.

[30] Youngsok Kim, Jae-Eon Jo, Hanhwi Jang, Minsoo Rhu, Hanjun Kim, and Jangwoo Kim, "GPUpd: A Fast and Scalable Multi-GPU Architecture Using Cooperative Projection and Distribution," in *Proceedings of the 50th Annual IEEE/ACM International Symposium on Microarchitecture (MICRO)*, October 2017.

[31] Gyeongmin Lee, Seonyeong Heo, Bongjun Kim, Jong Kim, and Hanjun Kim, "Rapid prototyping of IoT applications with Esperanto compiler," in *Proceedings of the 28th International Symposium on Rapid System Prototyping (RSP)*, October 2017. Invited.

[32] Gyeongmin Lee, Seonyeong Heo, Bongjun Kim, Jong Kim, and Hanjun Kim, "Integrated IoT Programming with Selective Abstraction," in *Proceedings of the 18th ACM SIGPLAN/SIGBAD Conference on Languages, Compilers, Tools, and Theory for Embedded Systems (LCTES)*, June 2017.

[33] Sanghak Lee, Jiwon Choi, Jihun Kim, Beumjin Cho, Sangho Lee, Hanjun Kim, and Jong Kim, "FACT: Functionality-centric Access Control System for IoT Programming Frameworks," in *Proceedings of the 22nd ACM Symposium on Access Control Models and Technologies (SACMAT)*, June 2017.

[34] Gwangmu Lee, Hyunjoon Park, Seonyeong Heo, Kyung-Ah Chang, Hyogun Lee, and Hanjun Kim, "Architecture-aware Automatic Computation Offload for Native Applications," in *Proceedings of the 48th IEEE/ACM International Symposium on Microarchitecture (MICRO)*, December 2015.

[35] Taewook Oh, Hanjun Kim, Nick P. Johnson, Jae W. Lee, and David I. August, "Practical Automatic Loop Specialization," in *Proceedings of the Eighteenth International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS)*, March 2013.

[36] Nick P. Johnson, Hanjun Kim, Prakash Prabhu, Ayal Zaks, and David I. August, "Speculative Separation for Privatization and Reductions," in *Proceedings of the 33rd ACM SIGPLAN Conference on Programming Language Design and Implementation (PLDI)*, June 2012.

[37] Hanjun Kim, Nick P. Johnson, Jae W. Lee, Scott A. Mahlke, and David I. August, "Automatic Speculative DOALL for Clusters," in *Proceedings of the 2012 International Symposium on Code Generation and Optimization (CGO)*, March 2012.

[38] Prakash Prabhu, Thomas B. Jablin, Arun Raman, Yun Zhang, Jialu Huang, Hanjun Kim, Nick P. Johnson, Feng Liu, Soumyadeep Ghosh, Stephen Beard, Taewook Oh, Matthew Zoufaly, David Walker, and David I. August, "A Survey of the Practice of Computational Science," in *Proceedings of the 24th ACM/IEEE Conference on High Performance Computing, Networking, Storage and Analysis (SC)*, November 2011.

[39] Arun Raman, Hanjun Kim, Taewook Oh, Jae W. Lee, and David I. August, "Parallelism Orchestration using DoPE: the Degree of Parallelism Executive," in *Proceedings of the 32nd ACM SIGPLAN Conference on Programming Language Design and Implementation (PLDI)*, June 2011.

[40] Hanjun Kim, Arun Raman, Feng Liu, Jae W. Lee, and David I. August, "Scalable Speculative Parallelization on Commodity Clusters," in *Proceedings of the 43rd IEEE/ACM International Symposium on Microarchitecture (MICRO)*, December 2010.
Highest ranked paper in double-blind review process.

[41] Arun Raman, Hanjun Kim, Thomas R. Mason, Thomas B. Jablin, and David I. August, "Speculative Parallelization Using Software Multi-threaded Transactions," in *Proceedings of the Fifteenth International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS)*, March 2010.

REFEREED WORKSHOP PUBLICATIONS

[42] Thomas B. Jablin, Yun Zhang, James A. Jablin, Jialu Huang, Hanjun Kim, and David I. August, "Liberty Queues for EPIC Architectures," in *Proceedings of the Eighth Workshop on Explicitly Parallel Instruction Computer Architectures and Compiler Technology (EPIC)*, April 2010.

REFEREED POSTER PUBLICATIONS

[43] 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.

[44] Changsu Kim, Yongwoo Lee, Shinnung Jeong, and Hanjun Kim, "Logic Deduplication with Decentralized Pointer Analysis in HLS for Post-Quantum Cryptography Algorithms," in *Proceedings of the 57th Annual Design Automation Conference 2020 - (Poster) (DAC)*, July 2020.

[45] Changsu Kim, Yongwoo Lee, Shinnung Jeong, Wen Wang, Jakub Szefer, and Hanjun Kim, "Pipeline-aware Logic Deduplication in High-Level Synthesis for Post-Quantum Cryptography Algorithms," in *Proceedings of the 2020 ACM/SIGDA International Symposium on Field-Programmable Gate Arrays (FPGA)*, February 2020.

[46] Xianglan Piao, Channoh Kim, Younghwan Oh, Huiying Li, Jincheon Kim, Hanjun Kim, and Jae W Lee, "JAWS: A JavaScript Framework for Adaptive CPU-GPU Work Sharing," in *Proceedings of the 20th ACM SIGPLAN Symposium on Principles and Practice of Parallel Programming - Poster (PPoPP Poster)*, February 2015.

[47] Xianglan Piao, Channoh Kim, Younghwan Oh, Hanjun Kim, and Jae W Lee, " Efficient CPU-GPU Work Sharing for Data-parallel JavaScript Workloads ," in *Proceedings of the Companion Publication of the 23rd International Conference on World Wide Web Companion (WWW Companion)*, April 2014.

OTHER PUBLICATIONS

[48] Hanjun Kim, "ASAP: Automatic Speculative Acyclic Parallelization for Clusters," Ph.D. Dissertation, Princeton University, September 2013.

PATENTS

[49] Hanjun Kim, Bongjun Kim, Jaeho Lee, Seonyeong Heo, Shinnung Jeong, and Yongwoo Lee, "IoT Service Providing Method Based on Adaptive Encryption and IoT Apparatus," KR Patent Number 10-2508448-0000, March 2024.

[50] 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.

[51] Hanjun Kim, Seungbin Song, Bongjun Kim, and Seonyeong Heo, "Scheduling Apparatus and Method based on Data Sharing between Multiple Rules in IoT Environment," KR Patent Number 10-2382328-0000, March 2022.

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