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RESEARCH INTEREST

OS-level Energy/Temperature Management

- Energy Management Techniques for Mobile Processors [IEEE TPDS] [IEEE TC 2017] [ICCE]
- Temperature Management Techniques for Mobile Processors [DATE] [IEEE TC 2018, 2015]
- Network-aware Energy Management Techniques [ISLPED] [IEEE TC 2018]
- Battery-aware Energy Management Techniques [IEEE COMPUTER]
- Power Modeling Techniques for Mobile Processors [ETRIJ]
- Performance Optimization of Mobile Processors [ICCSEE]

RESEARCH EXPERIENCE

Korea University, Korea

9/2018 ~

Research Professor

- Leading a Project for Developing Power/Thermal Management Techniques for Datacenters.

3/2014 ~ 8/2018

Research Assistant

- Led 5 Projects for Developing Power/Thermal Management Techniques for Mobile Processors.
- Summarized Recent OS-level Energy Management Techniques for Mobile Processing Units.
- Designed an Adaptive Offloading Technique for Energy-efficient Mobile Devices.
- Designed a Linux Task Scheduler for Heterogeneous Mobile Multicore Processors.
- Designed Dynamic Thermal Management Techniques for Heterogeneous Mobile Multicore Processors.
- Constructed a Power Model for Recent Mobile GPUs.

5/2012 ~ 2/2014

Undergraduate Research Intern

- Participated in Projects for Developing Power/Thermal Management Techniques for Mobile Processors.
- Designed a Linux Task Scheduler and CPU Frequency Scaling Governor for Per-Core DVFS Enabled Multi-core Processors.
- Designed an ARM-compatible Microprocessor (Verilog HDL)

PUBLICATION

International Journal Papers

1. **Young Geun Kim**, Y. S. Lee, and Sung Woo Chung
“Signal Strength-aware Adaptive Offloading with Local Image Preprocessing for Energy Efficient Mobile Devices,” **IEEE Transactions on Computers**, major revision. **(IF: 3.052 – top 15.4% among the Hardware & Architecture journals)**
2. **Young Geun Kim**, M. Kim, J. Kong, and Sung Woo Chung
“An Adaptive Thermal Management Framework for Heterogeneous Multi-core Processors,” **IEEE Transactions on Computers**, major revision. **(IF: 3.052 – top 15.4% among the Hardware & Architecture journals)**
3. **Young Geun Kim**, J. Kong, and Sung Woo Chung,
“A Survey on Recent OS-level Energy Management Techniques for Mobile Processing Units,” **IEEE Transactions on Parallel and Distributed Systems**, vol. 29, no. 10, pp. 2388-2401, 2018. **(IF:3.971 – top 7.8% among the Theory & Methods journals)**
4. **Young Geun Kim**, M. Kim, and Sung Woo Chung,
“Enhancing Energy Efficiency of Multimedia Applications in Heterogeneous Mobile Multi-core Processors,” **IEEE Transactions on Computers**, vol. 66, no. 11, pp. 1878-1889, 2017. **(IF:3.052 – top 15.4% among the Hardware & Architecture journals, monthly featured paper)**
5. **Young Geun Kim**, M. Kim, J. M. Kim, M. Sung, and Sung Woo Chung,
“A Novel GPU Power Model for Accurate Smartphone Power Breakdown,” **ETRI Journal**, vol. 37, no. 1, pp. 157-164, 2015. **(IF:0.739)**

6. Jae Min Kim, **Young Geun Kim**, and Sung Woo Chung,
“Stabilizing CPU Frequency and Voltage for Temperature-aware DVFS in Mobile Devices,”
IEEE Transactions on Computers, vol. 64, no. 1, pp. 286-292, 2015. ***(IF:3.052 – top 15.4% among the Hardware & Architecture journals)***
7. Minyong Kim, **Young Geun Kim**, C. H. Kim, and Sung Woo Chung,
“Measuring Variance between Smartphone Energy Consumption and Battery Life,”
IEEE Computer Magazine, vol. 47, no. 7, pp. 59-65, 2014. ***(IF:1.940)***

International Conference Papers

1. **Young Geun Kim**, J. I. Kim, S. H. Choi, S. Y. Kim, and Sung Woo Chung,
“Temperature-aware Adaptive VM Allocation in Heterogeneous Data Centers,”
Design Automation Conference (DAC), *under review. (DAC is recognized as a journal of SCI IF 3 by Korean Institute of Information Scientists and Engineers)*
2. **Young Geun Kim** and Sung Woo Chung,
“Signal Strength-aware Adaptive Offloading for Energy Efficient Mobile Devices,”
IEEE/ACM Int’l Symposium on Low Power Electronics and Design (ISLPED), July 2017.
(regular paper acceptance rate: 26.0%, ISLPED is recognized as a journal of SCI IF 1 by Korean Institute of Information Scientists and Engineers)
3. **Young Geun Kim**, M. Kim, J. M. Kim, and Sung Woo Chung,
“M-DTM: Migration-based Dynamic Thermal Management for Heterogeneous Mobile Multi-core Processors,”
Design, Automation, and Test in Europe Conference (DATE), March 2015.
(regular paper acceptance rate: 22.5%, DATE is recognized as a journal of SCI IF 2 by Korean Institute of Information Scientists and Engineers)
4. Sang Jun Nam, **Young Geun Kim**, and Sung Woo Chung,
“An Energy-efficient Task Scheduler for Mobile Web Browsing,”
IEEE Int’l Conference on Consumer Electronics (ICCE), January 2017.
5. Jae Min Kim, **Young Geun Kim**, and Sung Woo Chung,
“Loop Restructuring for Performance Enhancement in ARM-based Microprocessors,”
Int’l Conference on Computer Science and Electronics Engineering (ICCSEE), November 2013.
(best paper award)

Domestic Journal Papers

1. Sung Woo Chung and **Young Geun Kim**
“Establishment of Smart System for Efficiency Improvement of Disaster Relief Industry: Focused on Wearable Equipment Technology that can be Used for a Long Time,” **The Journal of Industrial Studies**, vol. 42, no. 1, pp. 15-34, 2018.

Domestic Conference Papers

1. Sung Woo Chung, **Young Geun Kim**, S. Y. Kim, S. H. Choi, and Dongwon Min,
“A Study on System Software-level CPU Thermal Prediction considering Various Environment,”
The Korean Society of Industry Convergence, July 2018.
2. Deok Hoon Kang, **Young Geun Kim**, and Sung Woo Chung,
“Dynamic Thermal Management considering Performance on Heterogeneous Mobile Multi-core Processors – A Case Study,” **Korea Software Conference**, December 2017. *(best paper award)*

PATENTS

Domestic Patents

1. **Young Geun Kim** and Sung Woo Chung
“Method for Task Scheduling in Mobile Device,”
Korea Registration Number: 10-1848164, April 2018.

2. **Young Geun Kim**, S. J. Nam, and Sung Woo Chung
“Task Scheduling Method for Energy-efficient Mobile Web Browsing,”
Korea Registration Number: 10-1783148, September 2017.
3. **Young Geun Kim**, Y. S. Lee, and Sung Woo Chung
“Method for Predicting CPU Temperature based on Machine Learning,”
Korea Application Number: 10-2018-0008787, January 2018.
4. **Young Geun Kim** and Sung Woo Chung
“Method for Thermal Management in Mobile Device,”
Korea Application Number: 10-2017-0096896, July 2017.
5. **Young Geun Kim**, J. J. Yoo, and Sung Woo Chung
“Adaptive Offloading Method considering Network Signal Strength,”
Korea Application Number: 10-2016-0129953, October 2016.
6. **Young Geun Kim**, J. J. Yoo, M. Kim, and Sung Woo Chung
“Method for Scaling Input/Output Bus Frequency in Electronic Device,”
Korea Application Number: 10-2015-01050279, October 2015.
7. **Young Geun Kim**, J. M. Kim, and Sung Woo Chung
“Method for Thermal Management in Electronic Device and Electronic Device,”
Korea Application Number: 10-2015-0082465, June 2015.

EXPERTISE

Programming Language	C/C++, Java, Assembly (ARM, MIPS, x86), Python, Android, Verilog HDL
Tools for FPGA	Xilinx ISE, Altera Quartus
Etc.	Design & Implementation of CPU Frequency Scaling Governor Design & Implementation of Linux Task Scheduler Design & Implementation of Thermal Management Unit Analysis on Power/thermal Management Techniques

HONORS & AWARDS

Research Grant	Research Excellence Award, 2017 Dept. of Computer Science and Engineering, Korea University
Best Paper Award	<i>"Dynamic Thermal Management considering Performance on Heterogeneous Mobile Multi-core Processors – A Case Study"</i> 2017 Korea Software Congress
Monthly Featured Paper	<i>"Enhancing Energy Efficiency of Multimedia Applications in Heterogeneous Mobile Multi-core Processors"</i> 2017 IEEE Transactions on Computer
Research Grant	<i>"Smartphone Power Management: In Collaboration with Application Processor and Communication Processor"</i> 2015 Qualcomm Innovation Research Grant
Best Paper Award	<i>"Loop Restructuring for Performance Enhancement in ARM-based Microprocessors"</i> 2013 International Conference on Computer Science and Electronics Engineering

PROFESSIONAL EXPERIENCE

Reviewer	IEEE/ACM/EDAC Design Automation Conference (DAC) 2015-2018 IEEE/ACM International Symposium on Low Power Electronics and Design (ISLPED) 2016-2018 IEEE Transactions on Computers (TC) IEEE Transactions on Very Large Scale Integration Systems (TVLSI)
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TEACHING EXPERIENCE

Lecturer	Computer Architecture Dept. of Computer Science and Engineering, Korea University	2018 Fall
Lecturer	Logic Design (<i>selected as an outstanding course</i>) Dept. of Computer Science and Engineering, Korea University	2017 Spring

EDUCATION

Korea University, Seoul, Korea

3/2014 ~ 8/2018 **Ph. D. in Computer Science (The Integrated Master & Ph. D. Course)**

- Advisor: Prof. Sung Woo Chung

3/2007 ~ 2/2014 **B. S. in Computer & Communication Engineering**

- Classes: Computer Architecture, Operating Systems, Computer Systems, System Software Design and Experiment, Logic Design and Experiment, Circuit Theory, Wireless Communication, Multimedia Programming, Algorithm, etc.

REFERENCE

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