

Curriculum Vitae

Heechul Yun

Associate Professor
Electrical Engineering and Computer Science
University of Kansas
Lawrence, Kansas, 66045, USA
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I. EDUCATION

Ph.D., Computer Science, University of Illinois at Urbana-Champaign, 2013 (Advisor: Lui Sha)
 M.S., Computer Science, KAIST, Korea, 2001 (Advisor: Joonwon Lee)
 B.S., Computer Science, KAIST, Korea, 1999

II. EMPLOYMENT HISTORY

Associate Professor, EECS, University of Kansas, Lawrence, KS, August 2019 – Current
 Assistant Professor, EECS, University of Kansas, Lawrence, KS, August 2013 – July 2019
 System Software Intern, NVIDIA, Santa Clara, CA, May 2011 – August 2011
 Visiting Scholar/Graduate Research Assistant, UIUC, Champaign, IL, February 2009 – July 2013
 Senior Software Engineer, Samsung Electronics, Suwon, Korea, January 2004 – January 2009
 Research Engineer, ETRI, Daejeon, Korea, March 2001 - December 2003

III. HONORS AND AWARDS

Miller Scholar Award by School of Engineering of University of Kansas, 2019
 Outstanding Paper Award, IEEE RTAS, 2019
 Best Paper Award & Outstanding Paper Award, IEEE RTAS, 2016
 Editor's Pick of the Year & Feature Article of the Month, IEEE Transactions on Computers, 2016
 Nomination for Best Student Paper, IEEE RTCSA, 2016
 Nomination for Best Paper, ECRTS, 2010

IV. RESEARCH RECORD

A. Research Publications and Other Creative Works

Total citations: 1426, h-index: 19, i10-index: 27 ([Google Scholar](#), as of February 23, 2020.)

Publications at top tier conferences and journals: ★

Indications of impact (>20 citations, awards): **red color**.

My students and myself: **bold face**.

Code: [J] Journal; [C] Conference; [W] Workshop/WIP; [P] Preprint/Report

Major Publications (Journals, Conferences)

- [C] **Farzad Farshchi**, Qijing Huang, and **Heechul Yun**. “BRU: Bandwidth Regulation Unit for Real-Time Multicore Processors.” *IEEE Intl. Conference on Real-Time and Embedded Technology and Applications Symposium (RTAS)*, April 2020 (to appear) ★
- [C] Renato Mancuso, **Heechul Yun**, Isabelle Puaut. “Impact of DM-LRU on WCET: a Static Analysis Approach.” *Euromicro Conference on Real-Time Systems (ECRTS)*, July 2019 ★
- [C] **Jacob Michael Fustos**, **Farzad Farshchi**, and **Heechul Yun**. “SpectreGuard: An Efficient Data-centric Defense Mechanism against Spectre Attacks.” *ACM/IEEE Design Automation Conference (DAC)*, June 2019 ★
- [C] **Waqar Ali** and **Heechul Yun**. “RT-Gang: Real-Time Gang Scheduling Framework for Safety-Critical Systems.” *IEEE Intl. Conference on Real-Time and Embedded Technology and Applications Symposium (RTAS)*, April 2019 ★

5. [C] **Michael Garrett Bechtel** and **Heechul Yun**. "Denial-of-Service Attacks on Shared Cache in Multicore: Analysis and Prevention." *IEEE International Conference on Real-Time and Embedded Technology and Application Symposium (RTAS)*. April 2019 ★
Outstanding Paper Award
6. [C] **Michael Garrett Bechtel**, Elise McEllhiney, Minje Kim, and **Heechul Yun**. "DeepPicar: A Low-cost Deep Neural Network-based Autonomous Car." *IEEE International Conference on Embedded and Real-Time Computing Systems and Applications (RTCSA)*. pp:1-11. August 2018
Citations: 25
7. [C] **Waqar Ali** and **Heechul Yun**. "Protecting Real-Time GPU Applications on Integrated CPU-GPU SoC Platforms." *Euromicro Conference on Real-Time Systems (ECRTS)*. pp:1-22. July 2018. ★
8. [C] **Farzad Farshchi**, **Prathap Kumar Valsan**, Renato Mancuso, and **Heechul Yun**. "Deterministic memory abstraction and supporting multicore system architecture." In *Euromicro Conference on Real-Time Systems (ECRTS)*. pp:1-24. July 2018. ★
9. [J] **Prathap Kumar Valsan**, **Heechul Yun**, and **Farzad Farshchi**. "Addressing Isolation Challenges of Non-blocking Caches for Multicore Real-Time Systems." *Real-Time Systems* (Springer) pp: 673–708. <https://doi.org/10.1007/s11241-017-9280-9>. ISSN: 0922-6443. September 2017 ★
10. [J] **Heechul Yun**, **Waqar Ali**, **Santosh Gondi**, and **Siddhartha Biswas**. "BWLOCK: A Dynamic Memory Access Control Framework for Soft Real-Time Applications on Multicore Platforms." *IEEE Transactions on Computers*. pp: 1247 - 1252. July 2017 ★
11. [J] Lui Sha, Marco Caccamo, Renato Mancuso, Jung-Eun Kim, Man-Ki Yoon, Rodolfo Pellizzoni, **Heechul Yun**, Russell Kegley, Dennis Perlman, Greg Arundale, and Richard Bradford. "Real-Time Computing on Multicore Processors." *IEEE Computer*. pp: 69-77. ISSN: 0018-9162. September 2016. ★
Citations: 20
12. [C] **Prasanth Vivekanandan**, Gonzalo Garcia, **Heechul Yun**, and Shawn Keshmiri. "A Simplex Architecture for Intelligent and Safe Unmanned Aerial Vehicles." *IEEE International Conference on Embedded and Real-Time Computing Systems and Applications (RTCSA)*. pp: 1-7. August 2016.
Nominated for Best Student Paper.
13. [C] **Prathap Kumar Valsan**, **Heechul Yun**, and **Farzad Farshchi**. "Taming Non-blocking Caches to Improve Isolation in Multicore Real-Time Systems." *IEEE International Conference on Real-Time and Embedded Technology and Application Symposium (RTAS)*. pp: 1-12. April 2016 ★
Best Paper Award and Outstanding Paper Award
Citations: 66
14. [C] Rodolfo Pellizzoni, and **Heechul Yun**. "Memory Servers for Multicore Systems." In *IEEE International Conference on Real-Time and Embedded Technology and Application Symposium (RTAS)*. pp: 1-12. April 2016. ★

15. [J] **Heechul Yun**, Gang Yao, Rodolfo Pellizzoni, Marco Caccamo, and Lui Sha. "Memory Bandwidth Management for Efficient Performance Isolation in Multicore Platforms." *IEEE Transactions on Computers*, 65, no. 2. pp: 562 - 576. February 2016 ★
Editors Pick of the Year 2016 & Feature Article of the Month.
Citations: 36
16. [J] Gang Yao, Rodolfo Pellizzoni, Stanley Bak, **Heechul Yun**, and Marco Caccamo. "Global Real-Time Memory-Centric Scheduling for Multicore Systems." *IEEE Transactions on Computers*. pp: 2739 - 2751. 2015 ★
Citations: 29
17. [C] **Prathap Kumar Valsan and Heechul Yun**. "MEDUSA: A Predictable and High-Performance DRAM Controller for Multicore based Embedded Systems." *IEEE Intl. Conference on Cyber-Physical Systems, Networks, and Applications (CPSNA)*. pp: 86-93. August 2015.
Citations: 21
18. [C] Renato Mancuso, Rodolfo Pellizzoni, Marco Caccamo, Lui Sha, and **Heechul Yun**. "WCET(m) Estimation in Multi-Core Systems using Single Core Equivalence." *Euromicro Conference on Real-Time Systems (ECRTS)*. pp: 174 – 183. July 2015. ★
Citations: 53
19. [C] **Heechul Yun**, Rodolfo Pellizzoni, and **Prathap Kumar Valsan**. "Parallelism-Aware Memory Interference Delay Analysis for COTS Multicore Systems." *Euromicro Conference on Real-Time Systems (ECRTS)*. pp: 184 – 195. July 2015. ★
Citations: 49
20. [J] Gang Yao, **Heechul Yun**, Zheng Pei Wu, Rodolfo Pellizzoni, Marco Caccamo, and Lui Sha. "Schedulability Analysis for Memory Bandwidth Regulated Multicore Real-Time Systems." *IEEE Transactions on Computers*. pp: 601-614. 2015 ★
Citations: 25
21. [C] **Heechul Yun**, Renato Mancuso, Zheng-Pei Wu, and Rodolfo Pellizzoni. "PALLOC: DRAM Bank-Aware Memory Allocator for Performance Isolation on Multicore Platforms." *IEEE Real-Time and Embedded Technology and Applications Symposium (RTAS)*. pp: 155-166. IEEE, April 2014. ★
Citations: 178
22. [C] Sibin Mohan, Stanley Bak, Emilliano Betti, **Heechul Yun**, Lui Sha, and Marco Caccamo. "S3A: Secure System Simplex Architecture for Enhanced Security of Cyber-Physical Systems." *IEEE/ACM High Condence Networked Systems (HiCoNS)*. 65-74. April 2013.
Citations: 94
23. [C] **Heechul Yun**, Gang Yao, Rodolfo Pellizzoni, Marco Caccamo, and Lui Sha. "MemGuard: Memory Band-width Reservation System for Efficient Performance Isolation in Multicore Platforms." *IEEE Real-Time and Embedded Technology and Applications Symposium (RTAS)*. pp. 55-64. April 2013. ★
Citations: 222
24. [C] **Heechul Yun**, Gang Yao, Rodolfo Pellizzoni, Marco Caccamo, and Lui Sha. "Memory Access Control in Multiprocessor for Real-time Systems with Mixed Criticality." *Euromicro*

Conference on Real-Time Systems (ECRTS). pp. 299-308. June 2012. ★

Citations: 137

25. [J] **Heechul Yun**, Po-Liang Wu, Anshu Arya, Tarek Abdelzaher, Cheolgi Kim, and Lui Sha. "System-wide Energy Optimization for Multiple DVS Components and Real-time Tasks." *Real-Time Systems*, vol 47, pp: 489-515. doi:10.1007/S11241-011-9125-X. 2011. ★
Citations: 34
26. [C] **Heechul Yun**, Po-Liang Wu, Anshu Arya, Tarek Abdelzaher, Cheolgi Kim, and Lui Sha. "System-wide Energy Optimization for Multiple DVS Components and Real-time Tasks." *Euromicro Conference on Real-Time Systems (ECRTS)*. pp. 134-142. July 2010. ★
Nominated for Best Paper.
27. [C] Cheolgi Kim, Mu Sun, Sibin Mohan, **Heechul Yun**, Abdullah Al-Nayeem, and Lui Sha. "A Framework for the Safe Interoperability of Medical Devices in the Presence of Connection Failures." *ACM Cyber-Physical Systems (ICCPS)*. pp. 149-158. April 2010. ★
Citations: 69
28. [C] **Heechul Yun**, Po-Liang Wu, Maryam Rahmaniheris, Cheolgi Kim, and Lui Sha. "A Reduced Complexity Design Pattern for Distributed Hierarchical Command and Control System." *ACM Cyber-Physical Systems (ICCPS)*. pp. 42-49. April 2010. ★

Minor Publications (Workshops, Preprints)

29. [P] **Waqar Ali and Heechul Yun**. "Virtual Gang based Scheduling of Real-Time Tasks on Multicore Platforms." *arXiv preprint arXiv:1912.10959 [cs.OS]*, December 2019
30. [W] **Waqar Ali, Michael Bechtel and Heechul Yun**. "Analyzable and Practical Real-Time Gang Scheduling on Multicore Using RT-Gang." *Workshop on Operating Systems Platforms for Embedded Real-Time applications (OSPert)*, July 2019
31. [W] **Farzad Farshchi, Qijing Huang, and Heechul Yun**. "Integrating NVIDIA Deep Learning Accelerator (NVDLA) with RISC-V SoC on FireSim." *Workshop on Energy Efficient Machine Learning and Cognitive Computing for Embedded Applications (EMC²)*, February 2019
32. [W] **Waqar Ali and Heechul Yun**. "Work-In-Progress: Protecting Real-Time GPU Applications on Integrated CPU-GPU SoC Platforms." *IEEE Real-Time and Embedded Technology and Applications Symposium-Work-In-Progress (RTAS-WIP)*, April 2017.
33. [W] **Heechul Yun and Prathap Kumar Valsan**. "Evaluating the Isolation Effect of Cache Partitioning on COTS Multicore Platforms." *Workshop on Operating Systems Platforms for Embedded Real-Time applications (OSPert)*. July 2015.
34. [W] **Prathap Kumar Valsan and Heechul Yun**. "An Enhanced COTS DRAM Controller Design for Real Time Systems." *Real-Time Systems Symposium Work-In-Progress (RTSS-WIP)*. IEEE, December 2014.
35. [W] **Santosh Gondi, Siddhartha Biswas, and Heechul Yun**. "Performance Isolation for Real-Time Applications on Multicore Platforms using PALLOC and MemGuard." *Real-Time Linux Workshop*. Dusseldorf, Germany: October 2014.

36. [W] Michael Jantz, Kshitij Doshi, Prasad Kulkarni, and **Heechul Yun**. "Leveraging MPST in Linux with Application Guidance to Achieve Power-Performance Goals." Ottawa Linux Symposium. 2014
37. [P] Lui Sha, Marco Caccamo, Renato Mancuso, Jung-Eun Kim, Man-Ki Yoon, Rodolfo Pellizzoni, **Heechul Yun**, Russel Kegley, Dennis Perlman, Greg Arundale, Richard Bradford "Single-core Equivalent Virtual Machines for Hard Real-Time Computing on Multicore Processors." *Technical Report, University of Illinois, Urbana-Champaign*, 2014.
Citations: 45
38. [W] **Heechul Yun**. "Improving Real-Time Performance on Multicore Platforms Using MemGuard." *Real-Time Linux Workshop*. October 2013.
39. [W] **Heechul Yun**, Cheolgi Kim, and Lui Sha. "Deterministic Real-time Scheduling." *IEEE Real-Time and Embedded Technology and Applications Symposium Work-In-Progress (RTAS-WIP)*. April 2011.
40. [W] Hyoksung Choi and **Heechul Yun**. "Context Switching and IPC Performance Comparison between uClinux and Linux on the ARM9 based Processors." *Samsung Tech Conference*. 2005.
Citations: 22
41. [W] Sangkwon Lee, **Heechul Yun**, and Joonwon Lee. "Adaptive Prefetching Technique for Home-based Lazy Release Consistency." *Workshop on Software Distributed Shared Memory (held in conjunction with CCGRID)*. 2001.
42. [W] **Heechul Yun**, Sankwon Lee, and Joonwon Lee. "An Efficient Lock Protocol for Home-based Lazy Release Consistency." *Workshop on Software Distributed Shared Memory (held in conjunction with CCGRID)*. 2001.

Software and Hardware Artifacts

43. **SpectreGuard**: An Efficient Data-centric Defense Mechanism Against Spectre Attacks
<https://github.com/CSL-KU/SpectreGuard>
44. **RT-Gang**: A Real-Time Gang Scheduler for Safety Critical Real-Time Systems
<https://github.com/CSL-KU/RT-Gang>
45. **FireSim-NVDLA**: An Open-Source RISC-V SoC with NVIDIA Deep Learning Accelerator
<https://github.com/CSL-KU/firesim-nvdl> (Star: 82)
46. **DeepPicar**: Deep Neural Network based autonomous RC car
<https://github.com/mbechtel2/DeepPicar-v2> (Star: 92)
47. **DetMem**: Linux and Gem5 simulator extensions supporting Deterministic Memory
<https://github.com/CSL-KU/detmem>
48. **BWLOCK++**: Real-Time GPU kernel protection mechanism for Integrated CPU-GPU SoC
<https://github.com/wali-ku/BWLOCK-GPU>

49. **BWLOCK**: Memory bandwidth locking mechanism for SMP multicore
<https://github.com/CSL-KU/BWLOCK>
50. **IsolBench**, Micro-benchmarks to quantify the quality of isolation of multicore systems
<https://github.com/CSL-KU/IsolBench>
51. **PALLOCC**: DRAM Bank-Aware Kernel Memory Allocator
<https://github.com/heecheul/palloc> (Star: 23)
52. **MemGuard**: Memory bandwidth reservation system for multi-core platforms
<https://github.com/heecheul/memguard> (Star: 27)
53. **CREST-Z3**: Non-linear arithmetic support for CREST (concolic execution engine)
<https://github.com/heecheul/crest-z3>
54. **Linux kernel patches**: ARM multicore performance improvements in mainline kernel
[ARM: 6998/2: kernel: use proper memory barriers for bitops](#)
[ARM: 6995/2: mm: remove unnecessary cache flush on v6 cpypage](#)

Patents

55. H. Yun, Y. Jeon, M. Choi. "Apparatus and method for storing data in nonvolatile cache memory considering update ratio", KR100725390B1, Korea.
56. H. Yun. "A method for managing flash memory and flash memory system", KR100739722B1, Korea.
57. Y. Oh, H. Yun. "Apparatus and method of providing contents service", KR100840609B1, Korea / US9298748B2, USA
58. W. Kang, H. Yun. "Method for integrating Linux kernel and application software packages and generating installation le list based on CML2 computer language", US7367013B2, USA.

Books

59. Hyejin Kim, Heechul Yun. "Linux 3.0 Power User" (Korean), PCBOOK, 1996

B. Scholarly Presentations/Lectures (Selected)

1. "Micro-Architectural Attacks on Cyber-Physical Systems." Real-Time Scheduling Open Problems Seminar (RTSOPS), Paris, France. July 2019
2. "RT-Gang: Real-Time Gang Scheduling Framework for Safety-Critical Systems." IEEE RTAS, Montreal, Canada, April 2019
3. "OS and Architecture Support for High-Performance Safe-Critical Embedded Real-Time Systems." Seoul National University, Seoul, Korea. August 2018
4. "Micro-Architectural Side-Channel Attack Resistant OS and Architecture." NSA SoS Lablet Kickoff Meeting, College Park, MD, USA. April, 2018

5. "System-level Support for Intelligent and Safe Cyber-Physical Systems."
Kansas State University, Manhattan, Kansas. October 2017
University of Illinois at Urbana–Champaign (UIUC), Champaign, Illinois. September 2017.
Sungkyunkwan University, Suwon, South Korea. July 2017.
Electronics and Telecommunications Research Institute (ETRI), South Korea. July 2017.
6. "Cache Partitioning on Contemporary COTS Multicore Processors."
Second TCRTS Workshop on Certifiable Multicore Avionics and Automotive Systems (CMAAS), Pittsburgh, PA, USA. April 2017.
7. "Computing Infrastructure Support for Intelligent and Safe Cyber-Physical Systems."
Seoul National University, Seoul. South Korea. August 2016.
8. "Taming Non-Blocking Caches to Improve Isolation in Multicore Real-Time Systems."
IEEE RTAS, Vienna, Austria. 2016.
9. "A Simplex Architecture for Intelligent and Safe Unmanned Aerial Vehicles."
AFRL Safe & Secure Systems and Software Symposium (S5), Dayton, Ohio. July 14, 2016.
10. "Taming Non-Blocking Caches to Improve Isolation in Multicore Real-Time Systems."
Embedded Computing Community of Practice at Lockheed Martin, Webinar. June 2016.
11. "Parallelism-Aware Memory Interference Delay Analysis for COTS Multicore Systems."
ECRTS, Lund, Sweden. July 2015.
12. "Toward certifiable avionics platforms: Single Core Equivalent (SCE) techniques."
First TCRTS Workshop on Certifiable Multicore Avionics Systems (CMAS). April 2015.
13. "Memory-Aware Power/Energy Management."
ETRI, Daejun, Korea. July 2014.
14. "PALLOC: DRAM Bank-Aware Memory Allocator for Performance Isolation on Multicore Real-Time Systems." IEEE RTAS, Berlin, Germany. April 2014.
15. "Operating System Level Shared Resource Management in the Multicore Era."
Sungkyunkwan University, Suwon, South Korea. December 12, 2013.
Korea Aerospace University, Goyang, South Korea. December 11, 2013.
University of Seoul, Seoul, South Korea. December 10, 2013.
16. "MemGuard: Memory Bandwidth Reservation System for Efficient Performance Isolation in Multi-core Platforms." IEEE RTAS, Philadelphia, PA. April 2013.
17. "Single-core Equivalent Multicore Platform Technologies."
Lockheed Martin, Littleton, CO. January 2013.
18. "Single-core Equivalent Configuration for Multicore Avionics Systems."
Rockwell Collins, Cedar Rapids, IA. August 2012.
19. "Memory Access Control in Multiprocessor for Real-time Systems with Mixed Criticality."
ECRTS, Pisa, Italy. July 2012.

20. "System-wide Energy Optimization for Multiple DVS Components and Real-time Tasks."
ECRTS, Brussels, Belgium. July 2010.

C. Grants and Contracts

\$4.2 million is awarded in total, out of which I am credited with **\$1.7 million**.

External Funding

1. "CSR: Small: Collaborative Research: Real-Time Computing Infrastructure for Integrated CPU-GPU SoC Platforms."
Investigators: Heechul Yun (**PI**), Lui Sha (Co-PI)
Agency: National Science Foundation (NSF)
Total budget: \$500,000 (Share: 56%)
Period: September 2018 - August 2021.
2. "Evolving and Certifiable Autopilot for Unmanned Aerial Systems"
Investigators: Willem Anemaat (PI), Shawn Keshmiri (Co-PI / Sub-award), Heechul Yun (**Co-PI / Sub-award**), Mark Ewing (Co-PI / Sub-award)
Agency: National Aeronautics and Space Administration (NASA) / DARcorporation
Phase I: Total budget: \$124,959 (Share: 15%), Period: June 2018 – December 2018
Phase II: Total budget: \$750,000 (Share: 15%), Period: August 2019 – July 2021
3. "Micro-Architectural Side-Channel Attack Resistant OS and Architecture."
Investigator: Heechul Yun (**PI**).
Agency: National Security Agency (NSA) via KU Science of Security Lablet
Total budget: \$482,737 (Share: 100%)
Period: February 2018 – September 2022.
4. "CSR: Small: The Deterministic Memory Approach for Predictable and High Performance Cyber Physical Systems."
Investigator: Heechul Yun (**PI**).
Agency: National Science Foundation (NSF)
Total budget: \$300,000 (Share: 100%)
Period: July 2017 - June 2020.
5. "Integration and Flight Test Verification of Mission Plan Computer in a UAV."
Investigators: Shawn Keshmiri (PI), Mark Ewing (Co-PI), Heechul Yun (**Co-PI**).
Agency: Lockheed Martin
Total budget: \$81,107 (Share: 30%)
Period: August 2017 – July 2018.
6. "Research on Backup Flight Control System for Reliable Unmanned Aerial Vehicles."
Investigators: Heechul Yun (**PI**) and Shawn Keshmiri (Co-PI).
Agency: Electronics and Telecommunications Research Institute (ETRI).
Total budget: \$56,000 (Share: 55%)
Period: September 2017 - November 2017.
7. "Multichannel Sense-and-Avoid Radar for Small UAVs."
Investigators: Christopher Allen (PI), Shawn Keshmiri (Co-PI), Guanghui Wang (Co-PI), and Heechul Yun (**Co-PI**).

- Agency: National Aeronautics and Space Administration (NASA)
Total budget: \$795,583 (Share: 22.5%)
Period: September 2015 - August 2017.
8. "Shared Resource Management (Cache, DRAM) Techniques for Multicore RTOS."
Investigator: Heechul Yun (**PI**).
Agency: Electronics and Telecommunications Research Institute (ETRI)
Total budget: \$50,000 (Share: 100%)
Period: June 2016 - January 2017
9. "Research on Shared Resource Management Techniques for Multicore RTOS."
Investigator: Heechul Yun (**PI**).
Agency: Electronics and Telecommunications Research Institute (ETRI)
Total budget: \$37,000 (Share: 100%)
Period: October 2015 - January 2016
10. "CSR: Medium: Multicore Real-Time Virtual Partitions."
Investigators: Lui Sha (PI), Tarek Abdelzaher (Co-PI), Marco Caccamo (Co-PI), Heechul Yun (**Co-PI / Sub-award**)
Agency: National Science Foundation (NSF) / University of Illinois, Urbana-Champaign
Total budget: \$ 1,049,481 (Share: 13.6%)
Period: September 2013 - August 2016

Internal Funding

11. "Operating System Support for Intelligent Cyber-Physical Systems."
Investigator: Heechul Yun (**PI**).
Agency: University of Kansas (General Research Fund)
Total budget: \$7,915 (Share: 100%)
Period: March 2016 – March 2017.
12. "An OS and Hardware Co-Design Approach for Predictable and High-performance Real-Time Computing on Multicore Platforms."
Investigator: Heechul Yun (**PI**).
Agency: University of Kansas (New Faculty General Research Fund)
Total budget: \$8,000 (Share: 100%)
Period: March 2015 - March 2016.

Donation, Gift

13. Amazon, AWS Cloud Credits for Research (Total value: \$20,000), 2019
14. NVIDIA, Titan XP and Jetson TX2 (Total value: \$1,800), 2018
15. Intel, Xeon E5-2658 v3 CPU x 2 (Total value: \$3,600), 2016
16. Xilinx, UEF-SDSOC-25, (Total value: \$299), 2016
17. Xilinx, UEF-VIVADO-SYSTEM-25, UEF-PR-VIVADO x 2 (Total value: \$3,099), 2015
18. Xilinx, DIGILAB-ZedBoard-410-248P-KIT x 2 (Total value: \$990), 2015

19. NVIDIA, Jetson TK1 x 1 (Total value: \$192), 2014

V. TEACHING RECORD

A. List of Courses Taught

<u>Course Number</u>	<u>Course Title</u>	<u>Sem/Year</u>	<u># Enrolled</u>	<u>% Taught</u>	<u>Evaluation (*)</u>
EECS 388-11108	Embedded Systems	Fall 2019	90	100	3.83
EECS 678-61235	Introductn to Operating Systems	Spring 2019	78	100	4.33
EECS 753-75466	Embd&Real Time Computer Systms	Spring 2019	7	100	4.75
EECS 678-20197	Introductn to Operating Systems	Fall 2018	28	100	4.93
EECS 678-51353	Introductn to Operating Systems	Spring 2018	84	100	4.40
EECS 750-65748	Advanced Operating Systems	Spring 2018	12	100	5.00
EECS 678-21167	Introductn to Operating Systems	Fall 2017	33	100	4.74
EECS 678-51497	Introductn to Operating Systems	Spring 2017	65	100	4.30
EECS 753-69494	Embd&Real Time Computer Systms	Spring 2017	23	100	4.73
EECS 678-22615	Introductn to Operating Systems	Fall 2016	38	100	4.33
EECS 678-51554	Introductn to Operating Systems	Spring 2016	80	100	4.28
EECS 750-61872	Advanced Operating Systems	Spring 2016	8	100	5.00
EECS 678-24411	Introductn to Operating Systems	Fall 2015	23	100	4.80
EECS 678-51757	Introductn to Operating Systems	Spring 2015	67	100	4.48
EECS 750-63545	Advanced Operating Systems	Spring 2015	10	100	4.78
EECS 678-29585	Introductn to Operating Systems	Fall 2014	22	100	4.54
EECS 750-65699	Advanced Operating Systems	Spring 2014	14	100	4.36

(*) Course evaluation score **average: 4.6** (5 is the maximum score.)

B. Graduate and Postgraduate Advising Record

Ph.D. Students

- Farzad Farshchi, Fall 2015 – Present
 - Publications: [1][3][8][9][13][31]
 - Status: Post-Qualifier
- Waqar Ali, Spring 2016 – Present
 - Publications: [4][7][10][29][30][32]
 - Status: Post-Qualifier
- Michael Garrett Bechtel, Spring 2018 – Present
 - Publications: [5][6][30]
 - Status: Pre-qualifier

Master Students

- Prathap Kumar Valsan, Fall 2014 - Summer 2016
 - Publications: [8][9][13][17][19][33][34]
 - Awards: Best Paper Award [12], Richard K. & Wilma S. Moore Thesis Award
 - First employment: Intel

5. Prasanth Veerapan Chattir Vivekanandan, Summer 2015 - Spring 2017
 - Publications: [12]
 - First employment: On Semiconductor
6. Siddhartha Biswas, Fall 2015
 - Publications: [10] [35]
7. Navajit Baruah, Summer 2017
8. Jacob Michael Fustos, Spring 2019 – Present
 - Publications: [3]

VI. SERVICE RECORD

A. Professional Service

Program Committee

- IEEE Real-Time and Embedded Technology and Applications Symposium (RTAS)*
(2019, 2018, 2017, 2015)
- IEEE Real-Time Systems Symposium (RTSS)*
(2019, 2017, 2015)
- IEEE Embedded and Real-Time Computing Systems and Applications (RTCSA)*
(2017, 2016, 2015)
- ACM International Conference on Embedded Software (EMSOFT)*
(2017)
- ACM/IEEE Design Automation Conference (DAC)*
(2020)
- ACM Conference on Languages, Compilers, and Tools for Embedded Systems (LCTES)*
(2020, 2014)
- IEEE International Symposium on Real-Time Computing (ISORC)*
(2017)
- Euromicro Conference on Digital System Design (DSD)*
(2019, 2018)
- IEEE Real-Time Systems Symposium, Artifact Evaluation*
(2017)
- IEEE Real-Time Systems Symposium, Brief Presentations*
(2018)
- IEEE Real-Time Systems Symposium, Work-in-Progress*
(2015, 2014, 2013)
- IEEE Real-Time and Embedded Technology and Applications Symposium, Artifact Evaluation*
(2018)
- IEEE Real-Time and Embedded Technology and Applications Symposium, Work-In-Progress*
(2015)
- Workshop on Security and Dependability of Critical Embedded Real-Time Systems (CERTS)*
(2018, 2017, 2016)
- Workshop on Operating Systems Platforms for Embedded Real-Time applications (OSPERT)*
(2019, 2015)
- Workshop on Mixed Criticality Systems (WMC)*
(2018)
- Embedded Operating System Workshop (EWiLi)*
(2019, 2018, 2017)

Organizer

IEEE Real-Time and Embedded Technology and Applications Symposium (RTAS),
Track Chair (Track 3: Hardware Architectures and Analysis Tools), (2019)
Workshop on Operating Systems Platforms for Embedded Real-Time applications (OSPERT)
Co-Chair, (2018, 2017)
Workshop on Certifiable Multicore Avionics Systems (CMAS)
Co-Chair, (2015)
IEEE Real-Time Systems Symposium, RTSS@work (demo session)
Chair, (2016)
Tutorial: Single Core Equivalent Architecture Framework for Safety Critical Multicore Systems
Co-Organizer, (2014)

Editor

ACM SIGBED Review
(August 2019 - Current)

Reviewer

IEEE Transactions on Computers (TC)
(2019, 2017, 2016)
ACM Transactions on Embedded Computing Systems (TECS)
(2017, 2015)
ACM Computing Surveys (CSUR)
(2018)
IEEE Transactions on Design Automation of Electronic Systems (TODAES)
(2017)
IEEE Transactions on Parallel and Distributed Systems (TPDS)
(2016)
IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (TCAD)
(2016)
Journal of Systems Architecture (JSA)
(2018, 2017)

B. University of Kansas Service

Department/Unit Service

Engineering Senate. (2017, 2018)
Scholarships Committee. (2017, 2018)
New Faculty Hiring Committee. (2017, 2016, 2015, 2014)
CS Curriculum Committee. (2016, 2014)

School/College Service

Presentation at Society of Women Engineers (SWE). Speaker. (2016)

University Service

Graduate Research Competition Judge. (2019, 2017)
Undergraduate Research Award (UGRA) Competition Judge. (May 2016)