Curriculum Vitae

Eun Jung Kim, Ph.D.

Associate Professor

ADDRESS: Department of Computer Science Engineering
Dwight Look College of Engineering
Texas A&M University
Peterson Building, Room 215
College Station, TX 77843-3112
Phone: (979) 845-3660
Fax: (979) 847-8578
E-Mail: ejkim@cse.tamu.edu
Homepage URL: http://faculty.cse.tamu.edu/ejkim/

RESEARCH INTERESTS:

Computer Architecture, Power/Temperature Control, Approximation Computing, Computer System Security, Parallel/Distributed Systems, Performance Evaluation, Fault-Tolerant Computing.

EDUCATION:

1998–2003: The Pennsylvania State University, University Park, Pennsylvania.
Ph.D. in Computer Science and Engineering (Academic advisor: Dr. Chita R. Das).
Thesis: Design and Analysis of High Performance and Energy Efficient Cluster Interconnects.

1992–1994: Pohang University of Science and Technology, Pohang, Korea.
M.S. in Computer Science and Engineering (Academic advisor: Dr. S. Y. Bang).
Thesis: A Variation Measure for Handwritten Character Image Data Using Entropy Difference.

1988–1992: Korea Advanced Institute of Science and Technology, Taejeon, Korea.
B.S. in Computer Science.

EXPERIENCE:

Texas A&M University, College Station, Texas. (09/2003 –)

- Associate Professor, Department of Computer Science & Engineering (09/2010 –)
- Chair, Ph.D. Admissions & Recruiting Committee (01/2017 –)
- Assistant Professor, Department of Computer Science & Engineering (09/2003 – 08/2010)

KAIST (Korea Advanced Institute of Science and Technology), Taejeon, Korea. (08/2012 – 01/2013)

- Visiting Professor, funded by Brain Pool Program (Inviting renowned foreign scientists/engineers residing overseas) from The Korean Federation of Science and Technology Societies (KOFST)

The Pennsylvania State University, University Park, Pennsylvania. (08/1998–06/2003)
- Research/Teaching Assistant, Department of Computer Science and Engineering.

Korea Telecom, Seoul, Korea. (03/1994–05/1997)
- Member of Research Staff, Communication Network Research and Development Group.
- Design and implementation of the network management systems for switching equipment.
- Design and development of a network management model for PCS wireless networks.
- TMN (Telecommunication Management Network) Standardization as a member of ITU-T SG7.

Pohang University of Science and Technology, Pohang, Korea. (03/1992–02/1994)
- Research/Teaching Assistant, Department of Computer Science and Engineering.
- Developed a printed Korean character recognizer using Neural Network.
- Built handwritten Korean character image database PE92.

HONORS AND AWARDS:

- Best Paper Award, Workshop on Applications for Multi-core Architectures (WAMCA, 2015).
- NSF CAREER Award, 2009.
- Ministry of Information and Communication, Faculty Fellowship, Korea, 2006.
- Best Paper Award, IEEE Global Telecommunication Conference (GLOBECOM 2006).
- Ministry of Information and Communication, Faculty Fellowship, Korea, 2005.

PUBLICATIONS:

(Kim's students are marked with *)

Book Chapters

- E. J. Kim, K. H. Yum, and C. R. Das, "Introduction to Analytical Models," *Performance Evaluation and Benchmarking*, edited by L. K. John and L. Eeckhout, Taylor & Francis, 2006.
- *Y. Jin, K. H. Yum, and E. J. Kim, "Adaptive Data Compression for Low-Power On-Chip Networks," *Low Power On-Chip Network Designs*, Springer, 2011.

Journal Papers

- *S. Kim, F. Mahmud, *J. Huang, *P. Majumder, C. Tsai, A. Muzahid, E. J. Kim, "WHISTLE: CPU Abstractions for Hardware and Software Memory Safety Invariants," in *IEEE Transactions on Computers (TC)*, 2022, doi: 10.1109/TC.2022.3180990.
- *J. Huang, *R. Reddy Puli, *P. Majumder, *S. Kim, *R. Boyapati, K. H. Yum, E. J. Kim, "Computing En-Route for Near Data Processing," *IEEE Transactions on Computers (TC)*, 2021.
- *J. Huang, *S. Bhosekar, *R. Boyapati, *N. Wang, B. Hur, K.H. Yum, E.J. Kim, "A Voting Approach for Adaptive Network-on-Chip Power-Gating," *IEEE Transactions on Computers (TC)*, 2021.

- *P. Majumder, S. Kim, J. Huang, K.H. Yum, E.J. Kim, “Remote Control: A Simple Deadlock Avoidance Scheme for Modular Systems-on-Chip,” *IEEE Transactions on Computers (TC)*, 2021.
- *Y. Jin, E. J. Kim, and T. M. Pinkston, “Communication-Aware Globally-Coordinated On-Chip Networks,” in *IEEE Transactions on Parallel and Distributed Systems (TPDS)*, 2011.
- *M. Lee, *M. Ahn, and E. J. Kim, “Fast Secure Communications in Shared Memory Multiprocessor Systems,” in *IEEE Transactions on Parallel and Distributed Systems (TPDS)*, 2011.
- *M. Lee, *B. Ahn, and E. J. Kim, “A Session Key Caching and Prefetching Scheme for Secure Communication in Cluster Systems,” in *Journal of Parallel and Distributed Computing (JPDC)*, 2010.
- Y. Kim, E. J. Kim, and R. N. Mahapatra, “Hierarchical Multiplexing Interconnection Structure for Cost-Effective Stage-Level Reconfigurable Chip Multiprocessor,” in *EURASIP Journal on Embedded Systems*.
- *Y. Jin, E. J. Kim, and K. H. Yum, “Design and Analysis of On-Chip Networks for Large Scale Cache Systems,” in *IEEE Transactions on Computers (TC)*, Vol. 59, No. 3, pp. 332-344, March 2010.
- K. H. Yum, *Y. Jin, E. J. Kim, and C. R. Das, “Integration of Admission, Congestion, and Peak Power Control in QoS-Aware Clusters,” in *Journal of Parallel and Distributed Computing (JPDC)*, Vol. 70, Issue 11, pp. 1087-1099, November 2010.
- *J. Iyer, *H. Yu, *H. Kim, E. J. Kim, K. H. Yum, and P. S. Mah, “Assuring K-Coverage in the Presence of Mobility and Wear-Out Failures in Wireless Sensor Networks”, in *International Journal of Sensor Networks (IJSNet)*, Vol. 5, No.1, pp. 58-65, 2009.
- *H. Kim, E. J. Kim, and K. H. Yum, “ROAL: A Randomly Ordered Activation and Layering Protocol for Ensuring K-Coverage in Wireless Sensor Networks,” in *Journal of Networks (JNW)*, Vol. 3, No. 1, pp. 43-52, January 2008.
- *H. K. Lee, *V. Hall, K. H. Yum, K. I. Kim, and E. J. Kim, “Bandwidth Estimation in Wireless LANs for Multimedia Streaming Services,” in *Journal of Advances in Multimedia*, Vol. 2007, Article ID 70429, 2007.
- *M. Lee and E. J. Kim, “A Comprehensive Framework for Enhancing Security in InfiniBand Architecture,” in *IEEE Transactions on Parallel and Distributed Systems (TPDS)*, Vol. 18, No. 10, pp.1393-1406, Oct. 2007.
- E. J. Kim, K. H. Yum, M. Yousif, J. Duato and C. R. Das, “Exploring IBA Design Space for Improved Performance,” in *IEEE Transactions on Parallel and Distributed Systems (TPDS)*, Vol.18, No. 4, pp. 498-510, April 2007.
- E. J. Kim, G. M. Link, K. H. Yum, V. Narayanan, M. Kandemir, M. J. Irwin, and C. R. Das, “A Holistic Approach to Designing Energy-Efficient Cluster Interconnects,” in *IEEE Transactions on Computers (TC)*, Vol. 54, No. 6, pp. 660-671, June 2005.
- E. J. Kim, K. H. Yum, and C. R. Das, “Performance Analysis of a QoS Capable Cluster Interconnect,” in *Performance Evaluation: An International Journal on Performance Modeling and Evaluation*, Vol. 60, Issues 1-4, pp. 275-302, May 2005.
- K. H. Yum, E. J. Kim, C. R. Das, and A. Vaidya, “MediaWorm: A QoS Capable Router Architecture for Clusters,” in *IEEE Transactions on Parallel and Distributed Systems (TPDS)*, Vol.13, No. 12, pp.1261–1274, December 2002.
- D. H. Kim, Y. S. Hwang, S. T. Park, E. J. Kim, S. H. Park, and S. Y. Bang, “Handwritten Korean Character Image Database PE92,” *IEICE Transactions on Information and System*, Vol. E79-D, No. 7, 1996.

- D. H. Kim, E. J. Kim, and S. Y. Bang, "A Variation Measure for Handwritten Character Image Data Using Entropy Difference," *Pattern Recognition*, Vol. 30, No. 1, pp. 19–29, 1997.

Conference Papers

- *J. Huang, P. Majumder, S. Kim, A. Muzahid, K. H. Yum, and E. J. Kim, "Communication Algorithm-Architecture Co-Design for Distributed Deep Learning", in *Proceedings of 2021 International Symposium on Computer Architecture (ISCA)*, June 2021.
- B. Hur, K. Myles, Z. N. Adelman, M. Erraguntla, M. A. Lawley, E. J. Kim, J. L. Burgi, KK. Price, K. Fritz, D. Hawke, Z. Pan, Z. Stokes, B. W. Harris, F. Aguado, C. B. Wheat, J. Gavlic, M. M. Martin, H. Street, S. Kim, and X. T. Dang, "IoT Environmental-monitoring System Development for Mosquito Research Through Capstone Project Integration in Engineering Technology", in *Proceedings of 2021 ASEE Virtual Annual Conference*, 2021.
- *S. Kim, F. Mahmud, J. Huang, P. Majumder, N. Christou, A. Muzahid, C-C. Tsai, and E. J. Kim, " ReViCe: Reusing Victim Cache to Prevent Speculative Cache Leakage, " in *Proceedings of 2020 IEEE Secure Development (SecDev)*, 2020.
- *J. Huang, R. Reddy Puli., P. Majumdar, S. K. Kim, R. Boyapati, K. H. Yum, and E. J. Kim, "Active-Routing: Compute on the Way for Near Data Processing," in *Proceedings of 25th IEEE International Symposium on High Performance Computer Architecture (HPCA)*, Washington D.C, USA, February 2019.
- *K. H. Kim, P. Devpura, A. Nayyar, A. Doolittle, K. Yum and E. J. Kim, "Dual Pattern Compression Using Data-Preprocessing for Large-Scale GPU Architectures," in *Proceedings of 2019 IEEE International Parallel and Distributed Processing Symposium (IPDPS)*, 2019.
- *R. Boyapati, J. Huang, P. Majumdar, K. H. Yum, and E. J. Kim, "Approx-NoC: A Data Approximation Framework for Network-On-Chip Architectures," in *Proceedings of 44th International Symposium on Computer Architecture (ISCA)*, Toronto, ON, Canada, June 2017. (16.8% acceptance rate)
- *K. H. Kim, R. Boyapati, J. Huang, Y. Jin, K. H. Yum, and E. J. Kim, "Packet Coalescing Exploiting Data Redundancy in GPGPU Architectures," in *Proceedings of 31st International Conference on Supercomputing (ICS)*, Chicago, IL, USA, June 2017. (16% acceptance rate)
- *R. Boyapati, J. Huang, N. Wang, K. H. Kim, K. H. Yum, and E. J. Kim, "Fly-Over: A Light-Weight Distributed Power-Gating Mechanism for Energy-Efficient Networks-on-Chip," in *Proceedings of 31st IEEE International Parallel and Distributed Processing Symposium (IPDPS)*, Orlando, FL, June 2017. (22% acceptance rate)
- *D. Dang, Rabi Mahapatra, and E. J. Kim, "PID Controlled Thermal Management in Photonic Network-on-Chip," in *Proceedings of 33rd IEEE International Conference on Computer Design (ICCD)*, New York City, USA, October 2015. (19.8%acceptance rate)
- *H. Jang, J. Kim, P. Gratz, K. H. Yum, and E. J. Kim, "A Bandwidth Efficient On-Chip Interconnects Design for GPGPUs," in *Proceedings of the 52nd Design Automation Conference (DAC)*, San Francisco, CA, June 2015. (20.5% acceptance rate)
- *L. Wang, *J. Jayabalan, *M. Ahn, *H. Gu, K. H. Yum, and E. J. Kim, "A Case for Handshake in Nanophotonic Interconnects," in *Proceedings of IEEE International Parallel and Distributed Processing Symposium (IPDPS)*, Boston, MA, May 2013. (21% acceptance rate)
- *L. Wang, *P. Kumar, K. H. Yum, and E. J. Kim, "APCR: An Adaptive Physical Channel Regulator for On-Chip Interconnects," in *Proceedings of International Conference on Parallel*

Architectures and Compilation Techniques (PACT), Minneapolis, MN, September 2012. (18.9% acceptance rate)

- *H. Jang, *B. S. An, *N. Kulkarni, K. H. Yum, and E. J. Kim, "A Hybrid Buffer Design with STT-MRAM for On-Chip Interconnects," in *Proceedings of ACM/IEEE International Symposium on Networks-on-Chip (NOCS)*, Copenhagen, Denmark, May 2012. (27% acceptance rate)
- *B. S. An, M. Lee, K. H. Yum, and E. J. Kim, "Efficient Data Packet Compression for Cache Coherent Multiprocessor Systems," in *Proceedings of the Data Compression Conference (DCC)*, Snowbird, Utah, April 2012.
- *M. Ahn and E. J. Kim, "Pseudo-Circuit: Accelerating Communication for On-Chip Interconnection Networks," in *Proceedings of the International Symposium on Microarchitecture (MICRO-43)*, Atlanta, Georgia, December 2010. (18% acceptance rate)
- *L. Wang, *P. Kumar, *R. Boyapati, K. H. Yum, and E. J. Kim, "Efficient Lookahead Routing and Header Compression for Multicasting in Networks-On-Chip," in *Proceedings of the ACM/IEEE Symposium on Architectures for Networking and Communications Systems (ANCS)*, La Jolla, CA, October 2010. (36% acceptance rate)
- *H. K. Lee, *B. S. Ahn, and E. J. Kim, "Adaptive Prefetching Scheme Using Web Log Mining in Cluster-based Web Systems," in *Proceedings of the International Conference on Web Services (ICWS)*, Los Angeles, USA, July 2009. (18% acceptance rate)
- *L. Wang, *H. J. Kim, *Y. Jin, and E. J. Kim, "Recursive Partitioning Multicast: A Bandwidth-Efficient Routing for Networks-On-Chip," in *Proceedings of International Symposium on Networks-on-Chip (NOCS)*, San Diego, CA, May 2009. (23% acceptance rate)
- *I. Yeo, *C. C. Liu, and E. J. Kim, "Temperature-Aware Scheduler Based on Thermal Behavior Grouping in Multicore Systems," in *Proceedings of Automation and Test In Europe (DATE)*, Nice, France, April 2009. (23.5% acceptance rate)
- *I. Yeo, *C. C. Liu, and E. J. Kim, "Predictive Dynamic Thermal Management for Multicore Systems," in *Proceedings of the 45th Design Automation Conference (DAC)*, Anaheim, CA, June 2008. (23% acceptance rate)
- *I. Yeo and E. J. Kim, "Hybrid Dynamic Thermal Management Based on Statistical Characteristics of Multimedia Applications," in *Proceedings of the International Symposium on Low Power Electronics and Design (ISLPED)*, Bangalore, India, August 2008. (17% acceptance rate)
- *Y. Jin, K. H. Yum, and E. J. Kim, "Adaptive Data Compression for High-Performance Low-Power On-Chip Networks", in *Proceedings of 41st International Symposium on Microarchitecture (MICRO-41)*, Lake Como, Italy, 2008. (19% acceptance rate)
- *H. Kim, E. J. Kim, and K. H. Yum, "A Randomly Ordered Activation and Layering Protocol for Ensuring *K*-Coverage in Wireless Sensor Networks," in *Proceedings of International Conference on Wireless and Mobile Communications*, March2007. (31% acceptance rate)
- *I. Yeo, *H. K. Lee, K. H. Yum, and E. J. Kim, "Effective Dynamic Thermal Management for MPEG-4 Decoding," in *Proceedings of IEEE International Conference on Computer Design (ICCD 2007)*, Lake Tahoe, USA, October 2007. (28% acceptance rate)
- *Y. Jin, E. J. Kim, and K. H. Yum, "A Domain-Specific On-Chip Network Design for Large Scale Cache Systems", in *Proceedings of 13th International Symposium on High-Performance Computer Architecture (HPCA-13)*, 2007. (16% acceptance rate)
- *M. Lee, *M. S. Ahn, and E. J. Kim, "I^2SEMS: Interconnects Independent Security Enhanced Shared Memory Multiprocessor Systems," in *Proceedings of the 16th International Conference on Parallel Architectures and Compilation Techniques (PACT 2007)*, Brasov, Romania, September 2007. (19% acceptance rate)

- *H. K. Lee, *V. Hall, K. H. Yum, K. I. Kim and E. J. Kim, "Design of Active Set Top Box in a Wireless Network for Scalable Streaming Services," in *Proceedings of the 2007 International Conference on Image Processing (ICIP)*, San Antonio, 2007. (28% acceptance rate)
- *H. K. Lee, *V. Hall, K. H. Yum, K. I. Kim, and E. J. Kim, "Bandwidth Estimation in Wireless LANs for Multimedia Streaming Services," in *Proceedings of the 2006 International Conference on Multimedia & Expo (ICME)*, 2006. (22% acceptance rate)
- *B. Azeez, *H. Kim, *Y. Jin, and E. J. Kim, "I/O Node Placement for Performance and Reliability in Torus Networks," in *Proceedings of The 18th IASTED International Conference on Parallel and Distributed Computing and Systems (PDCS)*, 2006.
- *H. K. Lee, *G. Vageesan, K. H. Yum, and E. J. Kim, "A PROactive Request Distribution (PRORD) Using Web Log Mining in Cluster-Based Web Server," in *Proceedings of the 2006 International Conference on Parallel Processing (ICPP)*, 2006. (32% acceptance rate)
- *H. Yu, *J. Iyer, *H. Kim, K. H. Yum, P. Mah, and E. J. Kim, "Assuring *K*-Coverage in the Presence of Mobility in Wireless Sensor Networks," in *Proceedings of the IEEE Global Telecommunication Conference (GLOBECOM 2006)*, selected for best papers, 2006. (28% acceptance rate)
- P. S. Bhojwani, R. N. Mahapatra, and E. J. Kim, "A Heuristic for Peak Power Constrained Design of Network on Chip (NoC) Based Multimode Systems", in *Proceedings of IEEE International Conference on VLSI Design*, IEEE Computer Press, 2005. (35% acceptance rate)
- *M. Lee, E. J. Kim, and M. Yousif, "Security Enhancement in InfiniBand Architecture," in *Proceedings of the 19th IEEE International Parallel & Distributed Processing Symposium 2005*, Denver, 2005. (14% acceptance rate)
- *Y. Jin, E. J. Kim, and K. H. Yum, "Peak Power Control for a QoS Capable On-Chip Network", in *Proceedings of International Conference on Parallel Processing (ICPP)*, 2005. (28.6% acceptance rate)
- *H. K. Lee, *G. Vageesan, and E. J. Kim, "On Improving Performance and Conserving Power in Cluster-Based Web Servers," in *Proceedings of International Conference on Web Services (ICWS)*, 2005. (19% acceptance rate)
- E. J. Kim, K. H. Yum, G. Link, V. Narayanan, M. Kandemir, M. J. Irwin, M. Yousif, and C. R. Das, "Energy Optimization Techniques in Cluster Interconnects," in *Proceedings of International Symposium on Low Power Electronics and Design (ISLPED'03)*, pp.459–464, August 2003, Korea. (7% acceptance rate for regular papers)
- E. J. Kim, K. H. Yum, C. R. Das, M. Yousif, and J. Duato, "Performance Enhancement Techniques in InfiniBand™ Architecture," in *Proceedings of IEEE International Symposium on High Performance Computer Architecture (HPCA-9)*, pp.253–262, February 2003, Anaheim, CA. (17% acceptance rate)
- K. H. Yum, E. J. Kim, C. R. Das, M. Yousif, and J. Duato, "Integrated Admission and Congestion Control for QoS Support in Clusters," in *Proceedings of IEEE International Conference on Cluster Computing*, pp. 325–332, September 2002.
- E. J. Kim, K. H. Yum, and C. R. Das, "Calculation of Deadline Missing Probability in a QoS Capable Cluster Interconnect," in *Proceedings of IEEE International Symposium on Network Computing and Applications (NCA)*, pp.34–43, February 2002, Cambridge, MA.
- E. J. Kim, K. H. Yum, and C. R. Das, "An Analytical Model for a QoS Capable Cluster Interconnect," in *Proceedings of International Conference on Measurement, Modeling and Evaluation of Computer and Communication Systems (MMB)*, pp.9–24, September 2001, Germany.

- K. H. Yum, E. J. Kim, and C. R. Das, "QoS Provisioning in Clusters: An Investigation of Router and NIC Design," in *Proceedings of ACM International Symposium on Computer Architecture (ISCA)*, pp.120–129, June 2001, Sweden. (15% acceptance rate)

Workshop Papers, Posters and Technical Reports

- *R. Boyapati, *J. Huang, *N. Wang, *K. Kim, K. H. Yum, and E. J. Kim, "Fly-Over: A Light-Weight Distributed Power-Gating Mechanism for Energy-Efficient Networks-on-Chip," in Poster session of 25th International Conference on Parallel Architectures and Compilation Techniques (PACT), Haifa, Israel, September 2016.
- *W. Yuan, R. Boyapati, L. Wang, H. Jang, Y. Jin, K. H. Yum, and E. J. Kim, "Intra-Clustering: Accelerating On-Chip Communication for Data Parallel Architectures," in *Proceedings of 6th Workshop on Applications for Multi-core Architectures (WAMCA)*, Florianopolis, Brazil, October, 2015. Selected for the best paper award.
- *B. S. An, K. H. Yum, and E. J. Kim, "Scalable and Efficient Bounds Checking for Large-Scale CMP Environments," in *Proceedings of International Conference on Parallel Architectures and Compilation Techniques (PACT-2011)*, Galveston Island, Texas, October 2011.
- *M. Lee, E. J. Kim, K. H. Yum, and M. Yousif, "An Overview on Security Issues in Cluster Interconnects," in *Proceedings of the Cluster-Sec 2006 Workshop* (invited paper, CCGrid Workshops) 2006, Singapore.
- *H. Kim, E. J. Kim, and R. N. Mahapatra, "Power Management in RAID Server Disk System Using Multiple Idle States", in *Proceedings of International Workshop on Unique Chips and Systems (UCAS)*, 2005. Poster version presented in the Fourth Annual Austin Conference on Energy-efficient Design,2005.
- *H. K. Lee, *G. Vageesan, and E. J. Kim, "Application-Level Memory Management in Cluster-Based Servers", poster presentation in the Fourth Annual Austin Conference on Energy-Efficient Design, 2005.
- *M. Lee, E. J. Kim, K. H. Yum, and M. Yousif, "Instant Attack Stopper in InfiniBand Architecture," in *Proceedings of the Cluster-Sec 2005 Workshop (Cluster-Sec, CCGrid Workshops)*, Cardiff, UK, 2005.
- *M. Lee, E. J. Kim, and C. W. Lee, "A Source Identification Scheme against DDoS Attacks in Cluster Interconnects," in *International Workshop on Network Design and Architecture (IWNDA)* in conjunction with ICPP 2004.
- *H. Kim, Y. Jin, and E. J. Kim, "Power Management in RAID Server Disk System Using Multiple Idle States," Technical Report 2004-11-3, Department of Computer Science, Texas A&M University, November 2004.
- *Y. Jin, H. Kim, E. J. Kim, and K. H. Yum, "Peak Power Control for a QoS Capable On-Chip Network," Technical Report 2004-11-2, Department of Computer Science, Texas A&M University, November 2004.
- *H. Lee, G. Vageesan, and E. J. Kim, "Power and Locality Aware Request Distribution," Technical Report 2004-7-3, Department of Computer Science, Texas A&M University, July 2004.
- E. J. Kim, K. H. Yum, N. Kim, C. R. Das, and M. Yousif, "Performance Enhancement Techniques for QoS Provisioning in InfiniBand™ Architecture," Technical Report CSE-02-005, Department of Computer Science and Engineering, The Pennsylvania State University, February 2002.

- E. J. Kim, K. H. Yum, and C. R. Das, "Performance Analysis of a QoS Capable Cluster Interconnect," Technical Report CSE-01-001, Department of Computer Science and Engineering, The Pennsylvania State University, January 2001.
- K. H. Yum, E. J. Kim, and C. R. Das, "QoS Provisioning in Clusters: An Investigation of Router and NIC Design," Technical Report CSE-01-005, Department of Computer Science and Engineering, The Pennsylvania State University, March 2001.
- K. H. Yum, E. J. Kim, G. Viswanathan, C. R. Das, M. Yousif, and J. Duato, "Integrated Admission and Congestion Control for QoS Support in Clusters," Technical Report CSE-01-26, Department of Computer Science and Engineering, The Pennsylvania State University, October 2001.
- K. H. Yum, E. J. Kim, V. Shirodkar, S. Hanabe, and C. R. Das, "Design and Analysis of a Versatile Router for Supporting Integrated Traffic in Clusters," Technical Report CSE-00-021, Department of Computer Science and Engineering, The Pennsylvania State University, October 2000.
- E. J. Kim and S. B. Kim, "Customer Network Management for Public Data Network," in *Proceedings of Korea Electronic Communication Society Conference*, July 1996, Korea.
- E. J. Kim, D. H. Kim, and S. Y. Bang, "A Verification of Variation Measure for Handwritten Korean Character," in *Proceedings of Hangul and Korean Information Processing Society Conference*, September 1993, Korea.
- E. J. Kim, Y. H. Park, and S. Y. Bang, "The Development of Recognition System for Printed Korean Character," in *Proceedings of Korea Information Science Society Conference*, March 1993, Korea.

RESEARCH PROJECTS:

- NSF: SHF: Small: Communication Architecture Designs for Future Heterogeneous Systems; PI: Eun Jung Kim, Co-PI: Ki Hwan Yum; Grant period: 11/01/2021 – 04/30/2023; Amount: $250,000.
- NSF: SHF: Small: High Performance On-Chip Interconnects Design for Multicore Accelerators; PI: Eun Jung Kim, Co-PI: Ki Hwan Yum; Grant period: 07/15/2014 – 6/30/2018; Amount: $450,000.
- NSF: CAREER: Communication-Centric Chip Multiprocessor Design; National Science Foundation; PI: E. J. Kim; Grant period: 03/01/09 – 2/30/14; Amount: $440,000.
- NSF: Collaborative Research: Design and Analysis of High-Performance, Energy-Efficient, and Secure Clusters; National Science Foundation; PI: E. J. Kim, Co-PI:Ki Hwan Yum; Grant period: 04/01/06 – 3/31/09; Amount: $150,000.
- ETRI: Design and Analysis of Embedded Software Solutions in Wireless Environments; Electronics and Telecommunications Research Institute (ETRI), Korea; PI: E. J. Kim, Co-PI: Ki Hwan Yum; Grant period: 05/01/05 – 12/31/07; Amount: $180,000.

PROFESSIONAL ACTIVITIES: - Member of ACM and IEEE.

Service on Editorial Boards and Conference Organizing

- Associate Editor, IEEE Transactions on Computers (2019 - present).
- Associate Editor, IEEE Computer Architecture Letters (2020 - present).
- Committee Chair, the Reappointment Evaluation Committee for the EIC (Editor in Chief) of IEEE Computer magazine, 2021.
- Program Co-Chair, the 12th IEEE International Conference on Networking, Architecture, and Storage (NAS 2021).

- Program Co-Chair, the 39th IEEE International Conference on Computer Design (ICCD), 2021 Processor Architecture Track.
- Guest Editor, IEEE Transaction on Computers (TC) Special Issue on "Communications for Many-Core Processors and Accelerators" (2020).
- Associate Editor, IEEE Computer Architecture Letters (2012 -2016).
- Founding Organizer and Program Chair, the Second Workshop on Hardware/Software Techniques for Minimizing Data Movement (Min-Move 2018).
- Founder and Program Chair, the First Workshop on Hardware/Software Techniques for Minimizing Data Movement (Min-Move 2017).
- Program Chair, the 12th IEEE International Conference on Networking, Architecture, and Storage (NAS 2017).
- Program Chair, the 8th IEEE International Conference on Networking, Architecture, and Storage (NAS 2013).
- Program Co-Chair, the Parallel and Distributed Computing track at the 16th International Conference on Computer Communications and Networks (ICCCN 2007).
- Local Arrangement Chair, The Eighth ACM/IEEE Symposium on Architectures for Networking and Communications Systems (ANCS 2012).
- Registration Chair, the 25th IEEE International Symposium on High-Performance Computer Architecture (HPCA 2019).

Service on Program Committees

- The 29th IEEE International Symposium on High-Performance Computer Architecture (HPCA-29) industry track
- The 51st International Conference on Parallel Processing (ICPP 2022)
- IEEE/ACM International Symposium on Networks-on-Chip (NOCS)
- The 36th IEEE International Parallel & Distributed Processing Symposium (IPDPS 2022)
- The Fourth Young Architect Workshop (YArch 2022)
- The External Review Committee for the 49th IEEE/ACM International Symposium on Computer Architecture (ISCA 2022)
- The International Symposium on Computer Architecture (ISCA 2021)
- The International Symposium on High-Performance Computer Architecture (HPCA 2021)
- The IEEE Computer Architecture Letters (CAL) Editor in Chief (EIC) Search Committee 2021
- The 50th International Conference on Parallel Processing (ICPP 2021)
- The 38th IEEE International Conference on Computer Design (ICCD 2020)
- The 49th International Conference on Parallel Processing (ICPP 2020)
- The 37th IEEE International Conference on Computer Design (ICCD 2019)
- The 51st IEEE/ACM International Symposium on Microarchitecture (MICRO 2018)
- The 36th IEEE International Conference on Computer Design (ICCD 2018)
- The Second Workshop on Hardware/Software Techniques for Minimizing Data Movement (Min-Move 2018)
- The 35th IEEE International Conference on Computer Design (ICCD 2017)
- The First Workshop on Hardware/Software Techniques for Minimizing Data Movement (Min-Move 2017)
- The 12th IEEE International Conference on Networking, Architecture, and Storage (NAS 2017)
- The 8th IEEE International Conference on Networking, Architecture, and Storage (NAS) 2014
- The 25th IEEE International Parallel & Distributed Processing Symposium (IPDPS) 2011

• The ACM International Conference on Computing Frontiers (CF) 2010
• The 10th International Conference on Algorithms and Architectures for Parallel Processing (ICA3PP 2010)
• The IEEE International Conference on Embedded and Real-Time Computing Systems and Applications (RTCSA) 2007
• The International Symposium on High-Performance Computer Architecture 2006
• The 33rd International Conference on Parallel Processing (ICPP2004)
• The 10th International Conference on Parallel and Distributed Systems (ICPADS'04)
• International Workshop on Network Design and Architecture (IWNDA 2004)

Proposal Review

- Panelist, National Science Foundation Computing and Communication Foundation Program. (2007, 2008, 2009, 2010, 2013, 2014, 2015, 2016, 2017, 2018, 2020, 2021)
- Reviewer, U.S. Army Research. (2008)

Paper Review

- Reviewer of ISCA, HPCA, Micro, PACT, DAC, IPDPS, ICPP, HiPC, NOCS, ICDD, IEEE Transactions on Computers, IEEE Transactions on Parallel and Distributed Systems, IEEE Transactions on VLSI Systems, ACM Transactions on Architecture and Code Optimization, IEEE Computer Architecture Letters, Journal of Microprocessors and Microsystems, Journal of Parallel and Distributed Computing.

UNIVERSITY/DEPARTMENTAL COMMITTEE SERVICE:

- Co-Chair, Ph.D. Admissions & Recruiting Committee, Department of Computer Science and Engineering, Texas A&M University, 2021- present.
- Member, Awards Committee (Graduate), Department of Computer Science & Engineering, Texas A&M University, 2016-present.
- Chair, Ph.D. Admissions & Recruiting Committee, Department of Computer Science and Engineering, Texas A&M University, 2016-2021.
- Member, Promotion & Tenure Committee, Department of Computer Science & Engineering, Texas A&M University, 2020-2021.
- Member, Honors Committee, Department of Computer Science & Engineering, Texas A&M University, 2018-2021.
- Member, Promotion & Tenure Committee, Department of Computer Science & Engineering, Texas A&M University, 2016-2017.
- Member, Advisory Committee, Department of Computer Science & Engineering, Texas A&M University, 2015-2016.
- Member, Graduate Admission & Recruits, Department of Computer Science & Engineering, Texas A&M University, 2013-2015.
- Member, Computer Engineering Coordinating Committee, Department of Computer Science & Engineering, Texas A&M University, 2013-2015.
- Member, Space Committee, Department of Computer Science & Engineering, Texas A&M University, 2013-2014.
- Member, Research Council, College of Engineering, Texas A&M University, 2013-2015.

- Member of COE Honors and Awards Committee, College of Engineering, Texas A&M University, 2011.
- Member of Undergraduate Curriculum Committee, Department of Computer Science, Texas A&M University, 2008 - 2012.
- Member of Graduate Advisory Committee, Department of Computer Science, Texas A&M University, 2007 - 2008.
- Member of Undergraduate Student Awards Committee, Department of Computer Science, Texas A&M University, 2006 - 2007.
- Member of Graduate Assistantship & Scholarship Selection Committee, Department of Computer Science, Texas A&M University, 2005 - 2006.
- Member of Student Award Committee, Department of Computer Science, Texas A&M University, 2004 - 2005.
- Member of Library Committee, Department of Computer Science, Texas A&M University, 2003 - 2004.

INVITED TALKS:

- "Communication Algorithm-Architecture Co-Design for Distributed Deep Learning," CSCE 181 Seminar, Department of Computer Science & Engineering, Texas A&M University, 9/23/2021.
- "Invited Tutorial: Preventing Cache Leakage from Spectre and Meltdown Attacks," The 22nd World Conference on Information Security Application, Jeju, Korea, 8/13/2021
- "Tutorial: Approximate Computing for Networks on Chip," ACM/IEEE International Symposium on Networks-on-Chip (NOCS), Torino, Italy, 10/5/2018.
- "APPROX-NoC: A Data Approximation Framework for Network-On-Chip Architectures," IBM T. J. Watson Research Center, New York, 8/11/2017.
- "Bandwidth Efficient On-Chip Interconnect Designs for GPGPUs," Samsung Advanced Institute of Technology, 7/03/2015.
- "Next Generation CMP Design," POSTECH, Korea, 12/7/2012.
- "Communication-Centric Chip Multiprocessor Design," Samsung, 11/12/2012.
- "Secure Multiprocessor Design," KAIST, Korea, 11/5/2012.
- "Secure Multiprocessor Design," Hannam University, Korea, 10/24/2012.
- "Communication-Centric Chip Multiprocessor Design," ICC Summer Global Lecture Series, KAIST, Korea, 9/10- 9/14, 2012.
- "On-Chip Network Design for GPGPU," AMD, Texas Austin, 8/21,2012.
- "Secure Cluster Design," Computer Engineering Seminar, Department of Electrical and Computer Engineering, Texas A&M University, 3/20/2006.
- "Secure Cluster Design," Pohang University of Science and Technology, 8/12/2005.
- "Fault Tolerant Routing in Energy Efficient Cluster Interconnects," IBM Austin Research Lab, 1/30/2004.
- "Fault Tolerant Routing in Energy Efficient Cluster Interconnects," CPSC 681 Graduate Seminar, Department of Computer Science, Texas A&M University, 11/24/2003.
- "High Performance and Energy Efficient Cluster Interconnects," Department of Computer Information Science and Engineering, University of Florida, 4/23/2003.
- "High Performance and Energy Efficient Cluster Interconnects," Department of Computer Science, Texas A&M University, 4/16/2003.

- "High Performance and Energy Efficient Cluster Interconnects," Department of Electrical and Computer Engineering, University of Rhode Island, 3/13/2003.
- "High Performance and Energy Efficient Cluster Interconnects," Department of Computer Science, University of Delaware, 3/3/2003.
- "High Performance and Energy Efficient Cluster Interconnects," Department of Electrical and Computer Engineering, Rutgers University, 2/23/2003.
- "High Performance and Energy Efficient Cluster Interconnects," Department of Electrical and Computer Engineering, Michigan State University, 2/3/2003.
- "Performance Enhancement Techniques for InfiniBand™ Architecture," International Symposium on High-Performance Computer Architecture (HPCA-9), 2/10/2003.
- "Calculation of Deadline Missing Probability in a QoS Capable Cluster Interconnect," International Symposium on Network Computing and Applications (NCA 01), 2/14/2002.

COURSE TAUGHT:

- CSCE 312H (Undergraduate level Computer Organization, Honor Section)
- CSCE 312 (Undergraduate level Computer Organization)
- CSCE 350 (Undergraduate level Computer Architecture)
- CSCE 614 (Graduate level Computer Architecture)
- CSCE 689 (Multicore Accelerators for Big Data)
- CSCE 689 (Special Topics in Chip Multiprocessor Systems)
- CSCE 689 (Special Topics in Cluster Interconnects)

STUDENT RESEARCH ADVISING:

Ph.D. Students

- Hogil Kim, Graduated in 2007, Current Position: Associate Professor at Korea Army Academy.
- Manhee Lee, Graduated in 2008, Current Position: Associate Professor at Hannam University.
- Yuho Jin, Graduated in 2009, Current Position: Research Engineer at AMD.
- Heungki Lee, Graduated in 2009, Current Position: Principal Engineer at Samsung Electronics.
- Inchoon Yeo, Graduated in 2009, Current Position: Principal Engineer at Samsung Electronics.
- Minseon Ahn, Graduated in 2012, Current Position: Research Engineer at SAP Labs Korea.
- Baiksong Ahn, Graduated in 2012, Current Position: Research Engineer at Electronics and Telecommunications Research Institute.
- Lei Wang, Graduated in 2014, Current Position: Senior Software Engineer at Alibaba.
- Hyunjun Jang, Graduated in 2015, Current Position: Research Engineer at AMD.
- Rahul Boyapati, Graduated in 2017, Current Position: Research Engineer at Intel.
- Jiayi Huang, Graduated in 2020, Current Position: Post-Doctor at University of California at Santa Barbara.
- Kyounghun Kim, Graduated in 2021, Current Position: Research Engineer at AMD.
- Pritam Majumder, Graduated in 2022, Current Position: Research Engineer at Intel.
- Sungkeun Kim (Fall 2018 – present).

Master Students

- Gopinath Vageesan (Graduated in 2005, First Employment: Microsoft).

- Baba Tunde (Graduated in 2005, First Employment: National Instrument).
- Varrian Hall (Graduated in 2006, First Employment: Raytheon).
- Jayakrishnan V. Iyer (Graduated in 2008, First Employment: Jupiter).
- Sung Ho Park (Graduated in 2008, First Employment: Intel).
- Chihchun Liu (Graduated in 2008, First Employment: Flowserver).
- Poornachandran Kumar (Graduated in 2010, First Employment: Wipro).
- Wen Yuan (Graduated in 2012, First Employment: AMD).
- Nikhil Kulkarni (Graduated in 2012, First Employment: AMD).
- Noman Shaukat (Graduated in 2012, First Employment: Microsoft).
- Sagar Narayana (Graduated in 2012, First Employment: Broadcom).
- Jagadish Chandar Jayabalan (Graduated in 2012, First Employment: Intel).
- Sonali Mahapatra (Graduated in 2014, First Employment: Cisco).
- Ningyuan Wang (Graduated in 2015, First Employment: Google).
- Priyank Devpura (Graduated in 2017, First Employment: Intel).
- Abhishek Nayyar (Graduated in 2017, First Employment: Fujitsu).
- Ramprakash Reddy Puli (Graduated in 2018, First Employment: AMD).
- Shilpa Bhosekar (Graduated in 2018, First Employment: Ambarella).
- Jae Guen Byoun (Graduated in 2018, First Employment: Korean Army).
- Divya Ravi Siravara (Graduated in 2019, First Employment: Apple).
- Swathi Changalarayappa (Graduated in 2019, First Employment: Apple).

Undergraduate Students

- Andres Arocho Quinones, REU student, 2011.
- Justin Frye, Undergraduate Research, 2010-2011.
- Snehil Verma, Global Program at Texas A&M University (Summer Research Internship), 2017.
- Troy Fulton, University Research Scholarships/Honors Thesis, 2019-2020.
- Sunyoung Park, University Research Scholarships/Honors Thesis, 2020-2021.
- Alexander Chin, Undergraduate Research, 2021.
- Edgardo Reyes, Undergraduate Research, 2021-2022.
- Victoria Rivera Casanova, University Research Scholarships/Honors Thesis, 2021-2022.