In Kee Kim

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Academic Employment

Aug 2018 –	**Associate ('24 –), Assistant ('18 – '24) Professor** – School of Computing
Aug 2018 –	**Affiliated Faculty** – Institute for Artificial Intelligence
Oct 2022 –	**Affiliated Faculty** – Institute for Integrative Precision Agriculture
	The University of Georgia, Athens, GA, USA

Education

May 2018	**Ph.D. in Computer Science**, *University of Virginia, Charlottesville, VA, USA*
Feb 2007	**M.S. in Computer Science and Engineering**, *Inha University, South Korea*
Feb 2001	**B.S. in Computer Science and Engineering**, *Inha University, South Korea*

Publications (39 Total, 7 Journals, 28 Conferences, 4 Workshops, [s]: a student author under my supervision, [*]: co-first authors.)

ICPR'24 D. Chakraborty[s], K. Ghosh, Z. Sukma[s], **I. K. Kim**, L. Ramaswamy, S. Bhandarkar, D. Mishra. An Empirical Evaluation of the Impact of Solar Correction in NeRFs for Satellite Imagery. In *27th International Conference on Pattern Recognition*, December, 2024.

EDGE'24 R. D. Rachmanto[s], Z. Sukma[s], A. N. L. Nabhaan, A. Setyanto, T. Jiang[s], **I. K. Kim**. Characterizing Deep Learning Model Compression with Post-Training Quantization on Accelerated Edge Devices. In *IEEE International Conference on Edge Computing and Communications*, July, 2024, Best Paper Award.

Springer Computing'24 H. Cha, **I. K. Kim**, T. Kim. Using a Random Forest to Predict Quantized Reuse Distance in an SSD Write Buffer. *Springer Computing*, 2024.

IEEE ACCESS'24 A. Setyanto, T. B. Sasongko, M. A. Fikri, **I. K. Kim**. Near-Edge Computing Aware Object Detection: A Review. *IEEE Access*, 2024.

BIBE'23 M. L. Putra, **I. K. Kim**, H. S. Gunawi, R. L. Grossman. CNT: Semi-Automatic Translation from CWL to Nextflow for Genomic Workflows. *IEEE International Conference on Bioinformatics and Bioengineering*, December, 2023.

IPCCC'23 J. Hao[s], M. E. Oni[s], **I. K. Kim**, L. Ramaswamy. DynaES: Dynamic Energy Scheduling for Energy Harvesting Environmental Sensors. *IEEE International Performance Computing and Communications Conference*, November, 2023.

CIC'23 J. Hao[s*], R. Sharma[*], M. B. Fleming, **I. K. Kim**, D. Mishra, S. Kim, L. Sutter, L. Ramaswamy. Toward Low-Cost and Sustainable IoT Systems for Soil Monitoring in Coastal Wetlands. *IEEE International Conference on Collaboration and Internet Computing*, November, 2023.

ICPE'23 S, He, **I. K. Kim**, W. Wang. A Study of Java Microbenchmark Tail Latencies. *ACM/SPEC International Conference on Performance Engineering*, Data Challenge Track, April, 2023.

ACM TOIT'23 J. Hao[s*], P. Subedi[*], L. Ramaswamy, **I. K. Kim**. Reaching for the Sky: Maximizing Deep Learning Inference Throughput on Edge Devices with AI Multi-tenancy. *ACM Transactions on Internet Technology*, 2023.

IC2E'22 V. K. Jayakumar, S. Arbat[s], **I. K. Kim**, W. Wang. CloudBruno: A Low-Overhead Online Workload Prediction Framework for Cloud Computing. *IEEE International Conference on Cloud Engineering*, September, 2022.

Elsevier PMC'22 O. Setayeshfar[*], K. Subramani[*], X. Yuan, R. Dey, D. Hong, **I. K. Kim**, K. H. Lee. Privacy Invasion via Smart-Home Hub in Personal Area Networks. In *Pervasive and Mobile Computing*, 2022.

EDGE'22 K. R. Rajput[s*], C. D. Kulkarni[s*], B. Cho, W. Wang, **I. K. Kim**. EdgeFaaSBench: Benchmarking Edge Devices Using Serverless Computing. In *IEEE International Conference on Edge Computing and Communications*, July, 2022.

IEEE TCC'22 **I. K. Kim**, J. Hwang, W. Wang, M. Humphrey. Guaranteeing Performance SLAs of Cloud Applications under Resource Storms. *IEEE Transactions on Cloud Computing*, Vol. 10, Issue 2, pp.1329-1343, July, 2022.

AAAI/ IAAI'22 S. Arbat[s], V. K. Jayakumar, J. Lee, W. Wang, **I. K. Kim**. Wasserstein Adversarial Transformer for Cloud Workload Prediction. In *Thirty-Fourth Annual Conference on Innovative Applications of Artificial Intelligence*, February, 2022.

ASE'21 S. He, T. Liu, P. Lama, J. Lee, **I. K. Kim**, W. Wang. A Performance Testing for Cloud Computing with Dependent Data Bootstrapping. In *IEEE/ACM International Conference on Automated Software Engineering*, November, 2021.

CLOUD'21 P. Subedi[s], J. Hao[s], **I. K. Kim**, L. Ramaswamy. AI Multi-Tenancy on Edge: Concurrent Deep Learning Model Executions and Dynamic Model Placements on Edge Devices. In *IEEE International Conference on Cloud Computing*, September, 2021.

CLOUD'21 J. Hao[s*], T. Jiang[s*], W. Wang, **I. K. Kim**. An Empirical Analysis of VM Startup Times in Public IaaS Clouds. In *IEEE International Conference on Cloud Computing*, September, 2021.

SMART-COMP'21 O. Setayeshfar[*], K. Subramani[*], X. Yuan, R. Dey, D. Hong, K. H. Lee, **I. K. Kim**. ChatterHub: Privacy Invasion via Smart Home Hub. In *IEEE International Conference on Smart Computing*, August, 2021.

SNTA @HPDC'21 J. Hao[s], P. Subedi[s], **I. K. Kim**, L. Ramaswamy. Characterizing Resource Heterogeneity in Edge Devices for Deep Learning Inferences. In *ACM International Workshop on System and Network Telemetry and Analytics*, June, 2021.

IPDPS'20 V. K. Jayakumar, J. Lee, **I. K. Kim**, W. Wang. A Self-Optimized Generic Workload Prediction Framework for Cloud Computing. In *IEEE International Parallel & Distributed Processing Symposium*, May, 2020.

IEEE TCC'20 **I. K. Kim**, W. Wang, Y. Qi, M. Humphrey. Forecasting Cloud Application Workloads with CloudInsight for Predictive Resource Management. *IEEE Transactions on Cloud Computing*, 2020.

CogMI'19 L. Xian[s], S. D. Vickers[s], A. L. Giordano, J. Lee, **I. K. Kim**, L. Ramaswamy. #selfharm on Instagram: Quantitative Analysis and Classification of Non-Suicidal Self-Injury. In *IEEE International Conference on Cognitive Machine Intelligence*, December, 2019.

TRB'19 **I. K. Kim**, D. Yan, B. Park, J. Guo. Traffic Flow Insight: A Novel Online Ensemble Model for Short-Term Traffic Volume Prediction. In *Transportation Research Board Annual Meeting*, January, 2019.

CLOUD'18 **I. K. Kim**, W. Wang, Y. Qi, M. Humphrey. CloudInsight: Utilizing a Council of Experts to Predict Future Cloud Application Workloads. In *IEEE International Conference on Cloud Computing*, July, 2018. **Best Student Paper Runner-Up**, *acceptance rate: 15%*

ISPDC'18 **I. K. Kim**, J. Hwang, W. Wang, M. Humphrey. Orchestra: Guaranteeing Performance SLAs for Cloud Applications by Avoiding Resource Storms. In *IEEE International Symposium on Parallel and Distributed Computing*, June, 2018.

IC2E'17 **I. K. Kim**, S. Zeng, C. Young, J. Hwang, M. Humphrey. iCSI: A Cloud Garbage VM Collector for Addressing Inactive VMs with Machine Learning. In *IEEE International Conference on Cloud Engineering*, April, 2017. *acceptance rate: 24%*

Middleware'16 **I. K. Kim**, S. Zeng, C. Young, J. Hwang, M. Humphrey. A Supervised Learning Model for Identifying Inactive VMs in Private Cloud Data Centers. In *ACM/IFIP/USENIX Middleware Conference*, December, 2016. *acceptance rate: 20%*

CLOUD'16 **I. K. Kim**, W. Wang, Y. Qi and M. Humphrey. Empirical Evaluation of Workload Forecasting Techniques for Predictive Cloud Resource Scaling. In *IEEE International Conference on Cloud Computing*, June, 2016. *acceptance rate: 15%*

BigData'15 **I. K. Kim**, J. Steele, A. Castronova, J. Goodall, and M. Humphrey. WDCloud: An End to End System for Large-Scale Watershed Delineation on Cloud. In *IEEE International Conference on Big Data*, December, 2015.

CLOUD'15 **I. K. Kim**, W. Wang, and M. Humphrey. PICS: A Public IaaS Cloud Simulator. In *IEEE International Conference on Cloud Computing*, June, 2015. *acceptance rate: 18%*

CLOUD'15 A. Ruiz-Alvarez, **I. K. Kim**, and M. Humphrey. Toward Optimal Resource Provisioning for Cloud MapReduce and Hybrid Cloud Applications. In *IEEE International Conference on Cloud Computing*, June, 2015. *acceptance rate: 18%*

UCC'14 **I. K. Kim**, J. Steele, Y. Qi, and M. Humphrey. Comprehensive Elastic Resource Management to Ensure Predictable Performance for Scientific Applications on Public IaaS Clouds. In *IEEE/ACM International Conference on Utility and Cloud Computing*, December, 2014. *acceptance rate: 27%*

eScience'13	M. Humphrey, J. Steele, **I. K. Kim**, M. G. Kahn, J. Bondy. M. Ames. CloudDRN: A Lightweight, End-to-End System for Sharing Distributed Research Data in the Cloud. In *IEEE International Conference on eScience*, October, 2013.
FGCN'07	S. H. Jang, **I. K. Kim**, and J. S. Lee. Node Availability-Based Congestion Control Model Using Fuzzy Logic for Computational Grid. In *International Conference on Future Generation Communication and Networking*, December, 2007.
UPWN @ISPA'07	**I. K. Kim**, S. H. Jang, and J. S. Lee. QLP-LBS: Quantization and Location Prediction-based LBS for Reduction of Location Update Costs. In *International Workshop on Ubiquitous Processing for Wireless Networks*, August, 2007.
SCS Simulation'07	**I. K. Kim**, S. H. Jang, and J. S. Lee. Adaptive and Mobility-Predictive Quantization-based Communication Data Management in High-Performance Distributed Computing. *SIMULATION: Transactions of The Society for Modeling and Simulation International*, Vol. 83, Issue 7, pp.529-548, July, 2007.
MDC @ICDCS'07	**I. K. Kim**, S. H. Jang, and J. S. Lee. Adaptive Distance Filter-based Traffic Reduction for Mobile Grid. In *International Workshop on Mobile Distributed Computing*, June, 2007.
HPG @GCC'06	**I. K. Kim**, Y. B. Ma, and J. S. Lee. Adaptive Quantization-based Communication Data Management for High-Performance Geo-computation in Grid Computing. In *International Workshop on High Performance Geo-computation*, October, 2006.
ICCSA'06	**I. K. Kim** and J. S. Lee. Resource Demand Prediction-based Grid Resource Transaction Network Model in Grid Computing Environment. In *International Conference on Computational Science and Its Applications*, May, 2006.

Miscellaneous (arXiv, Non-CS/Interdisciplinary Publications, or Extended Abstract)

Int'l J. Adv. Counselling'24	A. L. Giordano, W. B. McKibben, J. Dallas, L. Hearn, D. Luciani-Hill, **I. K. Kim**. Exploring Nonsuicidal Self-Injury Online Activity: A Content Analysis of Reddit Posts, August 2024.
Int'l J. Adv. Counselling'23	A. L. Giordano, A. W. Morey, **I. K. Kim**, J Song, O. Kim. School Counselors' Experiences with Student Vaping and Internet Gaming: a Report from the Field, September 2023.
GCE LTER'22	R. Sharma, J. Hao, M. Fleming, D. Mishra, **I. K. Kim**, S. Kim, L. Ramaswamy, L. Sutter. Low-Cost Sensors to Monitor Soil Organic Matter in Salt Marshes, *GCE (Georgia Coastal Ecosystem) LTER Annual Meeting*, January 2023.
DAF Data & AI Forum'22	**I. K. Kim**, L. Ramaswamy. Towards High-Performance AI Operations at the Edge. *DAF & AI Forum*, August 2022.
NSF LTER'22	R. Sharma, J. Hao, D. Mishra, **I. K. Kim**, S. Kim, L. Ramaswamy, L. Sutter. Cyberinfrastructure to Monitor Soil Organic Matter in Salt Marshes of the Georgia Coast, *NSF 2022 All Scientists' Meeting LTER (long term ecological research)*, Aug 2022.
SitS PI Meeting'22	R. Sharma, J. Hao, S. Kim, L. Ramaswamy, D. Mishra, **I. K. Kim**, L. Sutter. SitS AweSOMSense: Multi-modal Sensing and Analytics Framework for Modelling Belowground SOM in Salt Marsh Wetlands, *Second Principal Investigators Workshop for Signals in the Soil (SitS)*, May 2022.

arXiv'21	J. Hao, T. Jiang, W. Wang, **I. K. Kim**. An Empirical Analysis of VM Startup Times in Public IaaS Clouds: Extended Report. *arXiv*, 2021.
Int'l J. Adv. Counselling'21	A. L. Giordano, L. Lundeen, K. Wester, J. Lee, S. D. Vickerss, M. Schmit, **I. K. Kim**. Nonsuicidal self-injury on Instagram: Examining hashtag trends. In *International Journal for the Advancement of Counselling*, March 2022.
AGU'13	J. L Goodall, M. B Ercan, A. M Castronova, M. Humphrey, N. Beekwilder, J. Steele, **I. K. Kim**. Using the cloud to speed-up calibration of watershed-scale hydrologic models (*Invited*), In *AGU Fall Meeting*, December 2013.

Patents

I. K. Kim et al., **Managing Idle and Active Servers in Cloud Data Centers**. US Patent Number: 10834182, 2020, United States.

I. K. Kim, **IP-PBX Cluster System and its Implementation Methods**. Patent Number: 10-2011-0134711, 2011, South Korea.

I. K. Kim, **Cluster Node Control Method and Internet Protocol Private Branch Exchange**. Patent Number:10-2010-0136393, 2010, South Korea.

I. K. Kim, **Local Survival Node Management Method for IP PBX**. Patent Number:10-2009-0128849, 2009, South Korea.

I. K. Kim et al., **Grid Resource Management System and Method**. Patent Number:10-0833534, 2008, South Korea.

I. K. Kim et al., **Location-Based Service Management Device and Method**. Patent Number:10-0771155, 2007, South Korea.

Classes Taught

2025 Spring	CSCI 4730/6730 Operating Systems
2024 Fall	CSCI 4730 Operating Systems for Undergrads
2024 Spring	CSCI 4795/6795 Cloud Computing
2023 Fall	CSCI 4730/6730 Operating Systems, CSCI 8795 Advanced Cloud Computing
2023 Spring	CSCI 4795/6795 Cloud Computing
2022 Fall	CSCI 8795 Advanced Cloud Computing
2022 Spring	CSCI 4795/6795 Cloud Computing
2021 Fall	CSCI 4730/6730 Operating Systems, CSCI 8795 Advanced Cloud Computing
2021 Spring	CSCI 4795/6795 Cloud Computing
2020 Fall	CSCI 8795 Advanced Cloud Computing
2020 Spring	CSCI 4795/6795 Cloud Computing
2019 Fall	CSCI 8795 Advanced Cloud Computing
2019 Spring	CSCI 4795/6795 Cloud Computing
2018 Fall	CSCI 8000 Advanced Special Topics in Computer Science

Services

2024	**Track Co-Chair:** Algorithm and Software Track, IEEE Cloud Submit 2024
2018-present	**TPC Member:** IEEE/ACM CCGRID, IEEE CLOUD, ACM/IEEE IoTDI, IEEE IC2E, IEEE EDGE, IEEE/ACM UCC, IEEE CloudCom, IEEE/ACM BDCAT, IEEE ICFEC, IEEE Cloud Submit, ACM SNTA@HPDC
2019	**Publicity Chair:** SNTA@HPDC 2019
2013-present	**Reviewer:** IEEE IWQoS, IEEE Big Data, IEEE NAS, ACM HPDC, AI-Science, IEEE Trans. Parallel and Distributed Systems, IEEE Trans. Services Computing, IEEE Trans. Cloud Computing, ACM Computing Surveys, ACM Trans. Sensor Networks, ACM Trans. on Modeling and Performance Evaluation of Computing Systems, Future Generation Computing Systems (Elsevier), Journal of Parallel and Distributed Computing (Elsevier), Computer Networks (Elsevier), Computing (Springer), Journal of Grid Computing (Springer), Journal of Cloud Computing (Springer), Journal of Big Data (Springer), Automated Software Engineering (Springer), Software: Practice and Experience (Wiley), etc.

Miscellaneous and Awards

2024	Best Paper Award, IEEE EDGE 2024
2022 – 2024	Student Career Success Influencer Award, UGA Career Center
2018	Best Student Paper Runner-Up, IEEE CLOUD 2018
2006	Brain Korea 21 (BK-21) Scholarship, Korea Research Foundation
2005, 2006	Graduate Research Scholarship, Inha University Graduate School of Engineering

Past Professional Experience

Summer 2016	**Research Intern**
	IBM T.J. Watson Research Center, Yorktown Heights, NY, USA
2007-2012	**Software Research Engineer**
	Ericsson-LG Enterprise, South Korea
2001-2004	**Software Development Engineer**
	Pandora TV, South Korea