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In Kee Kim

Research Interests

Interested in cloud computing, distributed systems, data center computing, big data systems, IoT/Edge, and computer systems research for large-scale machine learning.

Academic Employment

Aug 2018 – **Assistant Professor – Computer Science**
The University of Georgia, Athens, GA, USA

Education

May 2018 **Ph.D. in Computer Science**, *University of Virginia, Charlottesville, VA, USA*
Advisor Marty Humphrey
Thesis Proactive Resource Provisioning to Ensure Predictable End-to-End Performance for Cloud Applications.

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 (16 Total, 1 Journal, 11 Conferences, 4 Workshops)

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 Candidate**, *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*, Industry Track, 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%*

GeoBigData'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 Big Data in the Geosciences Workshop*, 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'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. In *SIMULATION: Transactions of The Society for Modeling and Simulation International*, Vol. 83, Issue 7, pp.529-548, July, 2007.

MDC'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'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.

Patents

I. K. Kim et al., **Managing Idle and Active Servers in Cloud Data Centers**. Filed for U.S. Patent, Jan, 2017.

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.

Miscellaneous

2013-present Reviewer: IEEE IWQoS, IEEE CLOUD, IEEE Big Data, IEEE NAS, ACM HPDC, AI-Science, FGCS, etc.

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

Software Release

PICS Public IaaS Cloud Simulator

GitHub `https://github.com/ik2sb/PICS`

Project Page `http://www.cs.virginia.edu/~ik2sb/PICS/`