Sangmin Lee

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Department of Computer Science
University of Texas at Austin
1 University Station C0500
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Research Interest

Distributed Systems, Operating Systems, Computer Networks

Education

UNIVERSITY OF TEXAS, AUSTIN Austin, TX
Ph.D student in Computer Science, August 2007 - Present
Advisor: Prof. Mike Dahlin

UNIVERSITY OF CALIFORNIA, SAN DIEGO La Jolla, CA
Master of Science degree in Computer Science and Engineering, 2007
Thesis: Harnessing Memory Redundancy in Virtual Machines
Advisor: Prof. Amin Vahdat

SEOUL NATIONAL UNIVERSITY Seoul, S.Korea
Bachelor of Science degree in Computer Science and Engineering, 2005

Professional Experience

UT Austin Laboratory for Advanced Systems Research Austin, TX
Graduate Research

- Designing a peer-to-peer replication system that enforces causal consistency. Our protocol provides fork-causal consistency in p2p system. The protocol also can be adapted in centralized system providing fork-linearizability like SUNDR. We implement and evaluate this protocol on top of PRACTI replication system.
- Designing a general framework that can be used to make various types of systems practically usable Byzantine Fault Tolerant system. We evaluate our system by building BFT Hadoop Distributed File System and Zookeeper and by demonstrating they incur very small overhead such that they can be used in real world deployments.

UCSD CSE Systems and Networking Group La Jolla, CA
Graduate Research(September 2006 to June 2007)

- Designed and implemented sub-page level memory sharing within and across virtual machines and in-memory page compression as well as traditional content-based page sharing in the Xen virtual machine monitor (appeared in OSDI 08)

SNU Multimedia and Mobile Communication Laboratory Seoul, S.Korea
Undergraduate Research(Spring 2005)

- Research on the quality of surveillance and sensing intensity in sensor networks (proposed discrete control over quality of surveillance) and energy efficient broadcasting in wireless ad hoc networks with multi-rate capability (using Qualnet network simulator)

SystemBase Co., Ltd Seoul, S.Korea
Software Engineer(March 2001 to February 2004)

- Developed many parts of VoIP gateways such as porting Linux to Motorola MPC-855T, developing device drivers for several DSP chips and VoIP applications

Department of Computer Science, UT Austin Austin, TX
Teaching Assistant

- CS380L Advanced Operating System, Fall 2008
- CS315 Algorithms and Data Structures, Spring 2009

Publications

UpRight Cluster Services. Allen Clement, Manos Kapritsos, Sangmin Lee, Yang Wang, Lorenzo Alvisi, Mike Dahlin and Taylor Riche. Preceedings of the 22nd ACM Symposium on Operating Systems Principles.

Difference Engine: Harnessing Memory Redundancy in Virtual Machines. Diwaker Gupta, Sangmin Lee, Michal Vrable, Stefan Savage, Alex C. Snoeren, George Varghese, Geoffrey M. Voelker and Amin Vahdat. Proceedings of the 8th USENIX Symposium on Operating Systems Design and Implementation. (Best Paper Award)

Difference Engine: Harnessing Memory Redundancy in Virtual Machines. Sangmin Lee. MS Thesis, The University of California at San Diego.

Awards and Honors

Jay Lepreau Best Paper Award OSDI 2008

Difference Engine: Harnessing Memory Redundancy in Virtual Machines.

OSDI Student Grant Dec 2008.

UT Student Travel Grant Dec 2008.

UT Microelectronics and Computer Development Fellowship Aug. 2007-Aug. 2011.

Guaranteed four-year support.

UT College of Natural Sciences Deans Excellence Award Aug. 2007.

Candidates must rank within the top 10% of all students in their respective disciplines.