

HYOGI SIM

Dept. of Computer Science, Virginia Tech
2202 Kraft Drive
Blacksburg, VA 24060
(412) 925 - 0322
hyogi@vt.edu

Objective: Graduate Research Intern Position

RESEARCH INTERESTS

Building a large scale storage systems using heterogeneous devices such as DRAM, HDD, and SSD.
General topics on operating systems and storage systems.

EDUCATION

Ph.D., Computer Science, Virginia Tech, Blacksburg, VA
- Advisor: Dr. Ali R. Butt

M.S., Electronics and Computer Engineering, Hanyang University, Seoul, S. Korea, Feb 2008
- Advisor: Dr. Jaehyuk Cha, Dr. Sooyong Kang
- Thesis: A study of performance impact of merging storage layers on Flash-based DBMS

B.S., Urban Planning, Hanyang University, Seoul, S. Korea, Feb. 2005

RESEARCH EXPERIENCES

Deploying SSDs in HPC systems

Finding an optimal methodology to place node-local SSDs in HPC systems
- 2011-present, Virginia Tech

Managing Multimedia Data for Contents Servers with Hybrid Storage

Developed a program which analyzes contents server log files and evaluates content priorities based on popularity (Linux, Windows Media Server)
Developed a prototype file system for storage class memory device (Linux Kernel)
- 2007-2009, Database Lab., Hanyang University
- The Basic Research Program of KOSEF, the Korea Science & Engineering Foundation

Design of a NAND Flash Memory based File System Supporting Transaction and Record Structure

Developed a framework to identify FTL mapping schemes of NAND Flash memory storage devices (Linux)
Developed a storage system which directly manages NAND Flash memory (Linux, WiSS, ARM-based embedded board)
- 2006-2008, Database Lab., Hanyang University
- The Basic Research Program of KOSEF, the Korea Science & Engineering Foundation

Construction of a Protein Function Database

Developed a GUI frontend program that verifies protein information (Windows, SQLServer, Delphi)
- 2006-2008, Database Lab., Hanyang University
- The Research Program of Functional Proteomics Center, S. Korea

WORK EXPERIENCES

Oak Ridge National Laboratory

Research Intern, Integrating emerging storage technologies to HPC storage stack.
- Jan-Aug, 2013

Pitapat Mobile, S. Korea

Developed a social marketing application runs at Facebook. (C#, Javascript, HTML, PHP, SQL Server, MySQL, Amazon EC2)

- Jan-June, 2011

Dept. of English Education, Hanyang University

Developed an online-survey web application. (PHP, MySQL)

- Feb 2010, Aug 2009

- National Research Project on English Co-teaching

Metabuild co., S. Korea

Developed a lane recognition system for self-driving vehicles

- Dec 2008

- Linux, C, ARM-based embedded board

TEACHING EXPERIENCES**Computer Organization II**

- Graduate Teaching Assistant, Dept. of Computer Science, Virginia Tech

- Spring 2012, Fall 2011

File Structure

- Graduate Teaching Assistant, Division of Computer Science and Engineering, Hanyang University

- Spring 2009, Fall 2007

Data Structures

- Graduate Teaching Assistant, Division of Computer Science and Engineering, Hanyang University

- Spring 2007

Object Oriented Programming

- Graduate Teaching Assistant, Dept. of Computer Science Education, Hanyang University

- Spring 2005

PUBLICATIONS**2009**

- Hyogi Sim, Hoyoung Jung, Sungmin Park, Sooyong Kang, Jaehyuk Cha, *Identifying the FTL Mapping Scheme for USB Flash Devices*, The 4th International Conference on Convergence Technology and Information Convergence, CTIC 2009, Oct. 12
- Sooyong Kang, Sungmin Park, Hoyoung Jung, Hyogi Sim, Jaehyuk Cha, *Performance Trade-offs in Using NVRAM Write Buffer for Flash Memory-based Storage Devices*, IEEE Transactions on Computers, Vol. 58, Issue 6 (Jun. 2009) Pages 744-758

2008

- Hoyoung Jung, Hyogi Sim, Sungmin Park, Sooyong Kang, Jaehyuk Cha, *LRU-WSR: Integration of LRU and Writes Sequence Reordering for Flash Memory*, IEEE Transactions on Consumer Electronics, Volume 54, Issue 3 (Aug. 2008)
- Sungmin Park, Hoyoung Jung, Hyogi Sim, Sooyong Kang, Jaehyuk Cha, *Using Non-Volatile RAM as a Write Buffer for NAND Flash Memory-based Storage Devices*, 2008 IEEE International Symposium on Modeling, Analysis & Simulation of Computer & Telecommunication Systems, MASCOTS 2008, Sept 8-10, Baltimore, MD
- Sungmin Park, Hoyoung Jung, Hyogi Sim, Sooyong Kang, Jaehyuk Cha, *Write Buffer-aware Address Mapping for NAND Flash Memory Devices*, 2008 IEEE International Symposium on Modeling, Analysis & Simulation of Computer & Telecommunication Systems, MASCOTS 2008, Sept 8-10, Baltimore, MD

2007

- Hoyoung Jung, Kyunghoon Yoon, Hyogi Sim, Sungmin Park, Sooyong Kang, Jaehyuk Cha, *LIRS-WSR: Integration of LIRS and Write Sequence Reordering for Flash Memory*, The 2007 International Conference on Computational Science and Its Applications, ICCSA LNCS 2007, Aug. 29

COURSES

- Multiprocessor Programming, Virginia Tech, Fall 2012
- Research Method in CS, Virginia Tech, Fall 2012
- Advanced Parallel Computation, Virginia Tech, Spring 2011
- Operating Systems, Virginia Tech, Fall 2011

AWARDS & SCHOLARSHIPS

- Graduate Research Assistantship, Virginia Tech, Fall 2012
- Graduate Teaching Assistantship, Virginia Tech, Spring 2012
- Graduate Teaching Assistantship, Virginia Tech, Fall 2011
- BK21 (Brain Korea 21) Scholarship, Hanyang University, 2009
- A Half-Fee Tuition Scholarship, Hanyang University, 2005

TECHNICAL SKILLS

- Linux system/kernel programming, GTK+ GUI programming, Web programming
- Programming Languages: C, C++, Python, PHP, JAVA, C#, BASH, Javascript, HTML
- Databases: PostgreSQL, MySQL, SQLite, SQL Server
- Tools: GCC, gdb, vim, Glade, Eclipse, Visual Studio