Taesoo Kim

Contact Information

Room 32-G978
32 Vassar Street
Cambridge
MA 02139, USA

Tel: (+1) 617-794-5290
E-mail: taesoo@mit.edu
Web: http://taesoo.org
Academic Web: http://pdos.csail.mit.edu/~taesoo

Research Interests

OS	Security Models, Multicore, Parallel/Distributed System, Linux/Windows Kernel
Security	Exploit/Rootkit/Malware Analysis, Practical Attack/Defense
Language	Auditing, Static/Dynamic Analysis, Functional Languages, Compiler

Education

Massachusetts Institute of Technology, Cambridge, Massachusetts, USA

Graduate Student (since Sept. 2009)
Parallel and Distributed Operating System (PDOS/CSS Group), CSAIL

- GPA: 4.8/5.0
- Advisor: Prof. Nickolai Zeldovich

Korea Advanced Institute of Science and Technology, Daejeon, South Korea

Bachelor of Science, August, 2009
Computer Science (first major), Electrical Engineering (second major)

- GPA: 4.10/4.30 (97.77%, 177 credits)
- CS Major GPA: 4.21/4.30, EE Major GPA: 4.23/4.30
- Top rank in CS Dept. and Summa Cum Laude

Scholarships

2009.9 ~	Samsung Scholarship (for 5 years)
2003.3 ~2008.9	Korea Presidential Science Scholarship (for 4 years)
2004.3 ~2006.6	Global Leader Scholarship (for 2.5 years)
Student Grants	SOSP 2009, PyCon 2010, Usenix Security 2010

Awards

URP Excellent Award, Wheelchair Control with EEG Brain Signals, 2009.2
KAIST Computing Festival, Automatic Control of RC Car, Gold Medal, 2005.9
Facial Expression Robot, National Science Council Republic of China, Third Prize, 2004.6
The 4th International Robot Olympiad, Beijing, IROC, Technical Excellence Prize, 2002.11
The 3rd International Robot Olympiad, Hong Kong, IROC, First Winner Prize, 2001.11
Korea Student Invention Exhibition, "For Presenter" - Remote Controller for PowerPoint, 2001.8

Experience

Microsoft Research, Redmond, Washington USA
Internship, eXtreme Computing Group June, 2010 ~ September, 2010

- Design and implement a new defense mechanism (called *Stealthmem*) against cache side channel attacks among virtual machines in the cloud, especially the HyperV hypervisor of the Azure.
- Marcus Peinado, Architect, MSR

MIT, Cambridge, Massachusetts USA January, 2010

- Improve the performance of Beehive, new FPGA platform for designing multicore architecture, by implementing RWLock and barrier with VHDL.
- PDOS, MIT

Republic of Korea Army, Seoul, South Korea June, 2006 ~ June, 2008

- Serve as a national Army (Information Agent) for two years after completing my junior year

KIAST, Daejeon, South Korea
Individual Research September, 2005 ~ December, 2005
- Implement a spinlock profiler on the SMP Linux kernel
- Prof. Joonwon Lee

NEXVI, Daejeon, South Korea July, 2004 ~ August, 2004
- Design (circuit) and implement (firmware) ARM based embedded board from the bottom for *Pinpad* of *Nonghyup* corp, which was widely deployed into all branches in South Korea. I mainly designed the secure communication between Pinpad and computer, and also designed audio codec and display circuit without using expensive devices by using passive components instead.

Jahangirnagar University, Dhaka, Bangladesh January, 2004 ~ February, 2004
- Volunteer to help Bangladesh to construct network infrastructure including routers, proxy servers and intranet to maximize the utilization of 2Mbps satellite Internet connection. Korea Agency for Digital Opportunity (KADO) supported our volunteer works for two months.

Opensource

gtklookup, December, 2009 ~
- Emacs major mode, which is series of "lookup" mode that I developed for documentation lookup. This parses gtk html documentation in the *http://www.gtk.org/documentation.html* website.
- *http://github.com/tsgates/gtklookup*

cclookup, June, 2009 ~
- Emacs major mode to search/lookup c++ reference manual in the *http://cppreference.com* website.
- *http://github.com/tsgates/cclookup*

pylookup, July, 2009 ~
- Emacs major mode to support python reference manual, which is accessible online at *http://doc.python.org*. This project includes general Sphinx parser and framework for document searching in emacs.
- *http://github.com/tsgates/pylookup*

git-emacs, March, 2008 ~
- Emacs major mode to support git, which is well-known for Linux SCM, with easy and convenience. Since I opened the source code, many users actively contribute the project.
- *http://github.com/tsgates/git-emacs*

django-html-mode, December, 2007
- Emacs major mode displaying django html template, which is one of famous web framework written with python in emacs.
- *http://files.taesoo.org/django-html-mode/django-html-mode.el*

Publications

StealthMem: System-Level Protection Against Cache-Based Side Channel Attacks in the Cloud.
Taesoo Kim, Marcus Peinado, and Gloria Mainar-Ruiz.
In *Proceedings of the 21st Usenix Security Symposium,*
Bellevue, WA, August 2012.

Intrusion Recovery Using Selective Re-execution.
Taesoo Kim, Xi Wang, Nickolai Zeldovich, and M. Frans Kaashoek.
In *Proceedings of the 9th Symposium on Operating Systems Design and Implementation*,

Vancouver, Canada, October 2010.

Making Linux Protection Mechanisms Egalitarian with UserFS.
Taesoo Kim and Nickolai Zeldovich.
In *Proceedings of the 19th Usenix Security Symposium*,
Washington, DC, August 2010.

Simulation of Human locomotion Using A Musculoskeletal Model.
Taesoo Kim and Sungho Jo.
In *International Conference on Control, Automation and Systems*,
Seoul, South Korea, October 2008.

Press Releases

2005.11	"I want to study further for my dream", KAIST Newspaper
2004 238 edition	"Humanist falling in love with robots", Naeilshot (journal of university students)
2010.09.29	"MIT researchers tout network intrusion recovery system", Network World