MINSUNG JANG

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CAREER HIGHLIGHTS

- System software design and development on embedded Linux systems & Xen
- Nine published research papers and Six U.S. patents
- Intel Ph.D. Fellowship (2013-2014) nominee by the Georgia Institute of Technology
- Two awards for excellent research from Samsung Electronics

RESEARCH INTERESTS

- Seamless integration of resources across sensors, mobile devices, private and/or public clouds via virtualizations
- Composition of heterogeneous capabilities between clouds and edge devices to augment applications' functionality
- Resource management and workload offloading for sensing and analytics
- Access control for sharing resources via social tie and context awareness

EDUCATION

Ph.D. in computer science, Advisor: Professor Karsten Schwan   August 2008–present
Georgia Institute of Technology Atlanta, GA
Master of Science, Yonsei University, Seoul, Korea   March 1998–February 2000
Bachelor of Science, Yonsei University, Seoul, Korea   March 1994–February 1998

PROFESSIONAL EXPERIENCE

Graduate Research Assistant, Georgia Institute of Technology, Atlanta, GA (August 2008-present)
Research Intern, Intel Labs, Hillsboro, OR (May 2012-August 2012)
- Efficient Offloading Framework for battery-operated Mobile devices (awarded *Intel Kudos* at CountryFair '12)
- Mentor: Dr. Omesh Tickoo, Manager: Dr. Raj Yavatkar (Intel Fellow) & Dr. Ravi Iyer

Research Intern, Nokia Research Center, Palo Alto, CA (May 2011–August 2011)
- Design and implementation of a framework for seamless workload migration among devices (with a patent application)
- Mentor: Dr. Adhyas Avasthi, Manager: Dr. Quinn Jacobson

Research Intern, IBM Almaden Research Center, San Jose, CA (May 2010–August 2010)
- Optimization of subscription cost for the cloud storage via smart I/O Orchestration
- Mentor: Dr. Sandip Agarwala, Manager: Sandeep Gopisetty (IBM Distinguished Engineer)

Research Staff, Advanced Institute of Technology in Samsung Electronics, Korea (January 2008–July 2008)
- Introduction of power management into the Xen virtual machine monitor:
  - Developed new power management method on mobile virtualization environment

Senior Research Engineer, Software Laboratories in Samsung Electronics, Korea (August 2003– December 2007)
- Development of software mobility solution based on virtualization
  - Designed the architecture of the project and main developer of virtual I/O framework of the project
  - Announced at the demonstration session of IEEE-CCNC08
- Lead and development of reliable filesystem (Klotho) for embedded Linux
  - Introduced a personal video recorder with Klotho at CE Show 2007 by Samsung Electronics
  - Development of reliable and portable multimedia filesystem (XPRESS)
- Designed and implemented the I/O architecture of XPRESS file system (announced in Ottawa Linux Symposium 2006)

Engineer, SindoRicoh R&D Center, Seoul, Korea, (October 1999–July 2003)
- Development of embedded Linux for printing system - Implemented a higher resolution timer for real-time workload

TEACHING EXPERIENCE

Graduate Teaching Assistant, Advanced Operating System, (Jan 2012–May 2012), Georgia Institute of Technology
Part-time Instructor, Advance Linux Kernel, (80 hours, 2004–2006), Samsung Advanced Tech. Training Inst.
Graduate Teaching Assistant, Introduction to Computer Graphics, (March 1999–July 1999), Yonsei University

SKILLS

- Linux Kernel & Xen-related developments in C(C++)/Python
- Product Development: Smart phones, Personal Video Recorders, Digital TVs, and Laser Printers

PUBLICATIONS

- Minsung Jang, HyunJong Lee, Ketan Bhardwaj, Karsten Schwan, vSensor: Toward Sensor-rich Mobile Applications, *Sensors to Cloud Architectures Workshop (SCAW-2015), Held in conjunction with HPCA-21, San Francisco*, California, USA, February 2015. (To appear)
- Minsung Jang, Karsten Schwan, Ketan Bhardwaj, Ada Gavrilovska, and Adhyas Avasthi, Personal Clouds: Sharing and Integrating Networked Resources to Enhance End User Experiences, *IEEE International Conference on Computer Communications (IEEE INFOCOM) 2014*, Toronto, Canada, April 2014.(Acceptance rate: 19.4%)
- Minsung Jang, Karsten Schwan, Clouds4Users: From Isolated Devices to Rich Device Platforms, short paper, *3rd Workshop on SoCs, Heterogeneous Architectures and Workloads (SHAW-3), Held in conjunction with HPCA-18*, New Orleans, Louisiana, Feb 2012.
- Minsung Jang, Karsten Schwan, STRATUS: Assembling Virtual Platforms from Device Clouds, *IEEE CLOUD 2011*, Washington DC, July 2011. (Acceptance rate: 18%)
- SungKwan Heo, Minsung Jang, Sangbum Suh, Software Mobility for Personalized Computing Environments on Removable Storage, *IEEE CCNC 2008*, Las Vegas, January 2008.
- Minsung Jang, Understanding Embedded OS for Samsung Electronics New Employees, *Samsung Advanced Technology Training Institute*, Suwon, Korea 2005.
- Jooyoung Hwang, Jaekyoung Bae, Alexander Kirnasov, Minsung Jang, Hayeong Kim, A Reliable and Portable Multimedia File system, *Linux Symposium*, Ottawa, Canada, July 2006.
- Minsung Jang, Jongsoo Lee, Genetic algorithm based design of transonic airfoils using Euler equations, *AIAA/ASME/ASCE/AHS/ASC SDM Conference*, AIAA-2000-1584, Atlanta, GA, Apr. 2000.
- Jongsoo Lee, Minsung Jang, Seungjin Kim, Doyoung Kim, Method of Soft-Computing for Global Optimization, *Computational Structural Engineering Institute of Korea Conference*, Apr. 2000.
- Minsung Jang, A New File system Development Method for Linux, *Real-time Embedded World Magazine (written in Korean)*, Oct. 2006~ Jan. 2007

Invited Talks

- AT&T Labs Research, *Virtual Platforms: A New System-level Execution Environment for the Clients,* Bedminister, NJ, January 2015.
- IBM Almaden Research Center, *Clients at the Edge and the Cloud: Integrated Functionality Servicing End User Needs*, Almaden, CA, October 2014.
- Center for Experimental Research in Computer Systems, *System-level Infrastructure of Multilayered Computing Environments for Home and Neighborhood*, Atlanta, GA, April 2014.
- Center for Experimental Research in Computer Systems, *Embedded Distributed Platforms*, Atlanta, GA, March 2012.

U.S. PATENTS

US20140032787, US20090271605, US20090216916, US20090241110, US20070226219, US20070188440

STANDARDIZATION/OPEN SOURCE ACTIVITIES & PROFESSIONAL SERVICE

- **IEEE Micro Magazine,** an external reviewer, IEEE Computer Society, August 2014
- **XenARM,** Submitted the ARM Versatile Board support (2009), now a part of the official mainline XenARM
- **Consumer Electronics Linux Forum (CELF),** Architecture/Power Management Work Group (2004-2006)

REFERENCES: Available upon request