

# Jung Gyu Park

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## SUMMARY

An experienced and capable software engineer with a demonstrated ability to produce high quality software solutions. Solid leadership and teamwork skill backed by strong technical ability obtained from academia and industry. Experienced software systems from operating system kernel up to mobile software platform. Proven ability to quickly learn new systems. Excellent analytical and problem solving skill. Strong written and verbal communication.

## EMPLOYMENT HISTORY

### **Present ~ 2013.6, RESMED**

Full-time senior software engineer for medical devices

- Developed patient data management/communication module in C++

### **2010.5 ~ 2013.3, General Dynamics Broadband (Open Kernel Labs, Sydney/Australia)**

Full-time senior software engineer. Open Kernel Labs was acquired by General Dynamics in August 2012, and is now General Dynamics Broadband

- Developed core functionality of the OS kernel on ARM processors (ARMv5-v7)  
: also implemented user library (IPC, pthread, etc)
- Developed a virtualization platform (hypervisor) for Linux/Android/RTOS  
: dual persona (personal/business domain) system with LG Android smartphones  
: high-assurance framework for defense-grade security. Sponsored by US government
- Worked on many different SoC platform and implemented device drivers for cache, timer, serial, gpio, framebuffer, etc.
- Implemented client/server testing framework and build system using Python.
- Platform: LG Optimus 3D Max/L9 smartphone, Qualcomm, ARMv5-7, TI OMAP4

### **2002.9 ~ 2010.4, Samsung Electronics (Suwon/Korea)**

Full-time senior software engineer and technical lead. All aspects of smartphone software development including software platform, framework/library, toolchain, and performance optimization.

2006 ~ 2010, Software optimization and toolchain for multicore systems (ARM SMP and IBM Cell chip). CPU/GPU multithread programming with C/C++/Linux

- Designed and implemented gcc-based parallelizing compiler (OpenMP) for IBM Cell processor (CPU + GPU) and ARM SMP. Automatic performance tuning.
- Carried out optimizations for multithreaded SW (i.e., H.264 codec)
- Developed verification tools for multithread or memory bugs (data race, deadlock, etc)

2002 ~ 2006, Software platform (C++ and Java) and framework for mobile phones. Java/C/C++ with Windows/VisualStudio/Cygwin. Object-oriented design.

- Implemented C++ library/framework  
: threading, event, component model, utility, network (TCP/IP/HTTP), etc

- : now bada platform (<http://www.bada.com>) for Samsung Wave smartphone
- Ported and optimized Java virtual machine and library (CLDC/MIDP) for mobile phone
- : graphics algorithm, record database, network layer
- : products for Sprint PCS USA

### **1995.3 ~ 2002.8, Korea University (Seoul/Korea)**

Full-time Graduate Student. My research interest was how programming language can be used to solve the issues in the software engineering (i.e., optimization)

2000 ~ 2002: Ph. D Thesis

- A study on the specialization and optimization of computer programs in Java language

1997 ~ 2002: Part Time Lecturer

- Teaching first year courses in computer science

1999 ~ 2000: Disk Array Device Management Object Modeling Prototype

- Associate researcher at University of Idaho
- Sponsored by Hewlett Packard
- Implemented a prototype software system for managing HP RAID

1998: Software Reuse using Open Implementation and Aspect Orient Programming

- Carried out a research on the theory of software reuse by Open Implementation Analysis and Design and Aspect Oriented Programming

1996 ~ 1998: WEB based 3D Modeling and Rendering system

- Sponsored by Ministry of Information and Communication, Republic of Korea
- Implemented a geometric 3D modeling and rendering system which runs on a web browser

## **EDUCATION**

2002, Ph. D. in Computer Science, Korea University, Seoul, Korea

1997, M.S. in Computer Science, Korea University, Seoul, Korea

1995, B.S. in Computer Science, Korea University, Seoul, Korea

## **TECHNICAL SKILLS**

- Large, Complex, Multithread/Multicore Software Design and Optimization
- Low level OS kernel development: Linux, OKL4, Virtualization, ARMv5-v7, OMAP3-4, IBM Cell BE, device driver and SoC porting
- Strong C/C++/STL, Python, Java (Ph. D thesis), Javascript
- Software platform development: C++ Mobile Software Platform, Java Virtual Machine, Android
- High performance library/framework design and implementation, design patterns, object-oriented design with UML
- Compiler design, porting, and optimization (gcc, OpenMP, Java)
- Mobile device (smartphone), Embedded system, NoSQL (i.e., mongodb, hobby)

## **SELECTED PUBLICATIONS**

- Jung Gyu Park, et al. "Compiler Optimization for the Cell Architecture". In *Proceedings of the Fifth Workshop on Optimization for DSP and Embedded Systems (ODES-5)*, in conjunction with *CGO-5*, March 2007.
- Jun Sung Park, Jung Gyu Park, Hyo Jung Song, "Implementation of OpenMP Work-Sharing on the Cell Broadband Engine Architecture", In *Proceedings of IWOMP 2007*, June 2007.
- Jung Gyu Park, et al. "A Real-Time Media Framework for Asymmetric MPSoC". In *Proceedings of the Ninth IEEE International Symposium on Object and Component Real-Time Distributed Computing*, IEEE Press, April 2006.
- Jung Gyu Park and Myong-Soon Park. "Using Indexed Data Structures for Program Specialization". In *Proceedings of the ACM SIGPLAN ASIAN symposium on Partial evaluation and semantics-based program manipulation (PEPM)*, ACM Press, September 2002.
- Jung Gyu Park, Arthur H. Lee, "Specializing the Java Object Serialization Using Partial Evaluation for a Faster RMI", *ICPADS 2001*, pp 451-458, IEEE Press, June 2001.

## PATENTS

System and method for shortening class loading process in Java program

- Korea, P0493893
- USA, US 2004/0168163 A1

System and method for shortening compiling time of byte codes in Java program

- Korea, P0506522
- USA, US 2004/0168162 A1

Apparatus and method for controlling parallel programming

- USA, US 2011/0072420 A1

Apparatus and method for providing visual interface for information of error generated in multithread testing

- USA, US 2011/0138236 A1

## REFEREES

Hans Jang: RESMED (Sydney, Australia)

Mobile: 0433-757-067      Email: pinetr2e@gmail.com

Anjani Verma: Open Kernel Labs (Sydney, Australia)

Mobile: 0424-224-983      Email: anjaniv.it@gmail.com