Hyuck Yoo

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Software Engineer with 1+ experience in developing TmaxOS. Advanced skills in Linux Security Modules (LSM), firmware, installation of OS, and CMake build system. Deep knowledge of OS and experience developing applications, OS daemons, and services. Love to investigate large open-source platforms like Linux kernel, Android framework.

Professional Experience

Operating System Developer / TmaxOS, Korea — Feb. 2018 - PRESENT

- Select and apply SELinux to Tmax OS as a Linux Security Module, and make new labels, type enforcing rules, process transition rules for our own applications and daemons.
- For supporting Active Directory (AD) service of Microsoft, analysis the protocol and make compatible components including Group Policy Object (GPO) processing.
- Make an ISO image of Tmax OS and test installation process in various hardware configurations including desktop, notebook, server, virtual environment, and PXE.
- Find some bugs in UEFI firmware which can be broken by GRUB2, and fix the way of using GRUB2 in Tmax OS.
- Fix CMake build system to solve dependency problems and make cross-compiling possible to make a binary for arm/i386/x86-64.
- Make a compatible layer in Tmax OS for windows Dynamic Link Libraries (DLLs) including secur32, advapi32, kernel32, ntdll by using API monitor, OllyDbg.

Mentor, Mentoring Program for undergraduates / KAIST Consulting Center — Feb. 2016 – Dec. 2017

- Counseling students who are not well adapted to school, receives an academic probation.
- Do anything, and almost everything students wants to do including teaching, comforting, debating, and eating

Academic Experience

Developing Remote Resource Sharing between Mobile Devices / KAIST — 2015 – 2016

- Make a list of resources in Android and divide them into two groups, software and hardware resources.
- Through analysis how to use resources in Android, we found out applications use binder when they use resources.
- Expand the binder mechanism in framework, not kernel because of reliability.
- Applications can use remote software resources with almost same as local speed and use hardware resources at an average speed of 53% in case of camera.

System call Bottleneck Analysis / KAIST — 2015

- Analysis Linux kernel's system call and investigate the point of the bottleneck.
- Insert timestamps into the system call's functions and decompose target function into multiple parts and test recursively.
- Choose fork and write. Found out the reasons: page-table copy (fork), ext4's journaling (write)

File System Scheduler for Hard Disk Drive / KAIST — 2014

- Hospitals store magnificent amount of data in their own disk. However, they save the data with original Linux file system scheduler so that they can't be accessed efficiently.
- Medical data's characteristics are that once they are written, they are not changed and will be accessed sequentially by person or disease.
- Make a new system call for write medical data which accepts parameters like personal information or disease, and save the data into the proper place.

Education

Ph.D candidate, Computer Science — Oct. 2015 - Feb. 2018

Korea Advanced Institute of Science and Techology (KAIST), DAEJEON, KOREA.
Scholar: National Scholarship 2015 – 2018
*Publication: Oh, S., **Yoo, H.**, Jeong, D. R., Bui, D. H., Shin, I. (2017, June). Mobile plus. Multi-device mobile platform for cross-device functionality sharing. In Proceedings of the 15th Annual International Conference on Mobile Systems, Applications, and Services (pp. 332-344). ACM.*

Master of Science, Computer Science — Sep. 2013 - Sep. 2015

Korea Advanced Institute of Science and Techology (KAIST), DAEJEON, KOREA.
Scholar: National Scholarship 2013 – 2015
Paper: **YOO. H.** (2015). Developing Remote Resource Sharing Framework on Android Platform (Unpublished master dissertation). KAIST, KOREA.

Bachelor of Engineering, Computer Engineering — Mar. 2009 - Aug. 2013

Korea University, SEOUL, KOREA.
Scholar: National Science & Technology Scholarship KOREA STUDENT AID FOUNDATION 2009 - 2011