Jaebaek **Seo**

Software Engineer · Systems Security Expert

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About Me

Jaebaek Seo is currently a Ph.D. student in the Department of Computer Science at KAIST (Korea Advanced Instituite of Science and Technology) in Daejeon, Korea. Jaebaek Seo receives his B.S./M.S. from the Department of Computer Science at KAIST. He has strong interests in design and implementation of operating system (See **FlexDroid** project below) and security system based on compiler and operating system (See **SGX-Shield** project below).

Educations

KAIST(Korea Advanced Institute of Science and Technology) *Daejeon, S.Korea*

Ph.D. in Computer Science *Mar. 2013 - PRESENT*

- Got a KFAS (Korea Foundation for Advanced Studies) Scholarship.

KAIST(Korea Advanced Institute of Science and Technology) *Daejeon, S.Korea*

M.S. in Computer Science *Mar. 2011 - Feb. 2013*

KAIST(Korea Advanced Institute of Science and Technology) *Daejeon, S.Korea*

B.S. in Computer Science *Mar. 2006 - Aug. 2010*

Publications

SGX-Shield: Enabling Address Space Layout Randomization for SGX Programs

Jaebaek Seo, Byoungyoung Lee, Sungmin Kim, Ming-Wei Shih, Insik Shin, Dongsu Han, and Taesoo Kim,

To be appeared in proceedings of NDSS 2017, Acceptance ratio: 68/423=16.1%

- SGX-Shield is a system (compiler toolchains and runtime support) to enable ASLR (Address Space Layout Randomization) for SGX programs.
- Jaebaek Seo alone implemented all compiler toolchains including LLVM backends, static linker and dynamic loader/linker and runtime support including libraries and memory layout.
- `https://github.com/jaebaek/SGX-Shield`

FLEXDROID: Enforcing In-App Privilege Separation in Android

Jaebaek Seo, Daehyeok Kim, Donghyun Cho, Taesoo Kim, Insik Shin,

Proceedings of NDSS 2016, Acceptance ratio: 60/389=15.4%

- FlexDroid is an extension of Android permission system to support in-app privilege separation.
- Jaebaek Seo alone engineered memory permission part in kernel, Dalvik JVM, Android framework, dynamic loader/linker.
- `https://github.com/flexdroid`

Optimal Real-Time Scheduling on Two-Type Heterogeneous Multicore Platforms

Hoon Sung Chwa, Jaebaek Seo, Jinkyu Lee, Insik Shin,

Proceedings of the 36th IEEE Real-Time Systems Symposium (RTSS '15)

- Jaebaek Seo contributed to prove mathmatical theorems.
- This work is published in Proceedings of the 36th IEEE Real-Time Systems Symposium (RTSS 2015, Acceptance ratio: 34/151=22.5%)
- Jaebaek Seo is the second author of the paper.

Experiences

Systems Software and Security Lab, Georgia Tech *Atlanta, GA, US*

Visiting Student *Mar. 2016 - Apr. 2016*

- Worked with prof. Taesoo Kim and Byoungyoung Lee (Byoungyoung Lee is currently a professor in Purdue university).
- Led SGX-Shield project (See **SGX-Shield** project below).

Microsoft Research Asia (MSRA) *Beijing, China*

Research Intern *Sept. 2011 - Feb. 2012*

- Joined Moible And Sensor System (MASS) group.
- Resolved scalability problem in cloud gaming system (Game Sharing project).
- Game Sharing project is mainly related to GPU performance improvement with the knowledge of graphics applications.

Google Korea *Seoul, S.Korea*

Software Engineer Intern *Aug. 2010 - Nov. 2010*

- Joined Blogger team.
- Participated in Mobile BlogSpot project.
- The current mobile BlogSpot web page is the result of this project.

Teaching Experiences

Undergraduate Operating System course TA in KAIST from 2011 to 2015

Teaching Assistant

- Helped students to conduct PintOS (`https://web.stanford.edu/class/cs140/projects/pintos/pintos.html`) project.

References

Insik Shin, Professor in KAIST *ishin@kaist.ac.kr*

Byoungyoung Lee, Professor in Purdue University *byoungyoung@purdue.edu*

Donghyun Cho, Software Engineer in Google *donghyun@google.com*

Minhyun Kim, Software Engineer in Google *kimminhyun@google.com*