Taemin Park

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PROFILE

I'm an enthusiastic systems software researcher, and my research focuses on systems software security. I have developed diverse software hardening and exploit techniques and contributed to vulnerability analysis. Also, I have expertise in the compiler, developing several static and dynamic analysis techniques and engineering various script engines and Just-in-time (JIT) compilers.

EDUCATION

University of California, Irvine — **Irvine, CA**
Doctor of Philosophy, Computer Science GPA: 3.95/4.0 — *June 2020*

Seoul National University — **Seoul, Korea**
Master of Science, Electrical Engineering and Computer Science GPA: 3.52/4.3 — *February 2012*

Hanyang University — **Seoul, Korea**
Bachelor of Science, Computer Engineering GPA: 4.15/4.5 — *February 2010*

EXPERIENCE

IBM Thomas J. Watson Research Center — **Yorktown Heights, NY**
Research Intern — *July 2019 - September 2019*

- Designed and implemented a runtime binary debloating framework for cloud micro-services. Developed a dynamic analysis technique using the Intel Pin tool. Developed a binary hardening technique through radare2.

Secure Systems Lab — **Irvine, CA**
Graduate Research Assistant — *April 2015 - June 2020*

- Discovered security holes and developed exploits in JavaScript, Python, and Lua.
- Developed defense mechanisms in JavaScript, Python, and Lua. Engineered the internals of the interpreter, garbage collection, and Just-in-time (JIT) compiler. Developed static and dynamic analysis techniques through an LLVM instrumentation.
- Participated in developing a fast and flexible sanitization framework via run-time partitioning. Conducted vulnerability analysis and evaluated the framework with address sanitizer (ASAN) and undefined behavior sanitization (UBSAN).
- Participated in the "DARPA Cyber Fault-tolerant Attack Recovery" project. Implemented software hardening techniques through an LLVM instrumentation

Korea Telecom Institute of Convergence Technology — **Seoul, Korea**
Research engineer — *January 2012 - July 2015*

- Developed a new authentication system. Implemented a cryptographic algorithm, authentication protocol and IOS user interface in Objective-C
- Developed a cloud-based security appliance farm. Designed and implemented the overall system and a client application.

Social and Computer Network Lab — **Seoul, Korea**
Graduate Research Assistant — *March 2010 - February 2012*

- Designed routing schemes for multi-hop wireless networks
- Researched social networks in massive multi-player online role-playing games. Analyzed the social interaction and traffic patterns in the games.

ADDITIONAL

- Conference: **T. Park**, K. Dhondt, D. Gens, Y. Na, S. Volckaert and M. Franz "NoJITsu: Locking Down JavaScript Engines" *26th Annual Network and Distributed System Security Symposium (NDSS)*, February 2020
- Journal: **T. Park**, J. Lee, D. Kim C. Kim "Multi-hop transmission and routing with hierarchical modulation." *EURASIP Journal on Wireless Communications and Networking*, 2012(1):240, 2012
  (For the entire list, please check Google Scholar)
- Professional Activity: **T. Park** "NoJITsu: Locking Down JavaScript Engines", Blackhat USA 2020
- Programming Languages: C/C++, Objective-C, LLVM, Lua, Java, JavaScript, Python, MFC, COM, ATL, MATLAB, UNIX shell scripting