Zeus Technology Development Team Profile

***Changwoo Pyo**,* a Chief Technology Developer, received Ph.D. in Computer Science from University of Illinois at Urbana-Champaign in 1989. He was a research fellow in US Army Corps of Engineers in 1990.   He has been a professor of the Department of Computer Engineering, Hongik University in Seoul, Korea since 1991. During the period, he served Hongik University as the Chief of Information and Computing Office of Hongik University. He is currently a member of the board of trustees, Korea Institute of Information Scientists and Engineers. His research interest includes the trustworthiness of programs, tools for program security, and program analysis and transformation. He had implemented the first version of program counter encoding compiler. Also, he is the inventor of the function pointer encoding using runtime linking information and the Dynamic Reencryption of Return Addresses.

***Gyungho Lee**,* a Principal Technology Developer, was a professor of computer science and engineering at the Korea University, Seoul, Korea. Before joining the Korea University in 2008, he was a professor of Electrical and Computer Engineering in University of Illinois–Chicago. His current research and teaching interests are in computer architecture, working on architectural support and code optimization for software security.His industrial experience includes leading the efforts of developing a CPU business based on the Digital's Alpha 21264 in 1998 and developing a shared-bus symmetric multiprocessor SSM7000 from 1991 to 1992, both for Samsung Electronics. His academic research experience includes participating in a parallelizing compiler project (Parafrase) and a shared memory multiprocessor project (Cedar) at the University of Illinois at Urbana-Champaign. From 1992 to 1996, he had led the DICE project at the University of Minnesota, which invented bus-based cache-only memory multiprocessor (U.S. patent no. 5,692,149), self-invalidation (U.S. patent no. 5,835,950) and non-inclusive memory access mechanism for distributed shared-memory multiprocessors (U.S. patent no. 5,937,431). From 2009 to 2012, he led a trusted computing project for developing a C/C++ compiler based on his idea of program counter encoding (U.S. patent no. 8583939 B2) for secure software execution. He was elected a fellow of the American Association for the Advancement of Science (AAAS) in 2006 and named a "University Scholar" by the University of Illinois in 2007. He is the originator of "*Program Counter Encoding*," which is the foundational idea of Zeus technology.

***Kyungtae Kim**,* a Sr. Technology Developer, is a graduate student of Ph.D. program in Dept. of Computer Science at Purdue University. He received his M.S. and B.S. degrees from Hongik University, Republic of Korea in 2011 and 2009, respectively. He was a researcher at Research Institute of Science and Technology in Hongik University from 2012 to 2014. His research interests lie in software reliability, software security and program analysis.Kyungtae Kim has implemented the code pointer encoding for functions defined in source programs and shared libraries

***Hyungyu Lee**,* a Sr. Technology Developer, received Ph.D. in computer engineering from Hongik University in 2021. He received his BS and MS in computer engineering from Hongik University in 2014 and 2016 respectively. His research interests include software security, program optimization, and program analysis. He has designed and implemented DRORA in LLVM compiler infrastructure.

Robert C. Seacord, a Technology Development Advisor, is a Technical Director at NCC Group where he performs operationally relevant security research, secure coding training, and consulting services for secure software development, security assessment, and secure development lifecycle improvement. Robert is also an adjunct professor in the School of Computer Science and the Information Networking Institute at Carnegie Mellon University. He is the author of seven books, including Effective C: An Introduction to Professional C Programming (No Starch Press, 2020), The CERT C Coding Standard, Second Edition (Addison-Wesley, 2014) Secure Coding in C and C++, Second Edition (Addison-Wesley, 2013), and Java Coding Guidelines: 75 Recommendations for Reliable and Secure Programs (Addison-Wesley, 2014). He has also published more than 40 papers on software security, component-based software engineering, Web-based system design, legacy-system modernization, component repositories and search engines, and user interface design and development. Robert has been teaching secure coding in C and C++ to private industry, academia, and government since 2005. He started programming professionally for IBM in 1982, working in communications and operating system software, processor development, and software engineering and also has worked at the X Consortium, where he developed and maintained code for the Common Desktop Environment and the X Window System. Robert is on the Advisory Board for the Linux Foundation is an expert at the ISO/IEC JTC1/SC22/WG14 international standardization working group for the C programming language.

Alex G. Lee, a Chief Technology Manager, is a technology innovation professional with nearly 30 years of experiences and expertise in high technology such as software, telecommunications, information technology, semiconductor electronics as a researcher, university professor, government officer, business executive, and legal expert in the US and S. Korea. Alex has worked with leading companies and research institutions such as Samsung, Korea Telecom, MIC Radio Research Laboratory, Boston University, and Georgia Tech. He earned Ph.D. in physics from the Johns Hopkins University and J.D. from the Suffolk University Law School. He attended MIT Sloan School of Management Executive Program for strategy and innovation certification. He registered to practice before the US Patent and Trademark Office. He is a Certified Licensing Professional (CLP) and a New York State attorney.