

Gwangmu Lee

Software Engineer @ Swiss National Computing Centre (CSCS)

E-mail: iss300 (at) gmail.com Home: <https://gwangmu.github.io>

Professional Interest

Software Security

Vulnerability Detection
Kernel Security

Software Engineering

Dynamic/Static Software Testing
Code Analysis & Optimization

High-performance Computing

Workload Containerization
Container Engine Development

Education

Seoul National University (SNU)

Seoul, South Korea.

Ph.D. in Electrical and Computer Engineering (Advisor: Byoungyoung Lee)

Mar 2017 - Feb 2022

Pohang University of Science and Technology (POSTECH)

Pohang, South Korea.

M.S. in Computer Science and Engineering (Advisor: Jangwoo Kim)

Sep 2014 - Feb 2017

Pohang University of Science and Technology (POSTECH)

Pohang, South Korea.

B.S. in Physics / Computer Science and Engineering (Double Major)

Mar 2010 - Aug 2014

Work Experience

Swiss National Computing Centre (CSCS)

Lugano, Switzerland.

Software Engineer (Container Engine and Framework)

Apr 2024 - Now

École Polytechnique Fédérale de Lausanne (EPFL)

Lausanne, Switzerland.

Post-doc Researcher (Software Security), HexHive

Apr 2022 - Mar 2024

Korea Institute for Advanced Study (KIAS)

Seoul, South Korea.

Research Intern (Astrophysics)

Jul 2013 - Aug 2013

Publications

Reflecta: Reflection-based Scalable and Semantic Scripting Language Fuzzing

The 20th ACM ASIA Conference on Computer and Communications Security (ASIACCS), August 2025.

Chibin Zhang, [Gwangmu Lee](#), Qiang Liu, and Mathias Payer.

A Comparative Quality Metric for Untargeted Fuzzing with Logic State Coverage

arXiv (cs.SE), September 2024.

[Gwangmu Lee](#)

SyzRisk: A Change-Pattern-Based Continuous Kernel Regression Fuzzer

The 19th ACM ASIA Conference on Computer and Communications Security (ASIACCS), July 2024.

Gwangmu Lee, Duo Xu, Solmaz Salimi, Byoungyoung Lee, and Mathias Payer

FuzzOrigin: Detecting UXSS vulnerabilities in Browsers through Origin Fuzzing

The 31st USENIX Security Symposium (USENIX), August 2022.

Sunwoo Kim, Young Min Kim, Jaewon Hur, Suhwan Song, Gwangmu Lee, and Byoungyoung Lee

MundoFuzz: Hypervisor Fuzzing with Statistical Coverage Testing and Grammar Inference

The 31st USENIX Security Symposium (USENIX), August 2022.

Cheolwoo Myung, Gwangmu Lee, and Byoungyoung Lee

Constraint-guided Directed Greybox Fuzzing

The 30th USENIX Security Symposium (USENIX), August 2021.

Gwangmu Lee, Woochul Shim, and Byoungyoung Lee

DynaMix: Dynamic Mobile Device Integration for Efficient Cross-device Resource Sharing

2018 USENIX Annual Technical Conference (ATC), July 2018.

Dongju Chae, Joonsung Kim, Gwangmu Lee, HanJun Kim, Kyung-Ah Chang, Hyogun Lee, and Jangwoo Kim.

Flexon: A Cost-Effective Digital Neuron for Flexible Spiking Neural Network Simulation

The 45th International Symposium on Computer Architecture (ISCA), June 2018.

Dayeol Lee, Gwangmu Lee, Sunghwa Lee, Dongup Kwon, Youngsok Kim, and Jangwoo Kim.

———— Co-first ————

Architecture-aware Automatic Computation Offload for Native Applications

The 48th Annual IEEE/ACM International Symposium on Microarchitecture (MICRO), December 2015.

Gwangmu Lee, Hyunjoon Park, Seonyeong Heo, Kyung-Ah Chang, Hyogun Lee, and HanJun Kim

Selected Projects

Automatic Patch Backporting for the Linux Kernel

Research Project (HexHive), EPFL, Project Lead

May 2023 - Present

Investigating Clang Static Analyzer's False-positives and False-negatives

Master's thesis (Cosme Jordan), Supervisor

Mar 2023 - Jun 2023

Porting IR Pass for Address Sanitizer [MEDS, NDSS'18] to LLVM 12

National Security Research Institute (NSR) × Computer Security Lab. (CompSec), SNU, Researcher

Jun 2020 - Nov 2020

Optimizing Shader Compiler for ARM VLIW-Based Mobile GPU

Samsung Electronics × High-performance Computing Lab. (HPC), POSTECH, Researcher

Nov 2014 - Jun 2015

POSTECH-KAIST Science War Official AI Game (Diplomatics)

College game development group (G-POS), POSTECH, Lead Programmer

Jun 2012 - Sep 2012

Recognition

26th Graduate Student Scholarship

Korea Foundation for Advanced Study (KFAS)

Mar 2015 - Feb 2020

National Science and Engineering Scholarship

Korea Student Aid Foundation (KOSAF)

Mar 2010 - Feb 2014

Teaching Experience

Introduction to Programming , Dongji High School, Instructor	Winter 2014
Introduction to Programming , Dongji High School, Instructor	Summer 2015
Object Oriented Programming , POSTECH, Teaching Assistant	Fall 2015
Computer Architecture , POSTECH, Teaching Assistant	Fall 2016
Computer Organization , Seoul National University, Teaching Assistant	Spring 2017
Digital Logic Design , Seoul National University, Teaching Assistant	Fall 2017
Cyber Security and Blockchain , Seoul National University, Teaching Assistant	Fall 2019

Professional Services

<i>Invited Talk</i>	The Chronicle of Software Vulnerability Detection Kyung Hee University. Slides available at https://gwangmu.github.io/experience/ .	Jun 2023
<i>Reviewer</i>	IEEE Transactions on Dependable and Secure Computing (TDSC) IEEE Transactions on Software Engineering (TSE)	2023 2023
<i>Prog. Committee</i>	Intl. Symposium on Research in Attacks, Intrusions and Defense (RAID)	2024

Skills & Etc

<i>Language</i>	Korean (native), English (semi-fluent), Italian (baby)
<i>Programming Language</i>	C (expert), Python (expert), C++ (advanced), Go (advanced), Bash (advanced), Java (proficient), Verilog (proficient), Scala (proficient), Rust (familiar), OCaml (familiar)
<i>Tool and Software</i>	AFL (expert), Syzkaller (expert), LLVM IR (advanced), Clang Static Analyzer (advanced), Linux CLI (advanced), Linux Kernel Codebase (advanced), LLVM Frontend (advanced), Docker (proficient), Terraform (proficient), Nomad (proficient), QEMU (familiar), Qt (familiar)
<i>Personal Repo. (Selected)</i>	Minimal C REPL Extreme minimum REPL (Read-evaluation-prompt-loop) for C with Clang and Python, link . English-to-Hangul Transliterator Mini-project that transliterates English sentences to augmented Hangul sentences, link . “Mini Excel” Educational C++ Project Semester project for the Bachelor’s course “Object Oriented Programming” (Fall 2015), link .