

# Gwangmu Lee / Post-doc Researcher

School of Computer and Communication Sciences (IC)  
École Polytechnique Fédérale de Lausanne (EPFL)  
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## Research Interest

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### Vulnerability Detection

Directed Greybox Fuzzing  
Kernel Fuzzing

### Compiler Optimization

Code Offloading  
Runtime Performance Estimation

### Hardware Design

Accelerator Design  
HDL Language Design

## Education

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**Seoul National University** \_\_\_\_\_ MAR 2017 - FEB 2022

Seoul, South Korea.

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

**Pohang University of Science and Technology (POSTECH)** \_\_\_\_\_ SEP 2014 - FEB 2017

Pohang, South Korea.

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

**Pohang University of Science and Technology (POSTECH)** \_\_\_\_\_ MAR 2010 - AUG 2014

Pohang, South Korea.

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

## Work Experience

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**École Polytechnique Fédérale de Lausanne (EPFL)** \_\_\_\_\_ APR 2022 - Current

Lausanne, Switzerland.

Post-doc Researcher, HexHive

## Publications

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### MundoFuzz: Hypervisor Fuzzing with Statistical Coverage Testing and Grammar Inference

The 31st USENIX Security Symposium (USENIX), August 2022. [to appear]

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

## Projects

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**2012 POSTECH-KAIST Science War Official AI Game (Diplomatics)** \_\_\_\_\_ JUN 2012 - SEP 2012

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

**C/C++ Game Development Framework (Jokebox)** \_\_\_\_\_ SEP 2013 - DEC 2013

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

**Optimizing Shader Compiler for ARM Mobile GPU** \_\_\_\_\_ NOV 2014 - JUN 2015

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

**High-performance Mobile Cloud System** \_\_\_\_\_ SEP 2014 - DEC 2015

Samsung Electronics × Compiler Research Lab. (CoreLab), POSTECH, Researcher

**High-performance Neural Network Accelerator** \_\_\_\_\_ MAR 2017 - SEP 2018

Samsung Research × High-performance Computing System Lab. (HPCS), SNU, Researcher

**Fuzzing Framework for Static Analysis Verification** \_\_\_\_\_ MAR 2019 - MAR 2020

Samsung Research × Computer Security Lab. (CompSec), SNU, Researcher

**MEDS (NDSS'18) for LLVM 12** \_\_\_\_\_ JUN 2020 - NOV 2020

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

**Fuzzing System for Android Systems and Mobile Applications** \_\_\_\_\_ MAY 2021 - APR 2022

Samsung Electronics × Computer Security Lab. (CompSec), SNU, Researcher *(expected)*

## Recognition

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**26th Graduate Student Scholarship** \_\_\_\_\_ MAR 2015 - FEB 2020

Korea Foundation for Advanced Study(KFAS)

**National Science and Engineering Scholarship** \_\_\_\_\_ MAR 2010 - FEB 2014

Korea Student Aid Foundation(KOSAF)

## Teaching Experience

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**Introduction to Programming**, Dongji Highschool, Instructor \_\_\_\_\_ Winter 2014  
**Introduction to Programming**, Dongji Highschool, 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