

Jaeyoung Chung

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github.com/J-jaeyoung | [CompSec at SNU](#)

Research Interests

My research focuses on Linux and Android kernel security. I am especially interested in concurrency bugs, including scalable discovery, deterministic reproduction, and exploitability analysis. I also work on GPU driver security, analyzing emerging attack surfaces and designing practical defenses. My goal is to make systems more secure by systematically discovering unknown bugs and building defenses that prevent their exploitation.

Education

- **Seoul National University (SNU), Seoul, South Korea (Mar 2024 – Present)**
Integrated M.S./Ph.D. Student, Department of Electrical and Computer Engineering
Advisor: Prof. Byoungyoung Lee, CompSec Lab
- **Seoul National University (SNU), Seoul, South Korea (Mar 2018 – Feb 2024)**
B.S. in Computer Science and Engineering
GPA: 3.99 / 4.30

Publications

* *indicates equal contribution / co-first author.*

- **DMGuard: Safeguarding Kernels from Physical Page Use-After-Free Vulnerabilities**
Juhee Kim*, Jaeyoung Chung*, Dae R. Jeong, and Byoungyoung Lee
USENIX Security Symposium (Security) 2026
 - Mitigates page-table mismanagement bugs (i.e., physical-page use-after-free) emerging in Android kernel and Mobile GPU drivers.
- **GHost in the SHELL: A GPU-to-Host Memory Attack and Its Mitigation**
Sihyun Roh, Woohyuk Choi, Jaeyoung Chung, Yoochan Lee, Suhwan Song, and Byoungyoung Lee
IEEE Symposium on Security and Privacy (SP) 2026
 - Demonstrates that memory-corruption bugs in CUDA GPU kernels can compromise host processes (PyTorch, Chrome); proposes an LLVM-based mitigation.
- **TikTag: Breaking ARM's Memory Tagging Extension with Speculative Execution**
Juhee Kim, Jinbum Park, Sihyun Roh, Jaeyoung Chung, Youngjoo Lee, Taesoo Kim, and Byoungyoung Lee
IEEE Symposium on Security and Privacy (SP) 2025
 - Breaks ARM MTE in Chrome and the Linux kernel via a side channel.

Awards & Honors

- **Google kernelCTF LTS/COS 0-day Winner**
[exp448: CVE-2026-46242](#) on `lts-6.12.67` and `cos-121-18867.294.100`.
- **Ranked 10th in KrCERT/KISA Hall of Fame, 2024**
9 KVE-assigned RCE vulnerabilities in Korean image-viewer software.

Projects

- **Finding, Reproducing, and Exploiting Linux Kernel Concurrency Bugs**
Developed end-to-end expertise in Linux kernel concurrency bugs: discovering them, reproducing them deterministically, and building reliable exploits against real-world kernels.

- **Efficient and Scalable GPU Driver Fuzzing**

Built an efficient, scalable fuzzer for mobile GPU drivers, overcoming Syzkaller's inefficiency and its dependence on physical hardware.

- Result: [CVE-2025-0819](#) in the Arm Mali GPU driver.

- **Strengthening ARM MTE's Probabilistic Defense**

Designed a practical defense that extends MTE's 4-bit memory tag to 8 bits, lowering the probability of bypassing a tag check from 1/16 to 1/256 while keeping performance overhead minimal.