

Ritik Roongta

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EDUCATION

NYU Tandon

Ph.D. in Computer Science, GPA: 3.9/4.0

New York City, USA

May '26

IIT Bombay

B.Tech in Computer Science, GPA: 8.15/10.0

Mumbai, India

May '21

PUBLICATIONS

Drifuzz: Harvesting Bugs in Device Drivers from Golden Seeds

USENIX Security, Aug '22

- Implemented a framework for concolic fuzzing PCI device drivers (e.g., network interface card)
- Discovered and patched **12 bugs** and obtained **2 CVEs** in the Linux driver code
- Designed test-beds using deprecated versions of linux to compare with legacy softwares like Agamotto

RESEARCH EXPERIENCE AND INTERNSHIPS

Benchmarking Privacy-preserving Extensions

New York University, USA

PSAL | *Guide: Rachel Greenstadt*

Apr '22–Present

- Devise a multi-parameter benchmark for testing the privacy-preserving extensions for their privacy practices
- Deploy static and dynamic testing techniques in order to increase the robustness of the benchmarking
- Use **Sentiment analysis** and **Keyword Extraction** to study the user perception of the usability of extensions

TRACKS: TRimming Augments Container Kernel Security

New York University, USA

Mess Lab | *Guide: Brendan Dolan Gavitt*

Mar '22–Present

- Devise an LLVM compiled Linux Kernel applying state-of-the-art kernel mitigations to the popular paths
- Evaluate the security vs performance tradeoff of the kernel mitigations like **CPI**, **CFI**, etc.
- Integrate the prototype with modern-day container services like Docker to speed up their secure deployment

KANF - Kernel-assisted network fuzzer

University of California, Santa Barbara, USA

Seclab | *Guide: Giovanni Vigna & Christopher Kruegel*

Apr '20–Nov '20

- Interleaved the Linux Kernel with (**AFL**) using kernel driver modules and network programs
- Created a pool of **10,000+** debian network packages for testing, finding vulnerabilities and reporting **CVEs**
- Evolved fool-proof testing environment for kernel modules using **QEMU** and ubuntu kernel images

SKILLS

- **Software Skills:** Git, MATLAB, MySQL, AutoCAD, CMake, \LaTeX
- **Hacking Tools:** Kali Linux, Metasploit Framework, Xerosploit, Fluxion

LANGUAGES

- **C/C++, Python:** Proficient
- **Bash, Java, Assembly:** Intermediate
- **Java:** Intermediate

TEACHING

Course Assistant

NYU Tandon, USA

Application Security | *CSE Department*

Jan '22 –May '22

- Conducted doubt-solving and concept-building sessions for a class of over 100 students in a remote setup
- Covered real-world attacks around buffer overflows, **OWASP**, etc. along with Kubernetes deployed checks