SIMONE ROMANO

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PROFILE

Cybersecurity Engineering master's student focused on Linux security, vulnerability research, digital forensics, and secure systems. Experienced in turning research questions into reproducible experiments, from Linux kernel exploitability analysis to embedded-system emulation and security-oriented machine learning. Incoming master's thesis intern at Rakuten Mobile in Tokyo in July 2026.

EDUCATION

Politecnico di Torino *2024 – Present*
M.Sc. in Cybersecurity Engineering Turin, Italy
Master's thesis work on Linux runtime security and eBPF-based monitoring, in collaboration with Rakuten Mobile.

Università degli Studi del Sannio *2019 – June 2024*
B.Sc. in Computer Engineering, final grade: 100/110 Benevento, Italy
Thesis: *Design Solutions and Their Impact on Smart-Contract Execution Costs*.
https://zenodo.org/records/20776825

EXPERIENCE & LEADERSHIP

Rakuten Mobile Starting July 2026
Incoming Master's Thesis Intern *Tokyo, Japan*

- Selected for an internship connected to the master's thesis, focused on Linux runtime security and eBPF-based system monitoring.

IEEE-Eta Kappa Nu, Mu Nu Chapter 2025 – 2026
Events Area Member *Politecnico di Torino*

- Supported the organization of technical and professional-development events, including logistics, team coordination, budgeting, and sponsor engagement.
- IEEE-HKN Honor Society member, Italy Section; membership valid through December 2026.

AWARDS & RECOGNITION

1st place, 2025	IEEE-HKN Global Hackathon, team SpaghettiOverflow, representing the Mu Nu Chapter. https://hkn.ieee.org/alumni-news/2026/02/engineering-a-shared-future-the-2025-ieee-hkn-global-hackathon
57th / 2,000 teams	Reply AI Agents Challenge 2026. https://challenges.reply.com/challenges/ai-agent/home/
88th / 2,000 teams	Reply Hack The Code Challenge 2025, team FARES. https://challenges.reply.com/challenges/hack-the-code-standard/how-it-works/
Honor Society	IEEE-Eta Kappa Nu member, Mu Nu Chapter, Politecnico di Torino.

LANGUAGES & CERTIFICATIONS

Italian: Native **English:** Cambridge B2 First, credential ID 862380AXK
https://www.cambridgeenglish.org/exams-and-tests/qualifications/first/
Additional training: GNU/Linux Advanced, Politecnico di Torino

SELECTED PROJECTS & RESEARCH

Linux eBPF Vulnerability Research 2026
Independent Security Research *Politecnico di Torino*

- Reproduced four Linux eBPF verifier vulnerabilities in isolated Buildroot/QEMU environments and traced each issue from the incorrect verifier decision to its concrete security impact.
- Developed two controlled local privilege-escalation chains for CVE-2023-39191 and CVE-2024-58100; documented assumptions, hardening constraints, and reliability boundaries.

Vesuvius Runtime Security Monitor 2026 – Present
Master's Thesis Project *Rakuten Mobile collaboration*

- Developing the process-monitoring path of an eBPF-based Linux security tool, covering process creation, execution, and termination, with structured event delivery to Go userspace.
- Validated BTF, CO-RE, BPF LSM, ring-buffer, and stack capabilities on Rocky Linux 8.10 rather than relying only on its reported upstream kernel version.

SSH Shell Attack Classification 2025
Machine Learning for Security *Four-person team*

- Analyzed 230,000 honeypot sessions and 90,026 encoded shell scripts; compared supervised models, clustering, and BERT for multi-label attacker-intent classification while documenting class-imbalance limits.

Secure Timeout System for NXP S32K358EVB 2024 – 2025
Embedded Systems *Five-person team*

- Extended QEMU with an automotive-board model, integrated FreeRTOS, UART, interrupts, and periodic timers, and produced a reproducible build and GDB debugging workflow.

Shattered Bytes 2026
Digital Forensics & Learning Design *Individual project*

- Designed and developed a six-part browser game that teaches manual data carving, evidence validation, uncertainty reporting, and defensible forensic reasoning.

Smart-Contract Design and Gas Costs 2024
Bachelor's Thesis Research *Individual project*

- Studied 1,010 Ethereum functions and 18 architectural patterns; six patterns showed a statistically significant association with higher execution costs using Fisher's exact test.

TECHNICAL SKILLS

Programming	C, C++, Python, Go, Java, Bash, Solidity, SQL
Security & systems	Linux, eBPF, vulnerability analysis, exploit development, digital forensics, network security, OpenSSL
Platforms & tools	Git, QEMU, Buildroot, FreeRTOS, GDB, LaTeX
Machine learning	scikit-learn, PyTorch, text classification, clustering, BERT