

Research topics	Dynamic Binary Analysis, Symbolic and Concolic Execution, Hybrid Fuzzing, Cybersecurity
Position (M/F)	Post-Doctoral / Research Engineer
Reference offer	SN/AF/Fuzz/102025
Research Department	Digital Security (SN)
Publication date	10/10/2025
Start date	ASAP
Duration	Fixed Term Contract up to 18 months

Description

The primary technical goal of this position is to participate in the maturation of EURECOM's research academic hybrid fuzzing tools. The core technology stack includes **SymQEMU**, **SymCC**, and **LibAFL/LibAFL-QEMU**. These tools facilitate **hybrid fuzzing** using **concolic execution** for incremental coverage and discovery of new program paths and vulnerabilities.

The Research Engineer will operate as a **low-level developer and CI/CD expert** focused on transitioning this research towards a reliable, high-performance, and flexible commercial prototype.

Key technical responsibilities will include:

- **Tool Maturation and Reliability (SymQEMU/SymCC):** Software development to enhance the performance, reliability, and flexibility of the fuzzing tools, addressing the additional development effort required for industrialization.
- **Regression Testing and Quality Assurance (QA):** Fixing issues, adding test cases, documentation and new examples and demos. Implement and enhance robust **Continuous Integration/Continuous Deployment (CI/CD)** environments and sophisticated regression test suites.
- **Concolic Engine Integrity:** Specifically address and prevent issues like the **silent concretization of values** within the concolic engine, to generate better test cases.
- **Performance Enhancement Integration:** Contribute to the **low-level integration of advanced performance technologies**, notably **Intel PT** (Processor Trace), into the LibAFL and SymQEMU frameworks to optimize execution analysis.
- **Industrial Integration Support:** Collaborate with partner companies with the goal to make SymQEMU accessible to non-experts (i.e., users without technical expertise in programming or DevSecOps) by supporting its optimized deployment.

Requirements

- **Education Level / Degree:** Engineering degree / Master's degree (BAC+5/6) or PhD in a related field.
- **Field / specialty:** Cybersecurity, System Security, Binary Analysis, or Low-Level Development, Rust.
- **Technologies:** Direct experience or motivation to learn fuzzing, symbolic execution, QEMU, or LibAFL is highly appreciated. Expertise in **low-level development, regression testing, and Continuous Integration/Continuous Deployment (CI/CD) environments** is crucial.
- **Other skills / specialties:** Ability to work in an international and multicultural research environment. Strong team spirit is sought.



Application

The application must include:

- Detailed curriculum,
- List of publications specifying the three most important publications, or links to software projects or reports.
- Motivation letter
- References if available.

Applications should be submitted by e-mail to secretariat@eurecom.fr with the reference: **SN/AF/Fuzz/102025**

About EURECOM

EURECOM is a major Engineering School and a Research Center in digital sciences founded in 1991 as a consortium in the international technology park of Sophia Antipolis. The IMT is a founding member of the GIE. Teaching and research activities are organized around 3 promising fields: digital security, communication systems and Data Science.

EURECOM has a staff of 190 (researchers and support teams) and welcomes 400 international students on the Campus Sophia Tech, the largest information science and technology campus of the region. EURECOM enjoys a privileged geographical environment on the French Riviera (Côte d'Azur), between sea and mountains, at the heart of a dynamic and multidisciplinary ecosystem that promotes high-level scientific and technological innovation.

Social advantages

- International and multicultural environment
- Attractive salary - Corporate saving plans
- Private retirement plan (executive, employer participation of 100%)
- Employee profit sharing policy
- Company health insurance (mutuelle) with high levels of guarantees for the whole family (employer participation of 60%)
- Restaurant vouchers (employer contribution of 60%)
- Corporate and Social Council (CSE)

EURECOM is one of Europe's leading engineering schools specializing in digital technologies. It is located in the heart of the Côte d'Azur, in Europe's Silicon Valley (Tech Park Sophia-Antipolis). EURECOM's research teams work in an international, multicultural environment.

EURECOM has a dynamic policy in terms of **inclusion and quality of life at work**. We are committed to diversity and give equal consideration to all applicants, without discrimination. Above all, we look for skills and team spirit.

All our positions are open to **people with disabilities**. EURECOM has set up a disability advisor to provide support and advice, organize accommodation and make positive commitments to personal integration.

As part of its **gender equality plan**, EURECOM encourages gender diversity within its teams. As part of our gender equality action plan, we encourage male applications for administrative positions, traditionally held by women, and female applications for IT and research positions, traditionally held by men.

EURECOM is taking positive action as part of its **CSR policy**. A CSR representative oversees EURECOM's CSR and energy transition policies (electric charging stations, solar panels, waste sorting, etc.).

Web site EURECOM: <https://www.eurecom.fr/fr/eurecom/presentation>

EURECOM in VIDEO: <https://www.youtube.com/watch?v=uIFcgNijnM>

Employee experience: <https://www.youtube.com/watch?v=BHv9zIduzuQ>