

HONORÉ CÉSAIRE MOUNAH

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SUMMARY

I am a PhD student in Computer Science (expected Dec 2025) with expertise in **operating systems, Linux kernel scheduling, performance optimization, and heterogeneous CPU architectures**. Skilled in **low-level systems programming** (C/C++), benchmarking, and prototyping secure and high-performance systems, I have strong experience in leading projects, communicating technical results, and collaborating across teams. Seeking roles as an R&D Engineer or a Solution Architect.

WORK EXPERIENCE

Ph.D. Researcher in Computer Science @ Inria Rennes

Dec. 2022 – Present

Topic: Understanding Linux Scheduling Bottlenecks

Supervisors: Prof. David Bromberg (University of Rennes), Dr. Julia Lawall (Inria Paris), Dr. Djob Mvondo (University of Rennes)

Optimizing Linux Kernel Networking (WireGuard VPN)

- Investigated performance bottlenecks in the WireGuard VPN module, identifying Execution Order Inversion (EoI) as the root cause of a **5× throughput drop**.
- Designed and implemented asynchronous kernel APIs (kernel threads, workqueues) to resolve the bottleneck.

Energy Efficiency of Heterogeneous CPUs

- Built an automated benchmarking framework to evaluate Intel heterogeneous CPUs (P-cores/E-cores) across DVFS governors and workload types.
- Delivered actionable insights for **scheduler design** and **CPU tuning**, balancing performance and energy efficiency.

Core responsibilities: End-to-end project management (design, prototyping, benchmarking), Linux kernel instrumentation, experimental automation, and dissemination (publications, conference talks, technical reports).

Research Intern @ IRISA Rennes

Jun. 2022 – Sept. 2022

Supervisors: Prof. David Bromberg, Dr. Djob Mvondo (University of Rennes)

Scalability Evaluation of WireGuard VPN

- Designed and executed large-scale experiments to test WireGuard under high-load scenarios.
- **Skills gained:** Experimental design, large-scale VPN deployment, automated benchmarking, data-driven performance analysis.

Network-based Stalkerware Detection

- Evaluated the effectiveness of **TinyCheck**, a network-based stalkerware detection tool, against commercial anti-malware solutions.

- Extended TinyCheck for deployment as a **Function-as-a-Service (FaaS)** on an OpenFaaS platform.
- **Skills gained:** Android automation and testing, FaaS deployment (OpenFaaS, OpenWhisk), network security evaluation.

EDUCATION

2022 - present PhD at **INRIA, University of Rennes, France**
2017 - 2022 Engineering Degree in Computer Science **National Advanced School of Engineering, Yaounde, Cameroon**

PUBLICATIONS

Mounah, Honore Cesaire et al. (2025). “The Impact of Kernel Asynchronous APIs on the Performance of a Kernel VPN”. In: *Proceedings of the 18th ACM International Systems and Storage Conference. SYSTOR '25*. Virtual, Israel: Association for Computing Machinery, pp. 167–173. ISBN: 9798400721199. DOI: [10.1145/3757347.3759133](https://doi.org/10.1145/3757347.3759133). URL: <https://doi.org/10.1145/3757347.3759133>.

SOFT SKILLS

- Communication
- Problem-solving
- Adaptability
- Teamwork & Collaboration
- Analytical mindset

TECHNICAL SKILLS

Low Level Programming Languages	C/C++, Go
Scripting Languages	Python, Bash, JavaScript
Systems & Infrastructure	Linux Kernel Development (scheduling, networking, drivers), Docker, Kubernetes
Performance & Optimization	Performance profiling (perf, ftrace, eBPF), benchmarking frameworks, scalability testing, memory optimization
Networking & Security	VPN technologies (WireGuard, OpenVPN), TCP/IP stack, network performance tuning, security analysis, traffic monitoring
Development Tools	Git, GDB, QEMU, FUSE, WebAssembly, automated testing frameworks, build systems (Make, CMake), CI/CD (GitHub Actions, Jenkins, Ansible)

LANGUAGES

- French (Native Language)
- English (Fluent in both speaking and writing)