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Location: Nantes, France

EDUCATION

Master Degree in Computer Systems & Signal processing

PROFESSIONAL EXPERIENCE

Research Engineer – PEPR Cloud Jan 2026 – Present
Nantes, France

- Building a **peer-to-peer segmented storage** system for edge and cloud nodes that avoids transferring data until it's actually needed, using **SIGSEGV-triggered lazy page-fault materialization** and parallel segmented fetch in place of bulk copies.
- Developing low-level system components in **C**: intercepting POSIX `send()`/`recv()`/`close()` via **LD_PRELOAD**, and manipulating memory mappings, file descriptors, and epoll-driven I/O paths.
- Investigating Linux internals VFS, page cache, virtual memory, socket interfaces to eliminate redundant payload transfers across multi-hop, multi-tier pipelines.
- Working with **Kubernetes networking**, CNI, **eBPF and Cilium**, exploring programmable datapaths, network observability, and container networking.

Research Engineer – Inria France Apr 2025 – Oct 2025
STACK Research Group

- Designed and built a **zero-copy**, **page-fault-driven** data system for multi-tier architectures, eliminating redundant payload transfers across intermediate forwarding nodes by swapping full data for lightweight descriptors.
- Built and benchmarked a multi-node HTTP forwarding pipeline (**C**, Mongoose) across bare-metal **Grid'5000** clusters, achieving **30% reduction in network bandwidth** and **fewer I/O operations** in distributed image and video workloads.

Backend Developer – Attraxia Aug 2024 – Mar 2025

- Developed authentication services using Spring Boot, implementing OTP, email verification, and token-based authentication.
- Built real-time communication features using WebSockets and Django Channels.
- Containerized applications with Docker and configured GitLab CI/CD pipelines.

Backend Developer – SellSabeel Sep 2023 – Mar 2024

- Developed a platform automating the deployment of Docker-based applications on AWS EC2.
- Automated server provisioning, SSH configuration, dependency installation, and Docker Compose deployments, reducing setup time to under 10 minutes.

System Engineer – LabLabee Apr 2022 – Sep 2022
Oran, Algeria

- Tested and validated containerized 4G, 5G, and IMS environments, verifying connectivity, service functionality, and performance KPIs.
- Contributed to migrating internal services from DigitalOcean to AWS.

SKILLS

Systems & Kernel: C, Linux Kernel, eBPF, XDP, DPDK
Infrastructure & Networking: Kubernetes, Cilium, Object Storage, Docker, Grid'5000