

# Ramy LAIB

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## SUMMARY

Engineer specialized in systems and networks with a passion for technological innovation, aiming to leverage my skills in Linux-based environments, backend development with Python and C, and high-performance computing technologies. Seeking a challenging position in a dynamic organization where I can contribute to impactful projects and continue to grow professionally.

## EXPERIENCE

**Full Stack Developer Intern**  
🌈 AdvanThink(isoft)

Feb 2024 - Aug 2024  
*Saint-Aubin, FR*

- Analyzed the existing system and designed a service-oriented architecture for batch execution, improving efficiency by 60%.
- Developed DevOps scripts for service configuration automation, reducing setup time by 50%.
- Completed a research thesis on optimizing software architecture using services and microservices.

## PROJECTS

### Smart Trash Can Design

- IoT solution for sorting medical waste with **85% accuracy**, using Arduino, ESP32, and **TensorFlowJS** for real-time AI processing.
- MQTT protocol** and **Node-RED** for lightweight and efficient integration and communication.
- Project available on [GitHub](#) for more details.

### Neural Network Implementation in C

- Development of custom neural network architectures in C for classification tasks.
- Implementation of random initialization for weights and biases, as well as the sigmoid activation function.
- Design of forward and backward propagation for supervised learning.

### Integrated Library Management System

- Design of a library management system that optimizes book search efficiency by 40%.
- Backend development in Python using Flask, with ProtoBUF for serialization and Celery for task scheduling.
- Management of a robust database of over 10,000 books, ensuring data integrity.

### Migration from OracleDB to MongoDB

- Migration of an Oracle database on Oracle Linux 8 to MongoDB, resulting in a 50% reduction in query response times.
- Development and execution of custom migration scripts to ensure a seamless transition without data loss.
- Implementation of MongoDB's document-oriented structure to enhance data scalability and performance.

### Resilient Campus Network Architecture

- Design and deployment of a resilient campus network optimized for high performance.
- Utilization of VMware for virtualization, Cumulus Linux for network management, and ACL firewalls for security.
- Integration of automation with Ansible and assurance of fault tolerance with LACP and MLAG, improving network availability.

### Security and Firewall on OpenBSD

- Administration of system and network security through the deployment of a Packet Filter firewall on OpenBSD.
- Assurance of robust protection against potential threats using proactive fault tolerance mechanisms.
- Integration of CARP and PFsync to synchronize firewall state tables across multiple nodes, enhancing network reliability.

### Data Analytics

- Advanced analytics project in Python, improving classification accuracy and predictive modeling by 20%.
- Utilization of advanced techniques such as clustering, canonical correlation analysis, and principal component analysis.
- Analysis of datasets containing over one million records using pandas and visual exploration with matplotlib.

## EDUCATION

**Master's Computer Systems and Networks**, [Université Paris-Saclay](#) 🇫🇷

2022-2024

Relevant Courses: Service-Oriented Architecture, High-Performance Computing (C, OMP, Pthread, MPI, CUDA), Systems and Network Administration, Database Management Systems, Operations Research, Data Science (Python).

**Master's Networks, Mobility, and Embedded Systems**,[U.M.M.T.O](#) 🇫🇷

2022

Relevant Courses: Network Security, Parallel Architectures and Distributed Systems (C, OMP, Pthread, MPI, CUDA), Mobile Networks, Embedded Systems Interfaces ,ARM assembly.

Winner of the Security module CTF.

**Bachelor's Computer Science: Computer Systems**, [U.M.M.T.O](#) 🇫🇷

2018-2021

Relevant Courses: Algorithms, Python, Java, C, Operating Systems, Information Systems Security ,Web Development ,Mobile Development ,ARM assembly. Member of the Computer Science Club.

## SKILLS & TALENTS

Programming Languages	C (HPC,ParralelProgramming), Python(scikit-learn,Flask,...), Java, JavaScript
Tools	Docker, Ansible, Git, Bash, VMware, VirtualBox ,Jenkins ,Kubernetes ,Terraform ,Grafana
Databases	OracleDB, MongoDB, SQL ,
Web Development	HTML,CSS,JavaScript,Flask, RESTful API ,ProtoBUF
Security	Metasploit, Nmap, Nessus ,ISO 2700x,Mehari
Networking	TCP/IP, OSI Model ,Wireshark ,AWS
Interpersonal Skills	Strong oral and written communication, Agile and Scrum methodologies ,JIRA , proficiency in LaTeX, Word, Excel, quick adaptation to new environments, sharp problem-solving skills

## EXTRACURRICULAR ACTIVITIES

| Leetcode and EulerProject for fun | Tolkien lore enthusiast | Cinema lover | SSIAP (student job) | Passionate about Technological Innovations