

# El Mahdi ARFAL

## Cloud Networking Engineer – Seeking an end of studies project – PFE internship

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### SUMMARY

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Engineering student at INPT, specializing in computer networking and cloud networking. Seeking an end-of-studies internship to apply and expand my skills in real-world projects.

### EDUCATION

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#### National Institute of Posts and Telecommunications - INPT

Rabat, Morocco

Smart Information and Communication Technology (SMART-ICT)

2023 – Expected 2026

- **Concentrations:** Computer Networking

### SKILLS

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**Programming:** Python, Bash

**Networking:** TCP/IP, OSI, LAN/WAN, Routing Protocols (OSPF, RIP, EIGRP,BGP), Switching & Security (VLAN, VTP, STP, Port Security), HSRP, ACLs, NAT, DHCP, DNS, IPv4/IPv6, QoS, Syslog, SNMP

**Cloud Networking (AWS):** VPC, Subnets, ACLs, Security Groups, NAT Gateways, Internet Gateways, VPC Peering, S3 Endpoints

**DevOps:** Terraform, AWS, GitHub Actions, Ansible

**Tools:** Git

**Languages:** Arabic, English, French

**Soft skills:** Problem-solving, Collaboration, Autonomous Learning, Rapid Adaptation

### EXPERIENCE

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#### Orange Business Maroc

Rabat, Morocco

Full-Stack Developer Intern

February 2025 – June 2025

- Collaborated in a development team with other interns to design and implement a malware detection platform.
- Developed both the backend and frontend, integrating data processing, model inference, and user interface components.
- Built RESTful APIs to manage malware data and detection results efficiently.
- Designed an intuitive web interface for real-time monitoring and analysis of malware samples.

### PROJECTS

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#### 5G Network Testbed with Network Slicing| Open5gs, UERANSIM, MongoDB, Bash Scripting

July 2025 – Ongoing

Final-Year Project – Full-Stack Network Engineer

- Designed and deployed a complete 5G network testbed across four Ubuntu Server 22.04 VMs using VMware, including Core C-Plane, Core U-Plane, gNB, and multiple UEs.
- Configured Open5GS for control and user planes, set up MongoDB subscriber databases, and implemented network slices meeting eMBB, URLLC, and mMTC requirements.
- Built and configured gNB and UE instances using UERANSIM, ensuring full end-to-end connectivity and real-time monitoring of network functions.
- Developed and automated scripts for system setup and service management.

#### Dual-VPC Cloud Infrastructure on AWS – Terraform Automation | AWS, Terraform

Personal Project

- Designed and deployed an isolated cloud environment with 2 VPCs, public/private subnets, ACLs ,Security Groups, Internet & NAT Gateways, VPC Peering, S3 Endpoints, and CloudWatch VPC Flow Logs.
- Fully automated infrastructure provisioning and management using Terraform, ensuring reproducibility and scalability.

#### Bank Network Infrastructure – Cisco Packet Tracer| Routing, Switching, Security

Personal Project

- Designed and implemented a multi-tier network architecture for 11 departments with full segmentation using subnets and VLANs.
- Configured dynamic routing (OSPF), redundancy protocols (HSRP, STP), and essential services (DHCP, DNS, NAT, Web/Mail/FTP).
- Simulated ISP connectivity and secured the network with SSH authentication, port security, and ACLs.