

ARFAL EL MAHDI

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

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PROFILE

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

National Institute of Posts and Telecommunications - INPT

Smart Information and Communication Technology (SMART-ICT)

Rabat, Morocco

2023 – Expected 2026

Classes Préparatoires des Grandes Écoles (CPGE)

Technologies et Sciences Industrielles (TSI)

Settat, Morocco

2021 – 2023

Lycée Technique Ibn Haytam

Science Technologiques Electriques (STE)

Ouarzazate, Morocco

2018 – 2021

SKILLS

Programming: Python, Bash

Networking: TCP/IP, OSI, LAN/WAN, Routing Protocols (OSPF, RIP, EIGRP), 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

Orange Business Maroc - Partnership INPT |

Rabat, Morocco

Capstone Project — Full-Stack Developer

February 2025 – May 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.
- Created an intuitive web interface for real-time monitoring and analysis of malware samples.

INPT | 5G Network Testbed with Network Slicing | Open5GS, UERANSIM, MongoDB, Bash Scripting

July 2025 – Sep 2025

Final-Year Project – Full-Stack Network Engineer

- Designed and deployed a complete 5G network testbed across 3 Ubuntu Server 22.04 VMs using VMware, including Core, 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.

PROJECTS

Dual-VPC Cloud Infrastructure on AWS | AWS, Terraform

2024

Personal Project

- Planned 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.

Enterprise Network Infrastructure | GNS3, Routing, Switching, Security

2025

Personal Project

- Built and simulated a multi-tier enterprise network in GNS3 for 12 departments, implementing full segmentation through VLANs and subnetting.
- Configured OSPF for dynamic routing, HSRP and STP for redundancy, and core services such as DHCP, DNS, NAT, and Web/Mail/FTP.
- Integrated a Fortigate firewall and created a dedicated DMZ hosting the servers, securing access with SSH authentication, port security, and ACL policies.