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   **Rabat, Morocco**
Smart Information and Communication Technology (SMART-ICT)   *2023 – Expected 2026*
Classes Préparatoires des Grandes Écoles (CPGE)   **Settat, Maroc**
Technologies et Siences Industrielles (TSI)   *2021 – 2023*
Lycée Technique Ibn Haytam   **Ouarzazate, Maroc**
Science Technologiques Electriques (STE)   *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.