

Mohamed Wady

Security-Focused AI Architect | NetDevOps Engineer | Satellite AIOps Specialist

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PROFESSIONAL SUMMARY

Security-focused AI Architect and NetDevOps Engineer with 14+ years of experience bridging mission-critical satellite operations and modern software engineering. Specializes in offline AIOps, air-gapped LLM deployment on edge hardware, secure RAG systems, SNMP-driven telemetry, and Flutter/Python automation for civil aviation and enterprise network environments. Proven ability to transform legacy telecom workflows into automated, code-driven platforms that improve fault diagnosis, disaster recovery, operational visibility, and MTTR.

CORE VALUE PROPOSITION

- **Mission-critical domain depth:** Hands-on VSAT/NOC engineering experience across satellite links, Frame Relay, IP services, SNMP monitoring, interference analysis, and aviation-grade operational constraints.
- **Secure applied AI delivery:** Designs local/offline LLM workflows, targeted RAG, vector search, and agentic diagnostic pipelines while preserving data sovereignty and air-gapped security requirements.
- **Full-stack execution:** Builds production-oriented Python backends, Flutter desktop/mobile dashboards, Firebase/GCP systems, and automation tooling from concept through deployment.

TECHNICAL SKILLS

Domain	Capabilities
AI & Edge Computing	Agentic Workflows, RAG, LangChain, LangGraph, Local LLMs (Ollama, Qwen), GGUF Quantization, Chroma, FAISS, On-Device Inference, Prompt Engineering
NetDevOps & Backend	Python, FastAPI, Flask, PySNMP, Node.js, REST APIs, Firebase, Firestore, Cloud Functions, InfluxDB, SQLite, SQLAlchemy
Frontend & Mobile	Flutter, Dart, Cross-Platform Mobile/Desktop Apps, Responsive UI/UX, Riverpod, Provider, BLoC, Syncfusion, fl_chart
Infrastructure & DevOps	Docker, Containerization, Git, Bitbucket, CI/CD Pipelines, Air-Gapped Network Security
Satellite & Telecom	VSAT Network Operations, SNMP Polling/Traps, IP Routing, Frame Relay, Link Budget Analysis, STK, MATLAB, ITU Regulatory Frameworks, RF Interference Analysis

PROFESSIONAL EXPERIENCE

Lead Network Automation Engineer (V-SAT) | National Air Navigation Services Company (NANSC)

Egypt | 2016 - Present

- Architected Secure Offline NOC Assistant (VSAT AIOps Nexus), an offline-first AI diagnostic system running entirely on local edge hardware to comply with strict civil aviation data privacy and data sovereignty requirements.
- Engineered agentic workflows using Python, FastAPI, LangGraph, ChromaDB, and targeted RAG, optimizing open-source LLMs such as Qwen for multilingual technical log analysis and evidence-based diagnosis.
- Reduced incident analysis time (MTTR) by 40% by enabling real-time fault investigation and resolution inside a closed network perimeter.
- Developed Juniper NOC Monitoring System, an asynchronous telemetry platform using FastAPI, PySNMP, APScheduler, InfluxDB, and Flutter to detect Layer 2 loops, STP topology changes, and broadcast storms.
- Designed V-SAT Network Automation Suite to manage configuration backups and diagnostics for 48 multiplexers across 24 remote airport sites over high-latency satellite links.

Senior Software Solutions Architect (Part-Time / Consultant) | WEZSOFT

Egypt | 2017 - Present

- Engineered a real-time AI agent for logistics operations using DeepSeek API function calling to automate complex order-to-delivery workflows without human intervention.
- Architected a scalable tri-partite delivery platform consisting of Manager, Delivery, and Customer Flutter applications for end-to-end operational control.
- Built serverless infrastructure on Google Cloud Platform using Firestore, Cloud Functions, Firebase Authentication, and FCM for millisecond real-time synchronization across all interfaces.
- Managed the complete software development lifecycle, including backend architecture, Flutter UI/UX, deployment workflows, Docker usage, and production support.

Spectrum Management Consultant | Egyptian Space Agency

Egypt | 2018 - 2024

- Developed Satellite Interference Analysis Software (SIAS), a specialized scientific simulation engine integrating AGI STK, VBA, and MATLAB to calculate RF interference between GSO and NGSO satellite networks.
- Automated complex Equivalent Power Flux Density (EPFD), carrier-to-interference, aggregate interference, antenna pattern, and time-domain simulation calculations for regulatory engineering workflows.
- Supported national satellite network compliance for missions including MisrSat-2 and EGY-EX1 under International Telecommunication Union (ITU) frameworks.

Spectrum Management Engineer | NAVISAT Middle East and Africa

Egypt | 2010 - 2016

- Managed frequency allocations and performed rigorous interference analysis for satellite communication networks across the Middle East and Africa region.
- Led the TIBA Sat ITU filing submission and supported international frequency coordination activities with space agencies and operators in France, the UAE, and Russia.
- Built foundational expertise in secure satellite operations, regulatory compliance, orbital coordination, and spectrum management for mission-critical networks.

EDUCATION

B.Sc. in Communications & Electronics Engineering

Higher Institute of Engineering, El Shorouk Academy | 2010 | Grade: Excellent with Honours | Ranked 7th in class

COURSES & TRAINING

- PMP (Project Management Professional) Preparation
- CCNP & CCNA - Routing and Switching
- Java J2EE & Spring Framework - Cairo University / 4S
- VHDL-AMS & IC Design - Mentrionix