

JORGE URIEL REYES VERGARA

Communications & Electronics Engineer · IT Infrastructure & Wireless · Full-Stack Developer

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\$ SUMMARY

Communications and Electronics Engineer with hands-on experience across the full infrastructure stack – from NAND flash low-level recovery and MPLS transport networks to wireless AP deployment and full-stack web development. Executed advanced hardware recovery of a Cisco Aironet AP2802i including UBIFS partition reconstruction, U-Boot command sequences, and defective block management in a live power-grid substation environment. Comfortable operating at kernel level, CLI tooling, field ops, and modern TypeScript/React applications. Currently expanding into cybersecurity.

\$ CORE SKILLS

Networking & Telecom	IPv4 · MAC/ARP · MPLS-TP · OSPF · IS-IS · STP · VLAN · VRF · CAPWAP · SSH · Telnet · Serial Console
Wireless Infra	Cisco Aironet AP2802i · IW3702 · Mobility Express Controller · CAPWAP join · AP subordinate mgmt · WiFi radio init
Low-Level HW / Firmware	NAND flash diagnostics · UBIFS/UBI · U-Boot CLI · mkfs.ubifs · ubinize · bad block marking · ECC analysis · TFTP boot
Field Ops	Switches · Routers · ASR/CGR · SDH · VoIP · ODF · VHF · Teleprotection · Microwave · Fiber splicing · OTDR
Software / Modern IT	Next.js · TypeScript · React · Supabase (PostgreSQL) · Tailwind CSS · shadcn/ui · jsPDF · OpenAI API · pgvector · RAG · RBAC · RLS
Linux & Tools	Ubuntu 22.04 · mtd-utils · tftpd-hpa · GNU Screen · serial console (9600 baud) · /dev/ttyUSB0
Cybersecurity (learning)	Network security · ethical hacking fundamentals · Kali Linux · vulnerability assessment · penetration testing

\$ PROFESSIONAL EXPERIENCE

Communications Engineer Nov 2021 – Present
Comisión Federal de Electricidad (CFE) Transmisión · La Paz, BCS, Mexico

- Configure and support communication and network infrastructure in critical power-grid operational environments.
- Protocols in production: IPv4, ARP, MPLS-TP, OSPF, IS-IS, STP, VRF, VLAN, CAPWAP – daily SSH & Telnet device management across routers, switches, and transport equipment.
- Install, maintain & troubleshoot switches, routers, ASR/CGR, MPLS transport, SDH, VoIP phones, ODFs, VHF systems, teleprotection equipment, and microwave links.
- Deploy and manage Cisco Aironet wireless infrastructure (AP2802i + IW3702) under Mobility Express controller architecture at electrical substations.
- Executed full low-level NAND flash recovery on AP2802i: diagnosed UBIFS corruption, rebuilt 8 UBI volumes, flashed via TFTP + U-Boot, marked 12 defective blocks – restoring **90% AP functionality**.
- Optical network maintenance: fiber optic splicing and OTDR-based fault diagnostics. Author formal technical documentation (memorias técnicas) for hardware recovery procedures.
- Currently expanding into cybersecurity – applying infrastructure knowledge toward security principles, vulnerability assessment, and ethical hacking fundamentals.

\$ FEATURED TECHNICAL PROJECT

Cisco AP2802i NAND Flash Recovery

Jan 30 - Feb 27, 2026

CFE Transmisión · Ubuntu 22.04 · mtd-utils · U-Boot · TFTP · GNU Screen

- Diagnosed critical UBIFS partition corruption on AP2802i preventing firmware upgrade from ME 8.3.150.0 to 8.10.196.0.
- Analyzed 256 MiB NAND flash at hardware level: 12 defective blocks (8 original + 4 double-bit ECC), PEB/LEB mapped (128 KiB / 126,976 B).
- Executed full partition recovery in U-Boot (nand erase.part fs, tftpboot, nand write, ubi part) – rebuilding 8 UBI volumes from scratch.
- Created custom UBIFS images with mkfs.ubifs and ubinize; transferred via TFTP at 771-876 KiB/s. Manually marked defective blocks (nand markbad / nand scrub).
- Result: **90% functionality restored** – kernel boots cleanly, WiFi radios operational, CAPWAP join with IW3702 functional. Formal technical memo produced for Cisco TAC / RMA escalation.

\$ SOFTWARE PROJECT

Loan Management Platform – "Presta Base"

2026 - Present

Personal Full-Stack Project · Next.js · TypeScript · Supabase · Tailwind CSS · shadcn/ui · jsPDF

- Full web-based loan management system with 13 modules: client mgmt, amortization, payments, PDF receipts, document storage, cash flow, collections, audit logging, reporting, and RBAC.
- Integrated RAG chatbot using OpenAI GPT-4o-mini + pgvector for operational queries.
- **Zero TypeScript errors**; RLS policies and role-based access fully operational; targeting Vercel deployment.

\$ EDUCATION

B.Eng. Communications & Electronics Engineering

Universidad de Guadalajara

\$ LANGUAGES

Spanish – Native

English – Intermediate / Working Proficiency

\$ CERTIFICATIONS

- Huawei Seeds for the Future 2021 – 5G · AI · IoT scholarship
- Cisco ASR 903 + MPLS Training – 40h · KN-202207-CFELC-A08
- MPLS-TP XTRAN XT-2210 – 40h · network building & platform tools

\$ STRENGTHS

- › HW + SW: full-stack technical depth
- › Strong technical documentation
- › Fast learner · high adaptability
- › Low-level firmware to production web apps
- › Critical infrastructure mindset
- › Field ops ↔ software development