Antonius Carvalho

Senior Technology Leader | Program & Delivery Management | IT Operations & Infrastructure | Digital Transformation | Enterprise & AI Solutions

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PROFESSIONAL SUMMARY

Senior technology leader with 17+ years of experience spanning IT operations, infrastructure, enterprise applications, digital transformation, AI-integrated systems, and large-scale program delivery — bringing the breadth of experience, operational ownership, and decision-making authority expected at a senior management level. Delivered the AI-driven biometric security and identity system used by the Ministry of Interior during the FIFA World Cup 2022 in Qatar, and led a nationwide Network Monitoring System (NMS) and ITSM programme covering 3,500+ heterogeneous network elements, with AI-assisted downtime detection, uptime tracking, and automated operational reporting. Career built on repeatedly being handed entire programmes and business functions end to end — requirements discovery, solution architecture, vendor evaluation, governance, stakeholder management at ministry and executive level, team leadership, and operational continuity. Founded and operated an ISP serving 1,200+ subscribers, digitally transformed a 300-employee manufacturing company from fully paper-based operations to real-time component-level traceability, and directed a 30-member product team building an AI-assisted multimodal transport platform presented for funding to the Union Minister of Road Transport & Highways (Shri Nitin Gadkari). Has consistently operated either as owner or directly alongside executive leadership, managing the complete delivery organisation beneath.

CAREER HIGHLIGHTS

- Delivered the Ministry of Interior biometric security system for FIFA World Cup 2022 — AI-based facial recognition combined with iris, fingerprint, passport, and Qatar ID verification, plus visa validity, vehicle, and blacklist screening — handling the engagement on-site, end to end, and completing delivery approximately six weeks before the tournament opened.
- Led a country-level Network Monitoring System (NMS) and ITSM programme monitoring 3,500+ network elements across LTE, microwave, RF, fibre, wireless, servers, switching, CCTV, fire, power, and environmental systems, with AI-assisted anomaly and downtime detection feeding operational dashboards.
- Directed the business-intelligence phase of the NMS programme — Python and SQL data pipelines feeding Tableau dashboards — architecting the reporting layer and guiding the engineering team through implementation.
- Supported closure and handover of Qatar's nationwide Public Warning System, contributing operational scripts and defect-resolution guidance for a platform still in national service today.
- Digitally transformed a 300-employee manufacturing company from entirely paper-based operations to a real-time digital platform with component-level traceability — from an individual screw's vendor batch to the serial-numbered product and its warranty history years later.

- Conceived and led RoadRadar, an AI-assisted multimodal transport super-app (computer-vision road hazard detection, GPS telemetry, multi-hop journey planning across walking, bus, train, and rideshare), directing a 30-member cross-functional team and presenting the platform for funding to the Union Minister of Road Transport & Highways (Shri Nitin Gadkari).
- Founded and scaled an ISP to 1,200+ active subscribers, owning the complete operation — network engineering, NOC, field teams, procurement, billing systems, and customer operations.
- Delivered 40–60 client engagements through his own consultancy across ERP, CRM, enterprise infrastructure, web, mobile, and media platforms, including live-streaming infrastructure built in the pre-YouTube/Twitch era on Red5, FFmpeg, and Flash Media Server.
- Currently leads international client delivery across the US, Middle East, Africa, and Southeast Asia — full-stack platforms, real-time market-data systems, and LLM-based AI products — while architecting Chatttr, a self-hosted messaging platform with a built-in multi-agent AI workforce (persistent agents, semantic memory, DAG task orchestration, and full cost governance).

CORE COMPETENCIES

- IT Operations & Service Continuity
- Infrastructure & Data Centre Management
- Network Engineering & NOC Operations
- ITSM: Incident, Asset, Configuration & Change Management
- Digital Transformation & Process Digitization
- AI & Intelligent Systems Integration
- Enterprise Applications (ERP / CRM / SCM / WMS)
- Programme & Project Management
- Team Leadership, Hiring & Mentoring
- Vendor Evaluation & Stakeholder Management
- Government & Executive-Level Engagement
- High Availability & Disaster Recovery
- Capacity Planning & Monitoring
- Data Pipelines, BI & Operational Reporting
- Solution Architecture & Technical Governance
- Business Process Analysis & Documentation

PROFESSIONAL EXPERIENCE

Tech Lead — JMD Technology Solutions

Remote (Chicago, USA) | Jan 2025 – Present

Leads client-facing technology delivery for international engagements spanning the US, Qatar, Africa, Singapore, Dubai, and Europe — owning projects from requirements and estimation through architecture, build, deployment, and support.

- Lead delivery of 7–8 major client projects across frontend, backend, and mobile, managing distributed contract developers and interns — hiring, task allocation, code reviews, mentoring, and release planning.

- Own client relationships end to end: requirements discovery, scoping, estimation, progress reporting, and delivery governance across time zones.
- Built and shipped a React Native crypto-marketplace application supporting 50+ cryptocurrencies with asset analytics and multi-year historical performance views.
- Delivered a React.js stock and crypto market platform with SEO-oriented dashboards and real-time market data, integrating Coingecko, CoinMarketCap, and India's NSE and BSE exchange APIs.
- Designed and built LLM-based AI agents and WhatsApp chatbots for stock-market advisory, accounting, and customer-service use cases.
- Built an Amazon dropshipping automation platform handling e-commerce operations, logistics, and international shipping flows (USA–Canada, USA–India, India–Dubai) including multi-currency pricing and foreign-exchange considerations.
- Delivered a stock and crypto market-intelligence pipeline processing video and audio transcripts with FinBERT sentiment analysis, entity extraction, and Qdrant vector search to surface crypto research signals.
- Enforce secure authentication, clean architecture, and documentation standards across all client work.

Project Manager & Technical Lead — Hexatech

Doha, Qatar | Jan 2023 – Dec 2024

Primary on-site lead for a Ministry of Interior engagement — the senior-most company representative at the client site, on-site daily with ministry officers, reporting directly to the General Manager and CEO. Full ownership of technical decision-making, delivery governance, and client relationship across three programmes.

Programme 1 — Nationwide Network Monitoring System (NMS) & ITSM

- Directed architecture and delivery of a country-level Network Monitoring System covering 3,500+ heterogeneous network elements: LTE, microwave, RF, fibre, wireless, servers, switches, CCTV cameras, fire-alarm systems, air conditioning, and power systems.
- Embedded AI-assisted monitoring for anomaly and downtime detection, uptime tracking, and automated reporting — with deliberate alert noise-reduction so operator alerts remained actionable.
- Established ITSM practice across the estate: asset tagging and management (SNMP-based), incident management with formal root-cause analysis (and groundwork for RCA automation), CMDB, configuration management with automated config backup and push for Cisco and Juniper equipment, lifecycle and availability tracking, and capacity planning.
- Governed high availability and disaster recovery across primary and DR sites, including cutover and cutback procedures.

Programme 2 — Business Intelligence & Data Visualization (NMS Phase 2)

- Architected the operational reporting and analytics layer over the NMS estate: Python and SQL data pipelines feeding Tableau dashboards.
- Planned and decomposed the entire BI workstream, researched implementation approaches, and guided engineers through Tableau dashboard development — owning design and technical direction while the team executed.

Programme 3 — National Public Warning System (Qatar)

- Supported closure and handover of Qatar's nationwide Public Warning System — a platform in live national service — providing defect-resolution guidance and authoring operational scripts during the handover phase.

Leadership & Governance

- Ran the client engagement on-site daily (07:00–13:00 at the Ministry, extended hours and weekends as required), leading up to four meetings per day with police-department officers, vendor teams, and client-side engineering, then briefing executive management each afternoon.
- Held technical decision authority across the programmes, presenting options, trade-offs, and billing/timeline impact through the executive approval chain.
- Authored HLDs, LLDs, project plans, minutes of meeting, change requests, and training documentation; ensured external certification training for engineers was planned and executed.
- Evaluated and technically assessed vendors — sourcing, screening, and rigorous capability evaluation — feeding executive procurement decisions.
- Led a blended team of internal and vendor engineers (3 + 2 core, plus extended vendor teams), acting as escalation point for all critical issues.

Consultant (Contract) — M K Information Systems

Doha, Qatar | Jul 2022 – Dec 2022

Sole on-site consultant at the Ministry of Interior (ISD) for the FIFA World Cup 2022 biometric security programme — handed a title-level mandate and personally responsible for turning it into a delivered, operational system.

- Delivered an AI-driven biometric identification and security platform integrating facial recognition, iris, fingerprint, passport, and Qatar ID verification, along with visa-validity checks, vehicle checks, and blacklist screening workflows.
- Owned the full delivery cycle: requirements gathering across multiple ministry departments, stakeholder meetings with senior officials, solution build (Node.js, React.js, API integrations), UAT, deployment, documentation, and production stabilization.
- Directed supporting resources on-site, including design staff, while personally driving all technical and coordination work.
- Completed delivery approximately six weeks before the tournament opened, then ran daily test-and-feedback cycles through the event — the system operated successfully throughout FIFA World Cup 2022.

Founder & Principal Consultant — Exits Consultancy Services

Thane, India | Sep 2013 – Jun 2022

Founded and led a technology consultancy delivering 40–60 client engagements across ERP, CRM, enterprise infrastructure, websites, mobile apps, servers, and media platforms — acting as business analyst, solution architect, project manager, and delivery lead across telecom, government, manufacturing, media, and private-sector clients.

Flagship: Manufacturing Digital Transformation (Smart PDU Manufacturer, ~300 employees, 2018)

- Led end-to-end digital transformation of a fully paper-based manufacturing operation — registers, slips, and manifests — over a six-month engagement beginning with two weeks of pure process discovery and two months of business analysis before development began.
- Mapped and documented every operational workflow station by station: security-gate inward, logistics, warehousing, manufacturing-line stations, QA, storeroom, dispatch, exit gate, and warranty/RMA — producing flowcharts deployed to every station and worker on the line.
- Designed and built an integrated ERP/SCM/warehouse-management platform (MERN stack with MongoDB; web plus native Android) with barcode/QR-driven real-time inventory across all stations, accessible on desktops, tablets, and mobile devices.
- Engineered component-level traceability: an individual screw traceable through the organisation via its vendor batch and box, and any shipped product traceable years later by serial number to its customer, warranty-claim history, and constituent component batches.
- Ran the engagement as both consultant and builder — scope definition, project planning, stakeholder workshops with supervisors and operators, development (leading a junior developer), rollout, training, and support.

Flagship: RoadRadar — AI-Assisted Multimodal Transport Platform (2021)

- Conceived and led RoadRadar entirely: an AI-assisted transport super-app combining computer-vision road hazard and pothole detection, GPS telemetry, incident reporting, tolls, ticketing, and multi-hop journey planning across walking, bus, train, taxi, and rideshare — designed for Indian road and transit conditions.
- Directed a 30-member cross-functional team of employees — UI/UX designers, React Native mobile developers, backend and frontend engineers — owning work assignment, planning, review, delivery control, and stakeholder communication.
- Presented the platform for funding to the Union Minister of Road Transport & Highways (Shri Nitin Gadkari).

Broader Consultancy Delivery

- Delivered enterprise infrastructure engagements including Zimbra mail platforms, VMware ESXi and KVM virtualization, and Ubuntu/CentOS server estates.
- Built live-streaming infrastructure in the pre-YouTube/Twitch era using Red5, FFmpeg, and Flash Media Server, delivering event streams to live audiences.
- Delivered media and entertainment projects for leading Indian artists — Sunidhi Chauhan (Hong Kong live-show site delivered in three days), Sonu Nigam, Shankar Mahadevan, and Art & Artistes (Pandit Jasraj family).
- Owned the commercial side throughout: client acquisition, proposals, pricing, delivery governance, training, and long-term support relationships.

Founder — Exits Broadband Services (ISP)

Thane, India | Apr 2011 – Jan 2022

Founded, built, and operated a broadband ISP for over a decade — full ownership of the network, the operation, and the business.

- Scaled operations to 1,200+ active subscribers on organic growth alone.
- Engineered and operated the network: Cisco switching, Ubiquiti wireless, PPPoE termination, point-to-point wireless backhaul (AirFiber), and fibre-optic links — including hands-on fibre pulls and splicing supervision.
- Ran the NOC, managed servers and hardware, and directed four field engineers who doubled as the customer-support function; acted as final escalation for all outages.
- Built the company's own CRM and billing platform in-house; managed collections, procurement, vendor relationships, and capacity planning.
- Applied deep working knowledge of MikroTik, RADIUS, DHCP, OSPF, and BGP across ISP and adjacent network projects.

EARLIER EXPERIENCE & VENTURES

- **Assistant Professor — IMCOST College** | Thane, India | Jan 2018 – Jul 2019 — Taught GIS, Linux, and Networking at postgraduate level, guided student projects, and mentored students into industry — evidence of the communication and teaching capacity applied throughout his leadership roles.
- **Reporter / Journalist — Thane Nagrik Hindi Newspaper** | Thane, India | 2012 – 2014 — Covered local and general assignments: research, interviews, writing, and public interaction.
- **Co-Founder — AXEP Multimedia Servers** | 2009 – 2013 — Built game servers and live multimedia streaming for events and competitions using Red5, FFmpeg, and Flash Media Server, with HTML-based event platforms.
- **Co-Founder — XWire Internet Services** | 2011 – 2012 — Operated a neighbourhood ISP serving ~300 customers; the customer base was later sold.
- **Systems Administrator — Play Factory Pvt Ltd** | 2011 – 2012 — Systems administration and operational support.
- **Freelance Developer — Art & Artistes (I) Pvt Ltd** | 2011 – 2013 — Web delivery for the entertainment and media industry.
- **Other ventures:** ran Xpress Clothing & Apparel, a direct-to-home fast-fashion venture (2011–2013), and piloted LaKitchn, a cloud-kitchen concept (2021) — an instinct for commerce that has always run alongside the technology.

PERSONAL R&D & AI PROJECTS

Chatttr — Self-Hosted Messaging Platform with a Built-In AI Workforce (in active development)

A personal project built for his own use — and as a deliberate test of his ability to architect, build, and operate a platform of this scale single-handedly.

- A self-hosted messaging platform — one-to-one and group chat, WebRTC voice/video calls, screen sharing, and remote desktop — with a full multi-agent AI workforce inside it: persistent agents with personas, defined roles, tool allow-lists, hard budget ceilings, and reporting lines organised into organisations, departments, and projects.
- Includes Friday, the platform's AI orchestration engine: a directed-acyclic-graph task engine that plans, parallelises, reviews, and verifies work autonomously — inspectable and steerable mid-run, with scheduled and overnight execution.

- Supporting AI infrastructure: semantic vector memory with locally hosted embeddings, agent-to-agent message bus, full MCP (Model Context Protocol) tool integration with semantic tool selection, user-authored tools under OS-level sandbox isolation, and connectors to mainstream messaging apps.
- Governance and security designed in from day one: immutable audit ledger with per-agent cost attribution, budget hard stops, human-in-the-loop approval gates, two-plane JWT security, and AES-256-GCM envelope-encrypted credential vault.
- Built on Node.js microservices, MongoDB, Redis, and a vector store — twelve independently deployable subsystems, each behind its own feature flag with a dedicated verification programme.

Other Projects

- **Autonomous Patrol Drone (work in progress):** self-patrolling drone on Raspberry Pi with ArduPilot/DroneKit, OpenCV, and an on-device AI model for object detection and intruder alerts — mobile-controlled with autonomous operation.
- **On-Premise Lab:** self-hosted 48-core / 256 GB server infrastructure running the full personal stack — hands-on infrastructure ownership as a daily practice.

EDUCATION

- **MCA (Master of Computer Applications)** — IMCOST, Thane | 2015
- **B.Sc. Information Technology** — B.N. Bandodkar College, Thane | 2012

TECHNICAL SKILLS

Leadership & Delivery: programme/project management, stakeholder & vendor management, requirements discovery, HLD/LLD & technical documentation, change control, escalation management, training & mentoring, delivery governance

AI & Intelligent Systems: LLM integration & AI agents, WhatsApp/chatbot platforms, computer vision (OpenCV), biometric systems, FinBERT/NLP pipelines, Qdrant vector search, AI-assisted monitoring & anomaly detection

Infrastructure & Networking: Linux server estates, virtualization (VMware ESXi, KVM), Cisco, Juniper, MikroTik, Ubiquiti, PPPoE, RADIUS, DHCP, OSPF, BGP, wireless backhaul, fibre optics, NOC operations, SNMP monitoring

IT Operations & ITSM: incident management & RCA, asset & lifecycle management, CMDB, configuration management & automated config backup, capacity planning, high availability, disaster recovery, service continuity

Enterprise Systems: ERP, CRM, SCM, warehouse management, manufacturing workflow digitization, barcode/QR traceability, monitoring platforms

Development: JavaScript, TypeScript, Python, PHP, Node.js, React.js, Next.js, React Native, Express.js, Laravel, Android

Data & BI: MongoDB, MySQL, MS SQL, Python/SQL data pipelines, Tableau, operational dashboards & reporting

Cloud & Tools: AWS, Azure, Docker, Kubernetes, Git, Auth0, Zimbra, Ubuntu, CentOS, Xcode, Android SDK

PROFESSIONAL TRAINING

Completed formal training in CCNA and CCNP (Cisco), RHCE (Red Hat), Microsoft Server, and CompTIA A+/N+ — applied across a decade of hands-on network and systems operations.

LANGUAGES

English (fluent) | Hindi | Marathi