



Nizar AYED

Principal Software Engineer
Healthcare AI & Backend Systems Architect

Contact

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Education

AI for Business Certification (ongoing) 09/2026 – X École Polytechnique, Master 2 Research & Business Consulting 09/2019 – IAE Metz, IBM Blockchain (HyperLedger) 01/2018 – Coursera, Machine Learning (Andrew Ng) 05/2016 – Coursera, ITIL V3 Foundation 09/2011 – PeopleCERT, GAMP5 – Risk-Based CSV 08/2009 – With Sion WYNE, Documentum (Advanced) 05/2005 – Bell Labs, 6Sigma (Green Belt) 12/1999 – MEDYS Italy, Engineering Diploma – MEST 06/1999 – Polytechnic School of Tunisia Preparatory Classes (French Concours) 06/1996 – IPEST

Tech Skills

- **Backend & Systems:** Python (Flask, Micro-services, ML/LLM), TypeScript (NestJS), NodeJS, JavaScript, C/C++, Java, Shell- Linux
- **Infrastructure:** Docker, LXD, NGINX, PostgreSQL, MongoDB
- **AI/ML:** LLMs, Conversational AI, Agent-based Systems, Machine Learning, Blockchain
- **Enterprise:** ECM (Documentum), GED, Web Technologies

Business Skills

- Project & Program Management Requirements gathering, Specifications, Validation, Team management, Agile & Iterative methodologies
- Healthcare Compliance: GAMP5, FDA, 21 CFR Part 11, Risk Management
- Business Development – R&D – Change Management

Soft Skills

Client-focused, Analytical, Creative, Rigorous, Cross-cultural Communicator, Networker, ...

ABOUT ME

Principal engineer with 20+ years building production-grade, scalable systems for regulated healthcare environments. I architect AI platforms combining LLMs, multi-agent orchestration, and conversational AI, from global pharma deployments (30+ sites) to hands-on AI engineering in startups. I own the stack from architecture through deployment.

Tech Stack: Python · TypeScript (NestJS) · LLMs/RAG · Agent Orchestration · Distributed Systems · GAMP5/FDA/21 CFR Part 11

EXPÉRIENCE

2024 – 2026	Wizipet.com <i>CTO and Co-Founder</i>
2020 – 2024	Tourisfair.de <i>CTO, Co-Founder and Product Owner</i>
2015 – Present	Upgrade-Code.org <i>CEO – Digital Coach (Digital Transformation)</i>
2012 – 2014	FullComMedia S. à r. l. <i>Founder of Digital Signage company</i>
2009 – 2012	Eurofins Scientific Group <i>International IT Manager in charge of Pharma Quality Systems – (Managing 30 labs from Singapore to Los Angeles)</i>
2008 – 2009	Capgemini <i>LIMS Project Manager – IT solution Designer (Danone research)</i>
2002 – 2008	CGI (ex. LogicCMG – Unilog) <i>Product Owner (Biorad – ADAGIO ®) – Senior Business Analyst</i>
2001 – 2002	ISSET Radès <i>Technology Educator (Radès – Tunisia)</i>
1999	MEDYS Srl <i>R&D Engineer – Medical Devices</i>

VOLUNTEERING

miXYtès – Digital Social Center
Active Member & Board Member (2017–2021): Bridging the digital divide
InnoStyle – Innovation Promotion Association
General Secretary (2016–2017)
Metz Technopôle Club
Executive Committee Member (2017–2021)
Boxing Club Pantin (producing 2 world champions)
President since 2005

INTEREST

Building a better world through technology – Science & Futurism – Spirituality – History and Etymology

LANGUAGES

French, English, Italian (Spoken only) and Arabic (Mother-tongue)

Nizar AYED

Engineering diploma from Polytechnic School of Tunisia
49 years, fluent English, French and Italian
Nationality: FR

Digital and strategic consulting

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PROFESSIONAL SUMMARY

Backend engineer with 20+ years building and deploying production-grade, scalable distributed systems in regulated healthcare environments. Proven track record delivering global quality management platforms across 30+ international sites (Eurofins Pharma), medical device development (Biorad ADAGIO®), and regulatory compliance systems for FDA / EMA / ANSM submissions (LFB, Roche).

Since 2018, I have been designing and building AI-powered systems – LLM-based applications, conversational AI agents, recommendation engines, and sentiment analysis pipelines – with a focus on agent-based architectures and RAG patterns. My ongoing "AI for Business" certification (X – École Polytechnique) deepens my expertise in AI strategy, LLM/RAG, reinforcement learning fundamentals, frugal AI, regulatory compliance, security, and change management at scale.

I bring a systematic, full-stack approach: from software architecture and backend engineering through deployment and operations. I am most effective in founder-led, high-ownership environments where technical decisions drive real-world impact.

KEY SKILLS

Backend Engineering & Architecture

- Python (Flask, micro-services, ML/LLM integration)
- TypeScript (NestJS), NodeJS, JavaScript
- Scalable distributed systems design
- RESTful API design & orchestration
- Software architecture & systems design

Healthcare & Compliance

- GAMP5 – Risk-based computerized system validation
- FDA / EMA / ANSM regulatory frameworks
- 21 CFR Part 11 – electronic records & signatures
- Pharmaceutical quality systems (CAPA, Audit, Document Control)
- Medical device development (Biorad ADAGIO®)

AI / ML & Agentic Systems

- AI Governance
- LLMs & RAG pipelines
- Multi-agent orchestration & conversational AI
- CustomGPT development & chatbot engineering
- Machine Learning (Coursera – Andrew Ng)
- Sentiment analysis & recommendation engines

Project Management & Leadership

- Agile / TDD methodologies
- BPMN – Business process modeling
- Requirements gathering & solution specification
- Cross-cultural team coordination (15+ nationalities)
- Change management & risk analysis

CERTIFICATIONS & EDUCATION

Sept. '26	Certification AI for Business – in progress (X – École Polytechnique)
Sept. '19	Master 2 Research & consulting business (IAE Metz)
Jan. '18	IBM Blockchain Course (Coursera – HyperLedger™)
May '16	Machine Learning (Coursera with Andrew Ng)
Aug. '11	ITIL V3 Foundation Certification (granted by PeopleCERT)
Oct. '09	Gamp5: Risk Based Computerized System Validation
May. '05	Documentum (Avanced)
Dec. '99	6Sigma (MEDYS-Italie / Internal training)
Sept. '96 – June '99	Ecole Polytechnique de Tunisie
Sept. '93 – June '96	IPEST (Preparatory for French engineering schools)

Detailed Career Review

WiziPet.com (Jul. '24 – Dec. '25) – Luxembourg – Luxembourg

Petcare mobile platform

CTO

Co-founder

- **All-in-one mobile application for pet welfare**
 - Led full-stack engineering: architecture, backend, deployment, scaling
 - Scaled platform from a few thousand to 100,000+ users
 - Architected and deployed AI features within the application
 - Migrated codebase from Xamarin to Flutter (cross-platform)
 - Built and shipped white-label mobile apps for enterprise partners (each serving 100k+ users)
 - Managed technical roadmap, infrastructure, and engineering team

Tourisfair UG (Sep. '20 – June '24) – Saarbrücken – Germany

TravelTech SaaS

AI-powered travel planning platform

Associate Director & Product Manager

- **Founder and Partner**
 - Define company strategy, product roadmap, and technical direction
- **Technical lead of all digital assets:**
 - Servers, databases, application code, infrastructure
- **Cloud infrastructure** [DigitalOcean and Scaleway]: self-managed deployment (Docker, NGINX, PostgreSQL) across multi-region servers (EU + US)
- **AI / Agentic Systems:**
 - Designed and deployed to production a multi-agent recommendation platform for travel planning
 - Built a CustomGPT-based orchestrator coordinating specialized LLM agents (sentiment analysis, recommendation engine, activity planning)
 - Developed a RAG pipeline integrating traveler reviews with LLM-based recommendation generation
 - Created a Messenger chatbot agent with conversational trip-planning capabilities
 - Built a web chat interface with augmented LLM reasoning for travel advice
 - Implemented a sentiment analysis engine powering a feeling-based search system
- **Product & Engineering Leadership:**
 - Full-stack development: backend (application servers, APIs, databases), frontend (UI), infrastructure (servers, deployment)
 - Agile Product Management: needs definition, team coordination, roadmap, delivery
 - Competitive intelligence and technology watch

Key technologies: Python, TypeScript (NestJS), NodeJS, PostgreSQL, Docker, LLMs, RAG

Upgrade-Code.org (Feb. '15 – Today) – Metz

Independent Software & AI Consulting Practice

Founder & AI Consultant

EIRL AYED NIZAR

- **Research contribution:**
 - Article: "Behavior commitment versus community commitment's impact on tourist consumer's loyalty", JRMH 2019 – Direct to Consumer (<https://www.marketinghorloger.ch/>)
- **AI & Data Strategy Consulting:**
 - Data/AI strategy definition, use-case identification, feasibility analysis
 - AI governance blueprint, pilot project execution, change management

- Quick-win identification and ROI-driven implementation roadmaps
- **AI Engineering & Training:**
 - Python micro-services development (Flask, REST APIs)
 - LLM/RAG integration – prototype to production
 - BPMN-based process modeling for AI-ready workflows
- **Technical Training (selected):**
 - Python (intro to advanced), Web programming (HTML/CSS/JS, MERN stack)
 - No-code platforms (Bubble.io, Google AppSheet)
 - Full 592h bootcamp program design & delivery (Senegal, 2021–2022)
- **Technical mentoring:**
 - Trained 50+ developers in Python, micro-services, and AI engineering through structured bootcamps (592h)
- **Startup Coaching:**
 - Lean Startup methodology, business model discovery
 - Fundraising planning, revenue model identification

FullComMedia SARL (June '12 – Sept. '14) – Luxembourg

Privately held company (Jul. '12 – Today)

*Business Development
Leadership
Sales Skills*

Founder and COO

- FullComMedia is a company of experts in Digital Signage (DS), created and launched to counsel customers about in-store and institutional communication using LCD and TV screen, deploy networks of remotely controlled media players and offer quality class content.
- FullComMedia holds 4 brands:
 - FullIC (Internal Communication): provider of DS technology (Gammacast, RiseVision, ...)
 - FullAds: the first ad company specialized in hospitality networks
 - FullStudio: content provider
 - FullMarket: Digital signage expert and consouling

Key Skills:

- Internal Communication management (employees, visitors and customers)
- Management and leadership of sales and tech teams
- Development of the business models with investors
- Marketing and sales planning
- Innovation / Create new services using Digital Signage System

Eurofins Scientific Group (June '09 – June '12) – Luxembourg

Pharma Division – Global Quality Systems

*International IT Manager
Pharma Quality Systems
Senior Business Analyst &
Solution Strategist*

- **Global Quality Management System Deployment:**
 - Designed, configured, and deployed EtQ (enterprise quality platform) across 30+ international sites (Shanghai to Washington DC, including Lancaster Labs: \$200M+ revenue, 1,000+ employees)
 - Led full lifecycle: requirements gathering, risk assessment, system configuration, GAMP5 validation, document migration, production support
 - Architected a scalable multi-site quality platform serving a global user base
- **Global Process Harmonization Initiative ("ECH"):**
 - Founded and drove the Eurofins Conference for Harmonization
 - Coordinated 15+ Quality Managers across 10 nationalities (German, American, French, Italian, Dutch, Scandinavian, Spanish, Indian, Chinese, Singaporean)
 - Achieved unanimous approval of common processes – a first for the organization

- **Infrastructure & Scale:**
 - Multi-region deployment (EU, US, Asia) – managed system performance, compliance, and user adoption across time zones and regulatory contexts
 - Standardized information systems across the entire Eurofins Pharma division
 - Mentored and trained 15+ QA managers and site leads across 10 countries on GAMP5 validation, risk assessment, and system deployment
- **Key responsibilities:**
 - Business-IT coordination for quality IT projects (15-person team)
 - GAMP5-based computerized system validation
 - Risk analysis (FMEA), change management, user training (global)

Key skills: GAMP5, FDA compliance, EtQ, multi-site distributed systems, change management, cross-cultural leadership

Capgemini Industry / Retail (May '08 – May '09)

Job Description: « IT & Business Analyst ». **Business Goals:** Develop Capgemini LIMS services offering.

DANONE RESEARCH
(Jan. '09 – Jun '09)

Food & Drugs
LIMS

HYDRE Project Manager & Solution Designer

- HYDRE: Master project for "Ground-Water Resources Protection Management"
- Preparation of the User Requirement Specification / Request for Proposal
- Solution selection and detailed design
- GIS + LIMS components

Key Skills:

- Needs' definition and official functional requirements assessment
- Monitoring and Assistance to the project Definition and design phases

DANONE's Daniel
Caruso Research Center
(Apr. '08 – Jun '09)

Food & Drugs
LIMS

LIMS Project Manager

- Management of the Food Surveillance Plan and the Analytical Support Services
- Functional Support to key-users (2nd level support)
- Delivery / validation and deployment of LIMS projects (France, Europe and International)
- "Strains" Project: a new LIMS portal for the strains' library and collection of Danone with graphical management module of experiences (Excellent reference).
- Extending the scope of the LIMS support to Danone France Quality Control (SOLUTION Lims from Altik) and to Evian LIMS (Labware): Coordinator of support between the business teams / R & D Quality, IT and Databases

Key Skills:

- Needs' definition and official functional requirements assessment
- Monitoring and Assistance to the delivery / validation

The mission is a continuation of what begun at Unilog (Logica)

Unilog a LogicaCMG Company (now CGI) (Apr. '02 – Apr. '08)

**DANONE's Daniel
Caruso Research Center
(Nov. '07 – Apr. '08)**
*Food & Drugs
LIMS*

LIMS Project Leader

- Management and technical coordination of the Food surveillance plan and the analytical support team
- Functional support to key-users (support level 3)
- French, European and international LIMS projects deployment and management

Key strengths:

- Assistance to users' needs screening and requirements specifications
- Project monitoring and assistance to the solution validation

**BIORAD – Life Science
Division**

*Medical Device Development
– ADAGIO® Measurement
Instrument
Project Coordinator*

- Coordinated cross-functional teams (Marketing, Regulatory Affairs, Legal, R&D) and external vendors (hardware / software) to develop a market-ready healthcare measurement instrument
- Led requirements definition with end-customers, design workshops, and prototyping qualification plans
- Managed project phases, milestones, and prototype validation
- Delivered a patient-impacting medical device – from concept to qualification and directly impacting clinical diagnostics and patient outcomes

(Part-time mission concurrent with Roche and LFB)

**ROCHE
(Jan. '06 – Apr. '08)**

*European Internet Portal
Factory (EIPF)
Documentum
Technical Expert & Consultant*

- Functional and technical expertise on Documentum for web content management and publishing
- Requirements definition and functional specifications authoring
- Functional training for internal Roche front teams

**LFB
(May '05 – Aug. '07)**

*Life-Science
Regulatory Affairs
Documentum
Technical Expertise*

- Managed regulatory submissions for drug marketing authorizations (New Drug Applications) in compliance with FDA, AFSSAPS (now ANSM), and EMA regulatory frameworks
- Administered, deployed, and maintained regulatory document management systems across R&D, Quality, and Drug Release departments
- Ensured system evolution aligned with evolving pharmaceutical IT regulations under FDA (21 CFR Part 11), EMA, and French health authorities
- Optimized product dictionaries and configured workflows for regulatory efficiency

**SAGEM, ETAM
(Dec. '03 – Apr. '05)**

*Technical Expert – Lotus Notes
/ Domino*

- Administration and maintenance of SAGEM's Lotus Notes application portfolio
- Designed, specified, and delivered Lotus Notes interface with SAP HR (SAGEM)
- Designed, specified, and delivered CRM tool for loyalty card management (ETAM)

**ANTARGAZ, SHISEIDO,
GSK, ORANGE
(Apr. '02 – Dec. '03)**

*Analyst Engineer – JDE
WorldSoftware*

- Functional and technical specifications authoring
- Test plan design and deployment
- End-user support (2nd/3rd level) on JDE WorldSoftware
- Bugfix and feature request maintenance

Institut Sup. Des Etudes Technologiques (Feb. '00 – Sept. '01)

*Radès, Tunisia
Technology Educator*

- Taught Fluid Mechanics, Mathematics, Survey Field Work
- Founded the first business incubator in a Tunisian university institute: drafted director lines and launched construction
- Organized continuing education for Ministry of Equipment technicians

MEDYS - ex. GEMS Italy (Oct. '99 – Jan. '01)

*Healthcare Industry / Medical
Device Manufacturing
R&D Engineer*

- Manufacturing process engineering for medical device production migration (Italy to Tunisia)
- Internal quality training (6Sigma Green Belt methodology)
- Product development: silent, energy-efficient motor for healthcare appliances