Fernando Lobato Alejano

PhD in Computer Engineering · CTO · University Lecturer · Researcher

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PhD in Computer Engineering and CTO at Grupo Nani Empresarial, with 15+ years in technology leadership, consulting (Deloitte), entrepreneurship (10 years as founder and CEO of Esquema 3) and academia (7 years as lecturer and researcher at UPSA). Specialist in systems architecture, digital transformation, cloud (AWS, Azure, GCP), DevOps, IoT, Industry 4.0, applied AI and cybersecurity. A “bridge” profile between business and technology, focused on delivery: from the command line to technical leadership.

PROFESSIONAL EXPERIENCE

2026 — Present

Chief Technology Officer (CTO)

Grupo Nani Empresarial

Leading the group’s technology strategy: technical vision, leadership of the development and infrastructure teams and orchestration of the digital transformation of the business lines. Cloud, automation and applied AI as growth levers, with cybersecurity and data governance as the foundation.

2026 — Present

Lecturer, Master's in Data Engineering

PontIA Tech

Teaching on the Master’s in Data Engineering, MLOps and Cloud Architecture (a digital school specialising in Big Data and AI): 100 % online programme with live classes, focused on end-to-end data platforms in the cloud.

2026 — Present

Lecturer, Master's in AI & Big Data Analytics

Pontifical University of Salamanca (UPSA)

Teaching the “Business Intelligence, Visualisation and Indexers” module on the Lifelong Learning Master’s in Artificial Intelligence & Big Data Analytics (60 ECTS, online).

2026 — Present

Founder and driving force

IA para hoy (iaparahoy.com) · Dime si esto es IA (dimesiestoesia.com)

Digital outlet covering AI news in Spanish (IA para hoy) and a free detector of AI-generated content with the evidence in plain sight (Dime si esto es IA). End-to-end personal projects, powered by applied AI.

2024 — 2026

Delivery Lead

Deloitte Technology & Transformation

Technical leadership of digital transformation projects through automation and AI agents. Business Intelligence solutions integrating API data sources (Dow Jones, Dun & Bradstreet, LSEG) for Third Party Risk Management and automated Due Diligence reporting.

2023 — 2024

Senior Delivery Consultant

Deloitte Risk Advisory

Specialised consulting in digital identity (eIDAS2). Development and maintenance of web applications with a focus on reliability, quality and security; CI/CD pipelines and multi-environment deployments with Docker, Kubernetes, SonarQube and Prisma Cloud.

2016 — 2023

Lecturer and Researcher

Pontifical University of Salamanca (UPSA)

Undergraduate and master’s teaching in Computer Engineering and Technology Business Administration (subjects in the annex) and applied research in IoT, multi-agent systems and Industry 4.0 as principal investigator on R&D&I projects. Accredited as Assistant Professor and rated “Notable” in the Docentia programme (ACSUCYL, 2023).

2013 — 2023

CEO and Founder · Sole Director

Esquema 3 Sistemas y Telecomunicaciones, SLU

Founded and ran the company for ten years: full-stack development, databases, cloud, Windows/Linux systems, networks, VoIP, security and IoT-based access control.

2019 — 2020

Data Engineer · Associate Researcher

ICSCYL Foundation — HARMONY project (H2020)

Data engineering and full-stack development, as associate researcher, on the European HARMONY project (IMI2/H2020) in haematology; bioinformatics and clinical data analysis.

2011 — 2014

Full Stack Developer

Freelance

Design and development of web applications; database design and administration.

2009 — 2012

Secondary and Upper-Secondary School Teacher

María Auxiliadora School (Salesians), Salamanca

ICT and Computing teacher; founded the IT Support Centre, systems administration and web development.

EDUCATION

In progress

Master's in Cybersecurity

IMF × UCAV × Deloitte

Cyber intelligence, ethical hacking, secure development, SIEM, reverse engineering and forensic analysis.

2022

PhD in Computer Engineering

Pontifical University of Salamanca (UPSA)

Thesis: “Multi-Agent System for communicating heterogeneous hardware resources through the Modbus industrial protocol in the context of Industry 4.0”.

2009 — 2010

Master's Degree in Secondary and Upper-Secondary Education

Pontifical University of Salamanca (UPSA) · Computer Science specialisation

Dissertation: “An approach to a Curricular Diversification programme”.

2009 — 2010

Bachelor's Degree in Computer Engineering

Catholic University of Murcia (UCAM) · Software and Systems

2005 — 2009

Technical Engineering Degree in Computer Systems

Pontifical University of Salamanca (UPSA) · Networks and Systems

2003 — 2006

Higher Technician in Computer Systems Administration

San José School, Salamanca · Linux, Windows and networks

2008 — 2009

CCNA v4 — Cisco Certified Network Associate

Cisco Networking Academy

CERTIFICATIONS

In progress	Professional Scrum Master — Scrum.org
2024	Certified PHP Developer (Professional Level) — w3schools.com

TECHNICAL KNOW-HOW

Cloud, DevOps & IaC	Azure (App Service, Functions, Static Web Apps, AKS/Container Apps/ACR, VMs, VNet, Application Gateway/Front Door, Entra ID, Key Vault, Storage, SQL Database, Cosmos DB, Monitor/App Insights, Defender/Sentinel), AWS, GCP, Render; Terraform; Docker, Kubernetes; CI/CD with GitHub Actions, Azure DevOps, GitLab CI, Jenkins, Argo CD; SonarQube, Prisma Cloud; VMware vSphere ESXi.
Generative AI & Data	LLM agents and multi-agent orchestration; MCP, Azure OpenAI and model APIs; development assisted by coding agents (Claude Code); content automation (iaparahoy.com); Data Engineering, MLOps and data platforms; Business Intelligence, ETL and API data source integration (REST, OData); data analysis, bioinformatics; multi-agent systems.
Web & Development	PHP 5/7/8, JavaScript/jQuery, HTML5/CSS3; SQL Server, PostgreSQL, MySQL; REST/SOAP APIs, Nginx; payment gateways, Telegram/WhatsApp bots; WordPress, Drupal, PrestaShop; .NET, C/C++; Git; web security (CSP, headers, Nginx hardening); technical SEO (schema.org/JSON-LD, Open Graph) and accessibility (WCAG/ARIA); docs as code (Typst).
Systems, Networks & Security	Linux (Red Hat, CentOS, Debian, Bash), Windows Server/PowerShell; DNS/DHCP, Postfix, Nagios, Grafana; LAN/WAN, L2/L3 switching, VLAN, OSPF/EIGRP, Cisco IOS, Ubiquiti; VoIP: Asterisk, FreePBX, SIP; digital identity (eIDAS2), SAML2/OAuth2/OpenID/2FA, hardening and firewalls (pfSense, MikroTik).
IoT & Industrial	Raspberry Pi, Arduino, ESP8266, LoRa/LoRaWAN; Modbus protocol, PLC Ladder (Siemens Logo/S7), HMI, sensors and actuators; NI DAQ, LabVIEW.

SCIENTIFIC OUTPUT AND R&D&I

Summary	12 publications (Q2 JCR · Springer · MDPI · McGraw-Hill · Dykinson), a granted patent (2026) and a utility model (2022), 9 software registrations and 11 R&D&I projects (PI on SMARTCITY Visio Traffic, HEPA-FOT and AirIOT).
Selected	“Automated Identification of Cylindrical Cells for Enhanced State of Health Assessment in Lithium-Ion Battery Reuse” (MDPI Batteries, Q2, 2024).
Profiles	Google Scholar · UPSA Scientific Portal · full details in the annex.

LANGUAGES AND SKILLS

Spanish	Native
English	B2+ (CEFR)
Skills	Calm, demanding leadership; “bridge” communication between business and tech; prioritisation and incremental delivery; stakeholder alignment; systems thinking; continuous learning.

Annex: scientific output, R&D&I and continuing education

Fernando Lobato Alejano, PhD · Annex to the curriculum vitae · Google Scholar · UPSA Scientific Portal

PUBLICATIONS (12)

2024 — **Automated Identification of Cylindrical Cells for Enhanced State of Health Assessment in Lithium-Ion Battery Reuse**
MDPI Batteries · Article in Q2-indexed journal · mdpi.com/2313-0105/10/9/299

2024 — **From Waste to Wealth: Circular Economy Approaches for Recycled EV Batteries in Energy Storage**
Springer · Book chapter · DOI: 10.1007/978-3-031-66635-3_32

2023 — **Ethics of planned obsolescence in lithium batteries: Environmental and social implications**
Springer · Conference contribution · DOI: 10.1007/978-3-031-38344-1_26

2023 — **LAYER3A Cloud-Login Security Enhancer**
Dykinson · Chapter · UPSA INNOVA 2022/2023

2022 — **Integrating Emotion Recognition Tools for Developing Emotionally Intelligent Agents**
IJIMAI · Article in Q2 JCR journal

2022 — **Multi-Agent System Design-Based Smart Device for Aquatic-Accidents Alerting and Avoidance**
Springer · Book chapter · DOI: 10.1007/978-3-031-14859-0_25

2021 — **AirIOT: Dispositivo de bajo coste para la monitorización y seguimiento de la calidad del aire interior**
UPSA-INNOVA · Book chapter

2020 — **Sistema no intrusivo de prevención de muerte en soledad en el hogar**
UPSA-INNOVA · Book chapter

2020 — **PEPPAA: Plataforma de educación en primeros auxilios**
McGraw-Hill · Book chapter

2020 — **SAPHOC: Sistema de atención primaria en el hogar conectado basado en dispositivos IoT**
UPSA-INNOVA · Book chapter

2019 — **SICOPREMA: Sistema de control y prevención en el medio acuático**
McGraw-Hill · Book chapter

2019 — **SISCOPRI: Sistema de control de usuarios y prevención de riesgos**
UPSA-INNOVA · Book chapter

PATENTS AND UTILITY MODELS

2026 — **Method and system for detecting household electricity consumption patterns indicative of health problems**
Patent granted on 28/04/2026 (application P202131161, 2021) · OEPM · No. ES 2 944 182 B2

2022 — **Telemedicine device and system for primary care at home**
Utility model granted on 20/05/2022 (application 2020) · OEPM · No. ES 1 287 199 Y

SOFTWARE REGISTRATIONS (OEPM, 9)

2022	**CoCoBot**	00/2022/4690
2021	**HEPA-FOT**	00/2022/3013
2021	**AirIOT**	00/2021/3945
2021	**Guardián–IoT**	00/2021/3503
2021	**PEPPAA**	00/2021/256
2020	**SAPHOC**	00/2021/456
2019	**SICOPREMA**	00/2019/3776
2018	**SISCOPRI**	00/2018/3132
2018	**Vending Cloud**	00/2018/1880

R&D&I PROJECTS (11 PROJECTS)

2022 — 2023	**SMARTCITY Visio Traffic** Principal Investigator · **T-CUE Network, UPSA**
2022 — 2023	**Smart battery recycling** Researcher · **USAL + UPSA**
2022	**Social companion robot for COVID-19** Researcher · **UPSA**
2022	**HEPA Filter Optimization Tool** Principal Investigator · **UPSA**
2021	**AirIOT** Principal Investigator · **UPSA**
2019 — 2020	**HARMONY (IMI2, H2020)** Associate Researcher · **IBSAL**
2017 — 2021	**SPMSH · SAPHOC · SICOPREMA · SISCOPRI** Researcher / Principal Investigator · **UPSA (4 projects)**
2017	**Cloud vending platform** Researcher · **UPSA**

AWARDS, RECOGNITIONS AND COMMITTEES

2018	**Winner of the 2nd Interreg cross-border prototype competition.**
2013	**Microsoft Active Professional TechNet Spain.**
2018 — 2022	**UPSA committees:** Quality Assurance Committee, Faculty of Computer Science (2018 — 2022) · Degree Committee, Computer Engineering (2018 — 2022) · Degree Committee, Technology Business Administration (2019 — 2022).
2019 — 2022	**Organising committees:** Business & Student Networking (2022) · 1st Digital Transformation and Technology Ethics Conference (2021) · 4th Cybersecurity Day (2020) · 3rd Cybersecurity Day (2019) · Hack for Good Salamanca (2019).

UNIVERSITY TEACHING (UPSA, 2016 — 2023)

Subjects	Computer Architecture (450 h) · Ethics and Organisational Behaviour (360 h) · Financial Mathematics (180 h) · Programming Fundamentals I and II · Programming Languages · Introduction to Computing · Computer Fundamentals and Technology · Innovation Project Management · Mathematics: Algebra and Analysis · Computer Science Teaching Methods, among others.
Other merits	Supervision of extracurricular internships (UPSA, 2019 — 2022) · Director of the “Cybersecurity” project (Salamanca City Council, 2019) · Graduating-class sponsor (2018, 2019 and 2022).

CONTINUING EDUCATION

Specialisation courses attended

- 2022 Agile entrepreneurship: Lean Startup workshop (ICE UPSA)
- 2022 Python with Django workshop (ICE UPSA)
- 2022 D3.js programming workshop (ICE UPSA)
- 2022 Knowledge transfer in European projects (ICE UPSA)
- 2022 Secure data handling in research (ICE UPSA)
- 2019 Advanced Amazon Web Services course (ICE UPSA)
- 2019 Hands-on RNA-seq data analysis workshop (USAL)
- 2019 Statistical analysis of clinical data (IBSAL)
- 2018 Iberian CEBT competencies (INESPO III Interreg)

Teacher training

- 2022 Class attendance management (ICE UPSA)
- 2021 Virtual e-learning seminars (UCAV)
- 2020 Audiovisual communication strategies in the virtual classroom (ICE UPSA)

Seminars, courses and workshops delivered

- 2022 New professional profiles in the 4th industrial revolution
- 2022 Big Data and its applications
- 2022 Bioinformatics and data analysis during COVID-19
- 2022 Cybersecurity through a web application
- 2022 Installing and customising open-source web apps
- 2021 The fourth revolution: BIG DATA
- 2021 Master’s in Digital Marketing (CICE)
- 2020 Big Data: a revolution that helps save lives
- 2020 Virtualisation
- 2018 Machine and operating system virtualisation
- 2018 Advanced security and scripting for SSH servers

VOLUNTEERING

2002 — 2010	**Youth leisure activities leader** · Centro Juvenil María Auxiliadora (Salamanca).