



Tomás Sánchez Villaluenga

Software Engineer | Applied AI & Automation

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PROFESSIONAL EXPERIENCE

Robotics & AI Software Engineer

Moffett Automation | February 2026 – Present



- Lead development of company **applications from scratch** partner directly with business teams to define requirements, owning end-to-end delivery and supporting **AI adoption** across business workflows.
- Reduce document review and update workload by **~90%** through AI-driven automation, reducing data mismatches and critical client-facing errors.
- Build, develop and maintain **computer vision solutions** for automation and **warehousing** robotics.

AI & Automation Consultant

Santillana (Sanoma Group) | May 2024 – July 2026



- Streamlined AI-assisted translation workflows, reducing turnaround from **~4 months to ~2 weeks** and **costs by ~90%**.
- Supported the automation of curriculum adaptation, reducing processing **time by ~50%** and **costs by ~95%** while bringing delivery in-house.
- Prepared editorial content for AI-assisted processing and retrieval.
- Advised and trained editorial teams on adopting generative AI and workflow automation.

Robotics Software Engineer

Dronomy | October 2025 – January 2026



- Developed UAV perception and autonomy in GNSS-denied environments, including collision avoidance and precision landing.

Critical Embedded Software Engineer

Capgemini Engineering – Airbus Defence and Space | Feb 2023 – Feb 2024



- Verified and validated Airbus MRTT safety-critical software under **DAL-A** requirements; assessed changes and requirements for reliability, traceability and compliance.

PRODUCTION AI & AGENTIC SYSTEMS

HR & Workforce Management Platform [\[Moffett Automation\]](#)

- Built a company-owned platform from scratch in a matter of months for **150+ users**, addressing requirements off-the-shelf tools could not accommodate.
- Owned **requirements discovery**, design, implementation, **deployment and ongoing support**, incorporating department-specific rules and operational edge cases.
- Delivered **Android/iOS** apps and facial-detection-enabled kiosk check-in, with checks for shift inconsistencies, excessive working periods and missing rest intervals.
- Built an **AI agent** to guide users, perform in-app actions and generate reports through **human-in-the-loop workflows**.

Agentic Document Inspector & Orchestrator [\[Moffett Automation\]](#)

- **Built from scratch** a production platform for large document collections, defining configurable validation rules with sales, engineering and finance teams.
- Designed document-specific evaluation layers and **cross-document orchestration** to validate required fields and expected values, detect inconsistencies and contract-critical changes, and track dependencies across business units.
- Enabled iterative **human-in-the-loop** completion, revalidation and update approval, with source-linked findings and an audit trail of changes.
- Integrated corporate data sources and APIs; added **quality evaluation on real documents**, retry and recovery mechanisms, and reusable workflows for new document types.

AI-Powered Real Estate Automation Platform [HG Viajes Agency]

- Built a web application turning structured property data into portal-ready listings tailored to buyer profiles and markets, with one-click generation of text and visual assets.
- Integrated room classification, alternate views, virtual staging and property pre-valuation using location, floor area and room characteristics.

EDUCATION



BSc Electronics and Automation Engineering

Universidad Politécnica de Madrid - Spain | Sep 2018 - Jun 2023

- **Patent P202331053** arising from the BSc thesis
- **Two papers** in microelectronics and low-power electronics.



MSc Robotics and Automation

Universidad Politécnica de Madrid - Spain | Sep 2023 - Jun 2025

- **Grade: 8.2/10. Focus: Computer Vision, Artificial Intelligence and Robot Navigation.**



Advanced Artificial Intelligence programme

University of Oxford - UK | Jun 2025 - Aug 2025

- **Grade: A+. Deep Unsupervised Learning and Computer Vision.**

RESEARCH & PUBLICATIONS

- **Patent P202331053:** impact detection and individual status monitoring.
- **Two Frontiers papers** on microelectronics and low-power electronics for geolocation, risk mitigation and health monitoring.
- **Master's thesis at TU Dortmund:** event-based object prediction and 3D annotations for logistics.

LANGUAGES

Spanish - Native

English - C1

German - A2

TECHNICAL SKILLS

Software Engineering & Deployment

Python | C++ | C# | FastAPI | REST APIs | Pydantic | Git | Docker | Kubernetes | CI/CD

Agentic AI & LLM Engineering

LangChain | LangGraph | CrewAI | Agent Orchestration | Tool Calling | Human-in-the-Loop | MCP | OpenAI, Anthropic and Open-Source APIs

RAG & LLMOps

RAG | Embeddings | Chunking | Vector Databases | Context Engineering | Evaluation | Observability | Guardrails | Cost & Latency Optimisation

Machine Learning, Computer Vision & Robotics

PyTorch | OpenCV | YOLO | Transformers | NeRF | ROS2 | SLAM | LiDAR | 3D & Event-Based Vision