

RAÚL CASTELLANOS SÁNCHEZ

Aerospace Engineer · PhD candidate in Astrophysics (UAM)

Fuenlabrada (Madrid), Spain

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PROFILE

Aerospace engineer and PhD candidate in Astrophysics with four years building, evaluating and documenting predictive and descriptive models in Python: machine learning classifiers, statistical analysis and validation of results under peer review. CFA Level I candidate. Interested in risk model validation at a bank or insurer in Madrid, applying statistical rigour and innovative technical solutions to the review of models.

PROFESSIONAL EXPERIENCE

Automation Consultant — The Optimal Flow, Madrid Dec. 2025 – Oct. 2026

- Design and development of digital systems and process automations for companies on Airtable, Notion, Monday and Slack, using n8n and Make, owning the whole project: system design, technical development and client communication.
- Audit of clients' internal processes with improvement proposals, and AI training for companies.

Predoctoral Researcher — Centro de Astrobiología (CSIC-INTA), Madrid 2021 – 2025

- Building and evaluation of classification models for massive stars in the infrared (PCA, XGBoost, Random Forest) from He and H diagnostic lines, in Python, end to end: data, model, evaluation and documentation.
- Statistical analysis of results and validation of conclusions against observations and the literature.
- Presentation of results at international conferences in English.

Publications: three first-author, peer-reviewed papers, Castellanos et al. 2026a and 2026b (A&A) and 2024 (MNRAS), and co-authorship of four more (A&A 2024-2025). Full list on ADS.

Engineering Intern, Structures department — Airbus Defence & Space, Getafe Sep. – Dec. 2017

EDUCATION

PhD in Astrophysics — Universidad Autónoma de Madrid · CAB (CSIC-INTA) 2021 – present

MSc in Astrophysics — Universidad Complutense de Madrid 2019 – 2020

BSc in Aerospace Engineering — Universidad Politécnica de Madrid 2012 – 2018

TECHNICAL SKILLS

- **Programming:** Python, R, Matlab, SQL, Git, Docker.
- **Statistics and machine learning:** statistical inference, hypothesis testing, PCA, classification models (XGBoost, Random Forest; scikit-learn), model evaluation and validation, time series, Monte Carlo simulation.
- **AI and automation:** local LLMs (Ollama, Qwen), Anthropic API, MCP (Model Context Protocol), n8n, Make, Airtable, Notion, Monday, Slack.
- **Office:** Excel, Word, PowerPoint.

CERTIFICATIONS AND COURSES

- **CFA Level I** — candidate.
- **Model Context Protocol: Advanced Topics** — Anthropic, 2026.
- **n8n: Zero to Hero** — KodeKloud / freeCodeCamp, 2025.
- **IBM Data Science Professional Certificate** (9 courses: Python, SQL, data analysis and visualisation, machine learning) — IBM / Coursera, 2021.
- **Deep Learning Specialization** (5 courses) — DeepLearning.AI / Coursera, 2021.

LANGUAGES

Spanish (native) · English C1 (Trinity College London) · French A2

PROJECTS

Personal projects in production (2026), code at github.com/CasteSan: job-offer radar (Python, local LLM, versioned scoring evaluated against human verdicts, prompt-injection tests), PortfolioHub, an investment portfolio tracker (Next.js, TypeScript, Prisma, PostgreSQL on Neon, on Vercel; calculation engines and 500+ tests public at github.com/CasteSan/portfoliohub-demo) and e-mail classifier with a local LLM (n8n, Docker, Telegram).