

Iker Pacheco Herrero

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Education

University of Alicante

Alicante, Spain

Master's Degree in Artificial Intelligence

September 2026 – Expected July 2027

Coursework: Deep Learning, Machine Learning, NLP, Computer Vision, AI Architectures & Infrastructure.

Bachelor of Science in Biomedical Engineering. Avg: 7.7/10

June 2026

Coursework: Programming Fundamentals (algorithms & data structures), Distributed Systems, Databases.

Experience

Human Robotics

Hybrid

R&D Intern

March 2026 – June 2026

- Implemented a Python algorithm estimating muscle fiber conduction velocity from 32-channel HD-sEMG.
- Designed and ran a 6-subject muscle fatigue study with HD-sEMG arrays to characterize fatigue indicators.

Bimaxpro

Remote

Software Development Intern

July 2025 – August 2025

- Tested and validated REST API endpoints of healthcare web applications using Swagger and Postman.
- Proposed and documented an improved HTTP request-handling implementation for the .NET REST layer.
- Worked in an Agile (Scrum) team with Git-based workflows and Azure DevOps.

Hospital Marina Baixa • *Clinical Engineering Intern*

Villajoyosa, Spain • June 2025 – July 2025

Preventive/corrective maintenance and calibration of medical devices (ventilators, Dopplers).

Technical Projects

Computer Vision System for Pull-Up Technique Analysis

huggingface.co/spaces/ikerph/caillisthenics

- Built an end-to-end pose-estimation system (MediaPipe, OpenCV, SciPy) for rep counting and per-rep kinematics (eccentric/concentric ratio...).
- Developed the Python backend and a Gradio client deployed on Hugging Face Spaces.

Real-Time Endoscopic Polyp Segmentation

github.com/ikerph/endo-tector

- Fine-tuned a 6 MB YOLO-seg model on Kvasir-SEG: mAP@50 of 0.95, median Dice of 0.96, real-time capable.
- Deployed an interactive Gradio web demo for real-time inference.

Explainable AI for Early ALS Detection from Voice (*Degree Thesis, 10/10 • Nominated for CASEIB 2026*)

- Built an explainable ML pipeline (XGBoost, LASSO, SHAP) on acoustic biomarkers from smartphone audio.
- Achieved an AUC of 0.831, 80% sensitivity and 81.2% F1-score under leave-one-out cross-validation.

Publications

Pacheco-Herrero, I., Rico-Juan, J.R., Ballester-Berman, J.D. “Explainable machine learning pipeline for early ALS detection using physiologically interpretable acoustic features from smartphone recordings.” *Biomedical Signal Processing and Control* (under review, 2026).

Skills

Programming: Python, Java, Go, JavaScript, C# (.NET), SQL, MATLAB.

Systems & Tools: Linux, Git, Docker, REST APIs, Azure, Azure DevOps, Postman, Hugging Face Spaces.

ML & Vision: PyTorch, TensorFlow, scikit-learn, XGBoost, SHAP, OpenCV, MediaPipe, Gradio, Streamlit.

Languages: Spanish (Native), Valencian (Native), English (Professional Working Proficiency)