Pablo Garcia Fernandez

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Profile

PhD candidate (**estimated defense: November 2025**) in Computer Vision at the University of Santiago de Compostela (USC) and a researcher at the Centro Singular de Investigacion en Tecnoloxias Intelixentes (CiTIUS). My work explores the frontiers of visual recognition under minimal supervision, with a focus on object detection beyond closed-set assumptions. This includes Open-vocabulary models, Few-shot generalization, and Category-free inference.

Education

PhD   Ph.D. in **INFORMATION TECHNOLOGY RESEARCH (Computer Vision)**. *University of Santiago de Compostela*, Santiago de Compostela.   2022 – Present
- Advisor: Manuel Mucientes Molina and Daniel Cores.
- Research Interests: Object detection, Vision-language Models, Few-shot, Open-vocabulary.

MS   M.Sc. in **COMPUTER VISION**. *University of Santiago de Compostela, Vigo, Coruña and Porto*, Santiago de Compostela.   2021 – 2022
- 9.5/10 | **Master Thesis:** Few-shot object detection through pseudo-label mining.

BS   B.Sc. in **COMPUTER SCIENCE**. *University of Santiago de Compostela*, Santiago de Compostela.   2017 – 2021
- 9.2/10 | **Coursework:** Machine Learning, Computer Vision, Artificial Intelligence, HPC | **Bachelor Thesis:** Object detection and Few-shot learning.

Research Experience

University of Trento, Visiting Ph.D. student   Trento, Italy
2024 – 2025
- Open-vocabulary object detection on X-ray images.
- At Multimedia and Human Understanding Group (MHUG), supervised by Elisa Ricci.

University of Santiago de Compostela, Research Fellow   Santiago de Compostela, Spain
2020 – Present
- Object Detection with Minimal Supervision: From Few-Shot to Open-Vocabulary.
- At Centro Singular de Investigacion en Tecnoloxias Intelixentes (CiTIUS), supervised by Manuel Mucientes.

Gradiant, Intern   Vigo, Spain
2020 – 2020
- Deep Learning-based visual spoofing detection.

Publications

[1] Pablo Garcia-Fernandez, Lorenzo Vaquero, Mingxuan Liu, Feng Xue, Daniel Cores, Nicu Sebe, Manuel Mucientes, and Elisa Ricci. *Superpowering Open-Vocabulary Object Detectors for X-ray Vision*. In IEEE International Conference on Computer Vision (ICCV), 2025.

[2] Pablo Garcia-Fernandez, Daniel Cores, and Manuel Mucientes. *Enhancing few-shot object detection through pseudo-label mining*. Image and Vision Computing 154 (2025): 105379.

[3] Pablo Garcia-Fernandez, Daniel Cores, and Manuel Mucientes. *Exploring Open-Vocabulary Models for Category-Free Detection*. In International Conference on Computer Analysis of Images and Patterns (CAIP), 2025.

Projects

AZOR: Search, Location and Rescue of People on Land, and Fire Fighting and Prevention

- The project addresses the development of an object detection system with RGB and thermal camera to be run on an FPGA on board a UAV for two use cases: (i) search, location and rescue of people on land; (ii) fire prevention and firefighting.

Scholarships and Awards

FPU Predoctoral Fellowship, Spanish Ministry of Universities. Highly competitive national fellowship awarded to outstanding predoctoral candidates in Spain.

Extraordinary Master's Award, University of Santiago de Compostela. Recognition for top-performing students in the Master's program.

Best Master's Thesis Award, University of Santiago de Compostela. Awarded for the best Master's thesis in the university.

Best Bachelor's Thesis Award, University of Santiago de Compostela. Awarded for the best Bachelor's thesis in the university.

Teaching

Automata Theory and Formal Languages, Teaching Assistant (FPU Fellowship), University of Santiago de Compostela.

Object-Oriented Programming, Teaching Assistant (FPU Fellowship), University of Santiago de Compostela.