Víctor Gutiérrez García

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EDUCATION

PhD Researcher — Sep. 2025 - Present
Signal Processing Applications Group - Universidad Politécnica de Madrid — *Madrid, Spain*
- Research topics: Computer Vision, Efficient feature representation and data selection, Low resources architectures, 3D reconstruction
- Draft publication (2ºauthor): PANC: Prior-Aware Normalized Cut for Weakly-Supervised Object Segmentation

MSc Signal Processing and Machine Learning for Big Data — Sep. 2023 - Sep. 2025
Universidad Politécnica de Madrid — *Madrid, Spain*
- Thesis: Design and implementation of a deep learning architecture for joint image segmentation and depth estimation in multi-camera systems

BSc Telecommunications engineering — Sep. 2018 – June 2024
Universidad Politécnica de Madrid — *Madrid, Spain*
- Thesis: Evaluation and optimization of tracking algorithms using OSPA metrics

EXPERIENCE

First stage researcher — Nov. 2024 – Aug. 2025
Signal Processing Applications Group - Universidad Politécnica de Madrid — *Madrid, Spain*
- European project DigiEcoQuarry for quarry digitalization using signal processing and computer vision techniques to estimate stockpile volumes efficiently.
  Draft publication: Stockpile metrology from ground-level georreferenced video footage
- Semantic segmentation of long sequences of videos modifying META's SAM2 processing pipeline

Software Engineer — Sep. 2022 – Aug. 2024
Advanced Radar Technologies — *Madrid, Spain*
- Implementation of radar tracking algorithms based on literature
- Implementation of tracker metrics to verify and optimize tracking algorithms based on state-of-the-art papers. Improved tracker performance by 15% compared to the previous version
- Design and implementation of DBSCAN algorithm to clusterize radar tracks based on motion and dynamics
- Maintenance and implementation of new features on the radar simulation application for the company's radar suite
- Analysis and implementation of a classifier to distinguish between different classes of targets, which improved the system significantly
- Development of tools for the visualization of data obtained from company applications
- Implemented a MATLAB application and GUI for post-processing radar measurements and characterizing its error
- Extensive hours of debugging experience

Private tutor — Sep. 2018 – Mar.2020
Freelance — *Madrid, Spain*
- Private tutoring in mathematics, physics and chemistry for high school students

PROJECTS

Telecoemprende | *Vice-President* — June 2021 – July 2024
- During my time at the university, I organized activities in collaboration with different companies to enhance the confidence of the students to develop their own ideas. We also prepared courses on cybersecurity, which received great participation and fundraising.

TECHNICAL SKILLS

Languages: C#, Python (PyTorch, OpenCV), MATLAB, LaTeX
Developer Tools: Git, VS Code, Visual Studio, JIRA software, Data Flow diagrams, Clean Code, Clean documentation, Kanban board organization
Soft skills: Organization, leadership, teamwork, critical thinking, decision making, sympathy