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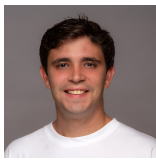
Francisco Ramos

Machine Learning Engineer



Skills

Tools and Languages	C, C++, Python (Tensorflow, Pytorch, OpenCV, Pandas, Pyspark), R (GGPlot2), SQL, ROS2 , Matlab, Bash/Shell, Git, Docker, Web design
Quantitative Research	Robotics, Control Systems, Electronics, Computer Vision, Deep Learning and AI
Communication	English (TOEFL iBT: 102 & Advanced CAE - C1), French (A2), Spanish (Native)

Technical Experience

Researcher / Robot Open Autonomous Racing (ROAR) **AUG 2023 — MAY 2023**
AI Racing Tech - UC Berkeley *Berkeley, California*

Robotics & Machine Learning Engineer **FEB 2022 — AUG 2022**
Advanced Center for Aerospace Technologies - CATEC *Seville, Spain*

- Utilized High Altitude Platform Station (HAPS) and Computer Vision techniques to apply photogrammetry for crop monitoring, enhancing crop management efficiency and analysis accuracy.
- Incorporated Object Detection algorithms into unmanned aerial vehicles (UAVs) to enhance aerial safety by enabling effective detect and avoid algorithms.
- Explored and implemented state-of-the-art object detection models utilizing transformers, evaluating their performance on embedded systems. This process aided in selecting the most suitable model for integration into onboard systems.
- Utilized unsupervised learning models for the implementation and training of an anomaly detection system in road inspections to enhance infrastructure monitoring and maintenance.
- Publication: Benchmark on real-time long-range aircraft detection for safe RPAS operations. DOI: 10.1007/978-3-031-21062-4_28

Research intern / Application of ML and DL techniques for the optimization of an EV charging station **SEP 2021 — JUL 2022**
Systems Engineering and Automation Department US *Seville, Spain*

- Researched, developed models for, and executed the construction of an integrated system simulator for an Electric Vehicle (EV) charging station supplemented with renewable energy sources.
- Enhanced operational efficiency through the utilization of time-series deep learning models to forecast both the charging load and energy production, thus facilitating management optimization.
- Publication: Optimized Operation of an Electric Vehicle Charging Station with Photovoltaic Support and Vehicle-to-Grid Implementation. DOI:10.1007/978-3-031-10047-5_62

Engineer / Electric Powertrain & Electronic systems department. **SEP 2019 — AUG 2021**
US Racing *Seville, Spain*

- Analysis and description of the high and low voltage electrical systems pertaining to the electric motorbike.
- Creation and specification of key components such as the Battery Management System (BMS), inverter, motor, charger, and telemetry in the overall design.

Education

Master of Engineering in Control of Robotics and Autonomous Systems, *University of California Berkeley* 2023 — 2024
- CS 288: Natural Language Processing, CS 198: Deep Learning for Visual Data, ME 249: Machine Learning Tools for Modeling Energy Transport and Conversion Processes, ME 236: Control of Unmanned Aerial Vehicles

Master of Science in Mechatronics, Robotics and Automation Engineering, *Universidad Politécnica de Madrid, UPM* 2022 — 2023
- Project manager: Autonomous UAV System: Drone for Autonomous Drone Racing Competition (12 students)

Bachelor of Science in Mechatronics, Robotics and Automation Engineering *Universidad de Sevilla, ETSI* 2018 — 2022
- Top 1%, Cumulative GPA: 3.777, Major field GPA: 3.836, 13 honors (with distinction)
- Final degree project: “Charge demand and renewable generation forecasting with Deep Learning: application to electric vehicle station optimization.” (Awarded with Honours)
- Other projects: Pan & Tilt servo system autonomously controlled using Facial, Hand and Color Detection

Additional Tranining Courses :
- TensorFlow Developer Specialization - Professional Certificate (4 courses), *DeepLearning.AI* 2022
- Introduction to the Internet of Things and Embedded Systems, *University of California, Irvine* 2020
- Deep Learning Specialization by Andrew NG (5 courses), *DeepLearning.AI* 2019-2021

Internship, *Rockbrook International - Dublin, Ireland* 2012

Activities and Achievements

Prize for the Best Final Degree Project awarded by the Endesa Chair - XVIII Edition 2023
Captain of the University football team of the School of Engineering of Seville 2018 — 2022