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# Francisco Ramos

## Robotics and Automation Engineer

I have worked as a research intern at the Higher Technical School of Engineering (ETSI) in Seville at the prestigious Systems Engineering and Automation Department. I have also worked as a research intern at the Advanced Centre for Aerospace Technologies (CATEC) in Seville. I consider myself a self-taught person with a great capacity for learning. I am interested in Robotics, Control and Automation Systems, Electronics, Machine Learning, Connected Industry and Internet of Things.

### SKILLS

<b>Tools and Languages</b>	C, C++, Python (Tensorflow, Pytorch, OpenCV, Pandas, Pyspark), R (GGPlot2), SQL, Bash/Shell, ROS, Matlab, Git, HTML, Docker
<b>Quantitative Research</b>	Control Systems, Robotics, Electronics, Automation, Machine Learning and Computer Vision
<b>Communication</b>	English (TOEFL iBT: 102 & Advanced CAE - C1), French (A2), Spanish (Native)

### TECHNICAL EXPERIENCE

<b>Robotics &amp; Machine Learning Engineer</b>	<b>FEB 2022 — AUG 2022</b>
<i>Advanced Center for Aerospace Technologies - CATEC</i>	<i>Seville, Spain</i>

- Crop monitoring using photogrammetry obtained by HAPS (High Altitude Platform Station).
- Implementation of detect and avoid algorithms in unmanned aerial vehicles using Object Detection.
- Study and implementation of state-of-the-art object detection models with transformers, benchmark in embedded systems.
- Benchmark on real-time long-range aircraft detection for safe RPAS operations. DOI: [10.1007/978-3-031-21062-4\\_28](https://doi.org/10.1007/978-3-031-21062-4_28)

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

- Study, modeling, and implementation of a unified system simulator of an EV charging station with renewable support.
- Management optimization using time-series deep learning models to forecast charging load and energy production.
- 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](https://doi.org/10.1007/978-3-031-10047-5_62)

<b>Engineer / Electric Powertrain &amp; Electronic systems department.</b>	<b>SEP 2019 — AUG 2021</b>
<i>US Racing</i>	<i>Seville, Spain</i>

- High and low voltage electrical system of the electric motorbike.
- Design of Battery Management System (BMS), inverter, motor, charger and telemetry.

### EDUCATION

<b>MSc in Industrial Engineering, Control and Automation concentration, Universidad Politécnica de Madrid, UPM</b>	<b>2022 — 2023</b>
- Project manager: Autonomous Unmanned Aerial Vehicle System: Drone for Autonomous Drone Racing Competition (12 students)	

<b>BSc in Industrial Engineering, Control and Automation concentration, Universidad de Sevilla, ETSI</b>	<b>2018 — 2022</b>
- 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 Training Courses :

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

<b>Internship, Rockbrook International - Dublin, Ireland</b>	2012
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### ACTIVITIES AND ACHIEVEMENTS

Prize for the Best Final Degree Project awarded by the Endesa Chair - XVIII Edition	2023
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Player of the UPM School of Industrial Engineering soccer team	2022
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Team manager in catering, Ulivo, <i>Seville</i>	2021 — 2022
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Captain of the University football team of the School of Engineering of Seville	2018 — 2022
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Collaboration grant from the ministry of education	2021
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Volunteer, solidarity evenings and visiting disabled people.	2018 — 2022
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Member of the teaching staff. Confirmation Catechist. <i>Claret Seville School</i>	2020 — 2021
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Excellence Grants in Colegio Mayor Guadaira	2018
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Football player (Captain) 1st provincial division <i>Cádiz</i>	2017 — 2018
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Elemental Music Grade Instrument: Violin. <i>Music Conservatory Rafael Taboada. Cádiz</i>	2010
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