

Pablo Soler

Electrical & Software Engineer



Personal Information



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Education

2023 – 2025 *ETH Zurich University, Switzerland*
Electrical Engineering & Information Technology M. Sc.
Minor: Signal Processing and Machine Learning

2019 – 2023 *RWTH Aachen University, Germany*
Electrical Engineering & Information Technology B. Sc.
Minor: Communications and Information Technology

Experience

Internship at Ford's ADAS Team 2023
Ford Research and Innovation Center Aachen

Research and deploy an operator detection and tracking pipeline using pose estimation, person identification and depth estimation. My contributions resulted in a person-following prototype car and currently have a pending patent. Additionally, I studied vision algorithms for road conditions monitoring, using data augmentation techniques and model quantization.

Research Assistant 2022 - 2023
Institute for Power Electronics and Electric Drives - RWTH

The project involved using finite element analysis simulations, wavelet transformation and convolutional neural networks for real-time fault detection in the electrical drives of robo-taxis.

The resulting publication presents a workflow to model a Permanent Magnet Synchronous Machine (PMSM) with different fault severity levels and proposes a novel CNN-based approach for detection and severity estimation of Inter-turn Short Circuit (ITSC) faults that is highly accurate.

Lab Project Supervisor 2021 - 2022
Institute for Automation of Complex Systems - RWTH

Supervisor at a computer science lab for electrical and computer engineering students for a C++ project. The course consisted in simulating a network of cars driving in a virtual environment.

Lego Robotics Teacher 2024
Little Scientists

Electrical Engineering Internship 2019
SPASAL Electrónica e Informática

Skills

Programming Skills

Proficient:

C++, Python, Pytorch, libtorch, opencv, ONNX, IsaacLab, IsaacSim, ROS, gsplat, CUDA, W&B

Familiar:

C#, MATLAB, Simulink, PLECS, JMAG, huggingface, Tensorflow, OpenAI Gym

Language Skills

- Spanish (C2), German (C2)
- English (C1), Catalan (C1)
- French (B2)

Awards

DP Competition Winner 2024
1st place in a Dynamic Programming contest by Prof. Dr. Raffaello D'Andrea for optimal trajectory algorithms at ETH Zürich

RWTH Education Fund 2020-2022
Scholarship for outstanding academic achievement

RWTH Aachen Dean's List 2020
Award for top 5% academic performance

Henry Ford Scholarship 2021
Scholarship for outstanding academic achievement

DPG Award 2019
Award by the German Physical Society for academic excellence in physics on the Abitur exam

Publications

“HoloSpot: Intuitive Object Manipulation via Mixed Reality Drag-and-Drop”; P. Soler et al., Submitted to ICRA 25

“Classification of Inter-Turn Short Circuit Faults in Field-Oriented Controlled Electrical Machines using Convolutional Neural Networks”; D. Pham, P. Soler, et. al. , IEEE IEMDC23