Pablo Soler

Electrical & Software Engineer

Personal Information

Website
LinkedIn
19.03.2001, Barcelona, Spain

Bülachstrasse 11A, 8057, Zürich
(+41) 772 362 227
soler.garcia.pablo@gmail.com

Education

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

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

Research and Experience

Main Contributor of HoloSpot 2024
Computer Vision and Geometry Lab, ETH Zürich
A Hololens2 interface projecting a 3D representation of a scanned room as a scaled-down hologram, allowing users to manipulate objects using a drag-and-drop interface. The Spot robot then executes the requested action.

Main Contributor of *Multi-Modal Gaussian Splatting* 2024
Robotic Systems Lab, ETH Zürich
Augmenting Gaussian splats with task-specific semantic embeddings generated with LLMs to use as sensor input in reinforcement learning for navigation and manipulation tasks. Pending Submission to RA-L.

Main Contributor of *Walk the Dog* 2024
Computer Vision Lab, ETH Zürich
With LiDAR and cameras mounted on a legged robot, we follow a target using Vision transformers for identification and 2D costmaps for navigation.

Research Assistant in AnRox Project 2022 - 2023
Institute for Power Electronics and Electric Drives, RWTH
Modeling electrical drives of robo-taxis with different fault severity levels using finite element analysis simulations and applying a Wavelet-CNN-based approach for real-time detection and severity estimation of faults.

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

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.

Skills

Skills
Deep Learning, Computer Vision, Reinforcement Learning, Dynamic Programming, Robotics, Gaussian Splatting, Model Optimization and Quantization, World Models, Mixed Reality

Programming Skills
C++, Python, Pytorch, libtorch, C#, opencv, ONNX, IsaacLab, MATLAB, Simulink, PLECS, huggingface, ROS, 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