

# ORIOL MARTÍNEZ FITÉ

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GitHub [@fetty31](#)

📍 Barcelona, Spain

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## ROBOTICS ENGINEER

Highly motivated, proactive and dedicated to continuous learning, I thrive in dynamic environments that challenge me to grow. My primary interest lies in robotics, a field that, from my point of view, represents the perfect synergy between classical physics and computer science—two core engineering disciplines that deeply inspire me.

I am particularly fascinated by the way robotics integrates mechanical systems, control theory and computer vision to create intelligent and autonomous machines. I am driven to deepen my expertise in this field, continuously expanding my knowledge and refining my skills to be able to contribute to innovative robotic solutions that advance technology and improve our society.

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## PROFESSIONAL EXPERIENCE

### Vaive Logistics - IRI CSIC-UPC

April 2024 - Present

Research Engineer

[Vaive Logistics](#) is a spin-off company from Universitat Politècnica de Catalunya (UPC) specializing in autonomous last-mile delivery solutions. Their flagship product, *Ona*, is a six-wheeled, battery-electric robot with a net payload capacity of up to 100 kg. Together with the [UPC Robotics Institute](#) (IRI) we are developing a reliable autonomous driving pipeline for unstructured and urban environments.

*Accomplishments:*

- Developed [Fast-LIMO](#), a tightly coupled and real time LiDAR-Inertial SLAM algorithm. This solution enabled cm-scale localization accuracy in GPS-denied environments, greatly expanding *Ona*'s ODD.
- Developed [MaPPI](#) a custom implementation of the Model Predictive Path Integral (MPPI) algorithm, taking into account a double-ackermann kinematic model for state propagation. The MPPI acted as the main controller of *Ona*, greatly improving its autonomous driving maneuverability.
- Co-developed a map-based localization plugin for [Fast-LIMO](#) using KISS-Matcher, which ensured localization robustness inside *Ona*'s ODD.

### SEAT-CUPRA Internship

Sept. 2023 - Feb. 2024

ADAS R&D Engineer

Autonomous Vehicles research in the ADAS R&D department. C++ software developer for an L3 Autonomous Driving prototype ([DIANA project](#)).

*Accomplishments:*

- Developed a GG-based velocity profile generator for an L3 Autonomous Driving prototype.
- Implemented an *offline* path planning module prioritizing comfort and stability of the L3 prototype during the autonomous driving demonstrations within SEAT-CUPRA's facilities.
- Developed a computer vision module for the Hardware-In-the-Loop (HIL) department. The main objective was to be able to detect black screen errors of the Human Machine Interface (HMI) of production cars (MQBevo).

**BCN eMotorsport**  
**Autonomous Driving Main Responsible**  
**Vehicle Controls Chief**

Sept. 2022 - Aug. 2023

Autonomous Driving main responsible. Mainly focused on motion planning and Model Predictive Control (MPC).

*Accomplishments:*

- Winning (**P1**) in the Driverless Skidpad event in the Formula Student Spain (FSS) competition.
- **P2** in the Trackdrive event in the FSS competition.
- Developed [Tailored-MPC](#), a Non Linear Model Predictive Controller (NMPC) handling the lateral behaviour of CAT15X's race car.
- Developed [Cruise-Control](#), an Adaptive Cruise Controller handling the longitudinal behaviour of CAT15X's race car.
- Developed [FSDriverless](#), an autonomous driving simulator built on top of IPG CarMaker together with ROS.

**BCN eMotorsport**  
**Vehicle Controls Engineer**

Sept. 2021 - Sept 2022

Autonomous Driving engineer. Working on trajectory and vehicle dynamics optimization.

*Accomplishments:*

- Developed [Trajectory-Optimizer](#), a model-based trajectory optimization software that is able to compute the optimal race-line given a track while maximizing dynamic racing performance.

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## EDUCATION

**Automation and Control Engineering (MSc)**

Sept. 2025 - Present

Politecnico di Milano - Double degree program

**Automatic Control and Robotics (MSc)**

Sept. 2024 - Present

Universitat Politècnica de Catalunya, UPC - ETSEIB

**Industrial Technologies Engineering (BSc)**

Sept. 2019 - Jan 2024

Universitat Politècnica de Catalunya, UPC - ETSEIB

**Final Degree Thesis:** "Motion planning and control pipeline for a Formula Student autonomous vehicle" (With Honors) - Link: <http://hdl.handle.net/2117/405362>

- Designed and implemented a comprehensive autonomous driving control pipeline for BCNeMotorsport's CAT15X race car, integrating state-of-the-art optimization-based motion planning and control algorithms. See results in: <https://youtu.be/mk9U0IRWr-0?feature=shared>

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## LANGUAGES

- **Catalan:** Native
- **Spanish:** Native
- **English:** C1 Advanced (CAE)
- **French:** DELF A2

## SKILLS

- **C/C++**
- **Python**
- **ROS**
- **GNU/Linux**
- **CAN**
- **Git**
- **MATLAB & Simulink**
- **SLAM**
- **Motion Planning**
- **Computer Vision**

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## OTHER INTERESTS

- **Artificial Intelligence** - mostly Deep Learning applied in computer vision tasks and Reinforcement Learning.
- **Embedded Systems & IoT** – microcontrollers, edge AI and Real-Time OS.