# ALEIX FERRER HIDALGO

## ELECTRONICS HARDWARE & EMBEDDED ENGINEER

info@ferrerengineering.com | ferrerengineering.com/aleix

Electronics engineering graduate pursuing a Master's in Aerospace Engineering, Embedded Systems specialization, at ISAE-SUPAERO. Independent engineer delivering custom PCB design and STM32 firmware through Ferrer Engineering, with automotive hardware experience at EDAG. Focus: schematic capture, multilayer PCB layout, component selection, prototyping and board-level debugging.

## PROFESSIONAL EXPERIENCE

### Independent Electronics & Embedded Engineer | Ferrer Engineering

Jun 2025 - Present | Self-employed

- Deliver custom PCBs from requirements, schematics and multilayer layout through component selection, BOM/DFM and production-file preparation.
- Design STM32-based boards integrating analog/digital interfaces, power stages, sensing and communication buses; develop matching embedded C/C++ firmware.
- Support assembly, soldering/rework, board-level debugging and design reviews using oscilloscopes, logic analyzers and bench equipment.

### Hardware Engineer (Automotive) | EDAG Group

Jul 2024 - Jun 2025

- Contributed to electronics requirements, PCB development and hardware testing for automotive engineering projects.
- Performed bench troubleshooting, verification/documentation and embedded C development within a multidisciplinary team.

## EDUCATION

### Master's studies in Aerospace Engineering | ISAE-SUPAERO

2025 - Present | Embedded Systems specialization | In progress

### BSc in Telecommunications Electronic Engineering | Universitat de Barcelona

2021 - 2025 | Bachelor's thesis: 10/10 and Matrícula de Honor (thesis distinction)

## SELECTED PUBLIC ENGINEERING PROJECTS

### Portable CAN / UART Analyzer | Bachelor's thesis

Custom electronics, embedded C firmware and an LVGL capacitive-touch interface for protocol diagnostics. Working prototype; protocol-specific validation ongoing.

### MAVLink Gateway | Aerospace embedded systems

Embedded interface for PX4 and ArduPilot communication integration, with its PCB assembly available for inspection in the public portfolio.

### BLDC Controller | Motor control & power electronics

Brushless DC motor-control PCB design presented through its original board assembly. Public case study focuses on the physical hardware design.

## TECHNICAL SKILLS

**Hardware:** Analog/digital circuits, schematic capture, multilayer PCB, component selection, BOM/DFM, prototype testing and debugging; motor-drive electronics, sensing and PWM.

**Firmware:** Embedded C/C++, STM32 F4/G4, CAN/CAN-FD, UART, SPI, I2C, LVGL, RTOS and real-time control.

**Tools:** Altium Designer, KiCad, EasyEDA Pro, STM32CubeIDE, Git, Python and Linux. Cadence Virtuoso/Innovus (academic coursework). Oscilloscopes, logic analyzers, bench PSU and soldering/rework.

**Languages:** Spanish and Catalan: native | English: C1 (Cambridge) | French: B1