Florian Pasco

Hardware Engineer – Mixed-Signal Electronics and Embedded Systems
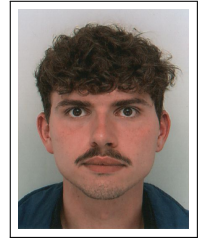
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Profile

Electronics engineer specialised in mixed-signal board design (analog, digital, power) and embedded systems integration. Experienced in complex PCB design, power conversion, signal conditioning, and hardware validation. Combined expertise in reverse engineering, testing, and firmware integration. Systematic approach focused on reliability, eco-design, and energy optimisation.

Key Skills

Electronic Design	Schematic design, LDO power supplies, analog signal chains, motor control, CAN / UART / SPI / I2C interfaces.
CAD and Simulation	Altium, KiCad, Proteus, LTSpice, MATLAB/Simulink.
Prototyping and Testing	Oscilloscope, logic analyser, load testing, functional validation.
Eco-Design	Life-cycle analysis, component selection, energy consumption reduction.
Embedded Systems	Bare metal, RTOS, Linux, C, C++, Python, STM32CubeIDE.
Technical Comm.	Report writing, design justification, client interactions.

Professional Experience

07/2025 – Present

Electronics Engineer – EV Charger Benchmarking and Reverse Engineering, *BMW Group*, Munich, Germany, Final-Year Internship
- Comprehensive technical analysis of AC charging stations: architecture, efficiency, reliability, communication.
- Reverse engineering of PCBs and power stages using BoardMapper and LTSpice.
- Performance measurements under load: current and power.
- Assessment of connected features (Wi-Fi, OCPP, solar integration).
- Creation of multi-criteria matrices and reparability indicators for product comparison.
- Development of hardware for next-generation AC chargers.

07/2024 – 01/2025

Electronics Engineer Assistant – Diagnostics and Reverse Engineering, *Breizelec*, Châteaulin, France, Internship
- Diagnostics of mixed agricultural control units: identification and classification of electrical faults.
- Board reverse engineering: schematic reconstruction, functional signal analysis.
- CAN test bench design: microcontroller-based simulators for system validation.
- Circuit repair: precision soldering, SMD component replacement, post-repair verification.
- Writing standardised technical reports and summarising fault causes.

07/2023 – 08/2023

Electronics Technician – Ground Autonomous Systems, *AgriProTech*, Quimperlé, France, Internship
- Design and testing of embedded electronic modules for autonomous vehicles.
- Firmware integration with ArduPilot: motor control, navigation, and radio communication.
- GPS RTK system configuration and calibration: centimetre-level accuracy.
- Validation of power and analog interface subassemblies.

Education

02/2024 – 12/2025	**Master's Degree in Industrial Electronics and Computer Engineering**, *ENIB – École Nationale d'Ingénieurs de Brest*, France Specialisation: analog electronics, power electronics, embedded systems, automation, and mechatronics.
09/2020 – 02/2024	**Bachelor's Degree – Industrial Electronics and Computer Engineering**, *ENIB*, France General training in electronic design, systems integration, and industrial control.

Technical Projects

HeaterControlShield	STM32 shield for thermal regulation: isolated power supply, MOSFET driving, analog measurement, UART communication. Functional testing and bench validation.
HV2LV-PowerJST	DC–DC converter design 4.8–15 V $\rightarrow$ 3.3 V.
Esp32Int	Modular ESP32 interface board development: boot mode, JST connectors, decoupling.
UsbUartBridge	USB–UART bridge design using CP2102.
AMS1117 3.3V Reverse-Engineering	Full reverse engineering of AMS1117 linear regulator: equivalent schematic and PCB reconstruction.
BoardMapper	Python tool development to generate PCB placement maps, facilitating BOM creation in reverse engineering. Improves technical documentation and component identification.

Soft Skills

Analytical mindset, precision, problem-solving, teamwork, interdisciplinary approach.

Volunteering

2023	**Junior Network Coordinator**, *Open Bidouille Camp Brest*, Brest, France Coordinated a network of 20 maker associations; organised public events with over 2,000 participants.
2022–2023	**Secretary**, *ENIB Cafeteria Association*, Brest, France Planned and managed more than 40 student events and logistics for 300–400 participants per event.

Languages

French	Native
English	C1 – Technical and professional proficiency
German	A2 – Basic, improving

Interests

Circuit simulation, eco-design, robotics, open-source hardware, running.

Munich, 26 October 2025