

Daniel BAL

HAGUENAU | +33 6 56 74 58 93 | contact@daniel-bal.fr | Driving licence B, own vehicle

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Seeking a work-study position or internship

PROFESSIONAL EXPERIENCE

- Sept. 2023 – July 2026

Teaching Assistant (AED) — Physics & Chemistry | Collège Kléber, Haguenau
Leading classes and lab sessions, lesson preparation, student support
- since May 2025

Company Director | BALTEC INNOVATION, Strasbourg
Construction site management, project management, client relations
- Aug. 2025

Service Worker — Kitchen service staff | Central Hospital, Baden-Baden (Germany)
Immersion in a German-speaking professional environment
- May - June 2024

Production Operator Intern | NORCAN / SHERPA, Haguenau
Assembly of aluminium structures, reading technical drawings, quality control
- June - Aug. 2021 & 2022

Production Operator | SEW USOCOME and DISTEL, Brumath
Assembly of gear motors and aluminium structures, reading technical drawings, quality

PERSONAL AND PROFESSIONAL PROJECTS

see Portfolio → www.daniel-bal.fr

- igus Rebel 6-axis robotic arm with integrated vision – 2026**
Python/ROS2/Movelt2, YOLO11 vision + RealSense D435, LLM voice control, LSTM autoencoder for anomaly detection after 100 cycles
- Multi-melody digital alarm clock on FPGA — 2026**
Hardware/software co-design in Quartus Prime: Nios II processor, C program (interrupts, timers, multi-melody audio generation, push-button interface)
- Hackathon — AI-based predictive maintenance – 2025**
First team out of 10 to identify all 6 abnormal signals. ML classification of acoustic signals from an industrial motor: final CNN + 1D LSTM architecture, several approaches compared — FFT / autoencoder / CNN on spectrograms
- Portable 3D-printed electromechanical winch – 2025**
Mechanical design in Inventor — gear and drum sizing, PLA fabrication, 30 kg lifting capacity, USB-C charging

EDUCATION

Faculty of Physics & Engineering, Strasbourg	2025-2027	Master's in Mechatronics, Energy and Intelligent Systems (MESI) First year in progress, ranked 2nd in class (Honours)
	2021-2025	Bachelor's in Engineering Sciences Mechatronics track

Continuous self-learning · Constant technical curiosity · Open to internal and external training

SOFT SKILLS		LANGUAGES	INTERESTS
Autonomy	Rigour	English – B2	3D printing
Technical curiosity	Analytical thinking	German – A2	Sports
Adaptability	Hands-on mindset	French / Turkish – native	AI & Robotics watch

Tools & software : Inventor Pro, Matlab, Solidworks, FEM Abaqus, Siemens Step7, Altium & KiCad (PCB Design), Comsol, Quartus Prime, Linux, OpenCV, Computer Vision, ROS2 Humble, FEMM 4.2, Python, C/C++, Machine Learning, Deep Learning