Daniel BAL

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

LinkedIn : www.linkedin.com/in/daniel-bal-2885062b3

Seeking a work-study position or internship

PROFESSIONAL EXPERIENCE

Aug. 2026 — **General Worker | Atmos Space Cargo, Lichtenau (Germany)**
Renovation work in an aerospace industrial environment, English as working language

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

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/MoveIt2, 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

Mechanical design and software development — 2026
Mechanical design (Inventor): key head and its mould package (STEP/DWG/STL deliverables). Software development: business applications and websites, from specification to production deployment.

EDUCATION

Faculty of Physics & Engineering, Strasbourg

2025-2027 — **Master's in Mechatronics, Energy and Intelligent Systems (MESI)**
Second year in progress — ranked 1st in class (first year, Honours)

2021-2025 — **Bachelor's in Engineering Sciences**
Mechatronics track

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

SOFT SKILLS

Autonomy | Rigour
Technical curiosity | Analytical thinking
Adaptability | Hands-on mindset

LANGUAGES

English – B2
German – A2
French – native

INTERESTS

3D printing
Biomimicry (phototropism, soft robotics)
Wireless power transfer

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