

Gauthier Bonhomme

MSc student in Mechatronics & Control Engineering — Arts et Métiers (ENSAM)

Seeking a 6-month graduation internship in **Robotics** · **Computer Vision** · **Applied AI** — available from early 2027

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Portfolio: gauthier-bonhomme.github.io • GitHub: github.com/gauthier-bonhomme

Education

Arts et Métiers (ENSAM) ↗

Aix-en-Provence, France

Diplôme d'Ingénieur (MSc in Engineering), Mechatronics & Control track

2024 – 2027

Coursework: automatic control (state-space, discrete-time control, RST synthesis, Smith predictor), electric drives (field-oriented control), signal processing, finite-element analysis, manufacturing processes.

Classe préparatoire PT ↗ — Lycée Mermoz

Montpellier, France

Intensive undergraduate programme in mathematics, physics & engineering science

2021 – 2024

Projects

Real-time video analytics & face recognition — Hall b gym

2025 – present

- Designed and deployed a multi-camera person-detection pipeline: Frigate NVR on Docker/Linux, RTSP streams from the site's existing CCTV, real-time deep-learning inference on an NVIDIA RTX 3060.
- Now adding a face-recognition stage (InsightFace) for membership-fraud detection; carried out the GDPR (Art. 9) / CNIL impact assessment required before processing biometric data.

GymLocator — geospatial site-selection tool, Python [live demo](#) ↗

2025

- Bi-criteria scoring combining INSEE population density (Gaussian kernel) with OpenStreetMap competitor pressure; heat-map output used to select the gym's actual location — in production since opening. NumPy, Pandas, Geopy, Matplotlib.

Servo-axis design — mechatronics coursework

2026

- Sized a complete motorised linear axis: ball-screw selection, motor/load inertia matching, trapezoidal velocity profiles, RMS (thermal-equivalent) torque verification against the duty cycle.

CNC machining of a crankshaft — CAM programming [report](#) ↗

2025

- Full CAM workflow in Fusion 360 (turning, milling, threading); produced on a DMG MORI CTX Gamma 1250 TC turn-mill; adapted programs to real machine constraints (vibration, axis limits).

Also: ESP32 electronics prototyping with 3D-printed parts; fracture-mechanics FEA within 1% of ASTM E399-90 analytical values ([report](#) ↗); rebuilt [hallb.fr](#) ↗ — full write-ups on the [portfolio](#) ↗.

Experience

Hall b — fitness startup

Saint-Dionisy, France

Founding team (summer internship)

Jun – Aug 2025

End-to-end launch of the facility: site selection (GymLocator), video-surveillance and web infrastructure ([hallb.fr](#)), social-media channels built from zero.

ÉPOPÉE GADZ — student association, Europ'Raid 2026

2025 – 2026

Treasurer — budget and sponsorship for an 8,000-km humanitarian road trip across Europe

Skills

Programming: Python (NumPy, Pandas, OpenCV, Matplotlib), Git, Docker, Linux, HTML/CSS

AI & computer vision: deployment of machine-learning inference (InsightFace face recognition, Frigate object detection), NVIDIA GPU acceleration, GDPR/DPIA compliance for biometric systems

Control & embedded: PID and RST controller synthesis, state-space modelling, discrete-time control, field-oriented motor control (FOC), ESP32

CAD & simulation: CATIA V5, Fusion 360 (CAM), 3DEXperience, Abaqus (FEA), FDM 3D printing

Languages: French (native), English (C1)

Interests

Mountain & endurance: 100-km ultra-trail finisher (5,000 m elevation gain), preparing UTMB; alpine routes in autonomy; bouldering (7B); judo black belt.