

Emilien L'Haridon

Machine Learning and R&D Engineer

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Nantes, France | Relocating to Chicago, IL | V.I.E. eligible

Summary

Machine learning engineer in R&D. Takes deep learning methods from papers and builds the data, training and evaluation pipeline that turns them into tools colleagues use. Current work is computer vision on aerial and satellite imagery.

Skills

Programming: Python, C++, Bash

ML and CV: PyTorch, TensorFlow, OpenCV, NumPy, pandas, Hugging Face, MLflow

Methods: Deep learning (CNN, GAN, transformer), segmentation, super-resolution, change detection, transfer learning, dataset curation

Tools: Git and GitLab, Linux, SSH, Jupyter, AI coding agents (Claude Code, Codex)

Languages: French (native), English (fluent, TOEIC 990/990)

Experience

R&D Engineer, Computer Vision, GEOFIT, Nantes, France

Oct 2025 – Present

Geospatial surveying and mapping company. Hired full-time after the research internship below.

- Co-developed a change-detection system for a regional public-sector tender and owned its optical branch: super-resolution of Sentinel-2 imagery from 10 m to 2.5 m, plus segmentation. On a 134 km² pilot, the combined system reached 76% overall accuracy with a 14.9% false-alert rate. Wrote parts of the technical proposal.
- Train and evaluate PyTorch segmentation models: roads and buildings on Sentinel-2, solar panels on 5 cm aerial imagery.
- Brought super-resolution into three applied projects, including the tender.
- Set up reproducible experiments (config files, fixed validation with geographic holdouts, logging) and turn prototypes into Python tools colleagues run themselves.
- Supervised the technical work of a six-month change-detection internship for three months.

Research Intern, Computer Vision, GEOFIT, Nantes, France

Mar 2025 – Aug 2025

- Final-year thesis on super-resolution for satellite imagery. Implemented and compared 9 CNN, GAN and transformer models on aerial and Sentinel-2 imagery.
- Showed that the most realistic-looking model (a GAN) had a 41% hallucination rate, and that land-cover segmentation on super-resolved images lost less than 5% of its score against true high-resolution imagery.

AI Engineering Intern, WaltR, Nantes, France

May 2024 – Aug 2024

- Replaced a rule-based aircraft detector with a custom CNN, from image collection to production. It ran nightly on airport images and reached 99.6% accuracy on the evaluation set.

Software Engineering Intern, LS2N Laboratory (CNRS), Nantes, France

Jun 2023 – Aug 2023

- Added Dynamic Bayesian Network features to a C++ research tool for probabilistic modeling.

Education

Polytech Nantes, Diplôme d'Ingénieur in Computer Science

Sep 2020 – Nov 2025

- Master's-level engineering degree (CTI-accredited), including two preparatory years of math and physics. Coursework: machine learning, deep learning, computer vision.

Universitat Politècnica de Catalunya, graduate exchange in Artificial Intelligence

Sep 2024 – Jan 2025

- Coursework: deep learning, optimization for data mining, constraint programming. Taught in English.

Activities

- Communication lead, Polyjoule student association (2022–2024): team of five, audience engagement up 45%.