



NILS DURAN

CONTACT

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SKILLS

Programming Languages

- Python
- SQL
- R
- C/C++
- MATLAB, Java, C#, VBA, Rust, Prolog...

Technologies & other skills

- Git
- Linux
- OOP and Software Architecture
- numpy, scikit-learn & other python libraries
- PowerBI, Tableau
- Spark
- LangChain / LangGraph
- PostgreSQL
- OpenMP, MPI, CUDA
- Pytorch, TensorFlow

LANGUAGES

Catalan	Native
Spanish	Bilingual
English	C2
German	C1

INTRODUCTION

Hey there, I'm Nils, a 21-year-old student in my fourth year of a bachelor's degree in Artificial Intelligence at UPC. Outside of my studies, I enjoy reading, playing tennis, climbing, and chess.

EDUCATION

- 2022-2026 **Bachelor's in Artificial Intelligence**
Universitat Politècnica de Catalunya
- Winter semester 2025 **Erasmus in Germany**
Karlsruhe Institute of Technology (KIT)
- 2016-2022 **ESO and Batxillerat (High School)**
Escola Frederic Mistral-Tècnic Eulàlia

REAL WORLD EXPERIENCE

- Fall 2025 **Internship at Sparsity**
 - Automated data collection for a graph-based tool to improve direct marketing and competitor analysis.
 - Used data analysis techniques to improve SEO and business-client alignment.
- Spring 2025 **Collaboration with Telefónica**
 - Researched the impact of diversity on AI agents performance with guidance from Telefónica.
 - Improved Gemini 2.5 Flash performance by over **3%** (87% → 90%) on the MedQA benchmark by using diverse agents with LangGraph.
- Summer 2024 **Internship at Bac 10**
 - Automated tax calculations to meet client-specific requirements and deadlines.
 - Improved system efficiency and maintainability by making the software architecture more robust.

PROJECTS

Predicting Chess Puzzle Elo Rating

- Predicted the Elo rating difficulty of a chess position leveraging advanced machine learning techniques.
- Took advantage of existing game engines like Stockfish, Leela and Maia to improve performance.

Image Classification with MareNostrum 5

- Trained several Transformer based models on the full MAME dataset (>200 GB) and achieved 0.75 f1-score
- Used the MareNostrum V supercomputer and slurm to train the models on a very large dataset.

Cirrhosis Patient Status Classification

- Worked with health data to classify the status of patients with cirrhosis.
- I trained several models including KNN, SVM, Decision Tree and Explainable Boosting Machine.

Solving Atari Games with DQN

- Worked with the gymnasium library to create environments and implement several Reinforcement Learning algorithms such as DQN, DDPG, TD3, SAC, PPO.