Luis Felipe Morales Curiel

Senior Data Analyst

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ML engineer with a PhD in machine learning and 5+ years of experience building real-time computer vision and autonomous systems on constrained hardware. Skilled in Python, performance-optimised ML pipelines, edge deployment, computer vision and dataset design.

Work Experience

Senior Data Analyst   Sept 2025 - Present

LLTS / Warsaw, Poland

- Developed deep learning models for microfluidic well reaction tracking and detection, eliminating hardcoded heuristics and improving accuracy by 90% (**PyTorch**).
- Designed, visualisation and implementation of an end-to-end image analysis pipeline, increasing processing accuracy and speed by 60% (**Python**, **PyTorch**, **Pandas, BI**)

PhD Researcher: Machine learning and Optics   Apr 2021 - Sept 2025

ICFO | Catalonia, Spain

- Built of 2 novel deep learning models to process microscope images, reducing the reconstruction time by 90% and reducing extreme errors by ~50% of the target (**Python, Tensorflow, Keras, PyTorch, Hugging Face**).
- Dataset management (**Pandas**, **SQL, Snowflake**) and cloud environments with CI/CD (**AWS**).
- Coding, orchestration and containerization of ML pipelines and autonomous tasks (**Docker, Kubernetes**).
- Developed autonomous microscope control systems integrating ML interface, sensor input, and hardware actuation under strict real-time constraints (**PPO, Python, C++, microcontrollers**).
- 2 high-impact factor papers published in Nature communications biology and Proc. SPIE.

Artificial Intelligence Intern   Mar 2020 - Apr 2021

ICFO | Catalonia, Spain

- **Model training (CUDA GPU based)   and deployment** of 4 denoising models for microscopy (**regression, classification and hypothesis testing**). Improved image quality by approximately 80%.
- Troubleshooting, version control (**Git, GitHub**) and coding development for Computer Vision machine learning pipelines and LLMs (**Scikit-learn, OpenCV**).
- Extracting insights and **statistical models** from experimental data from test benches for support decision-making (**embedding, linear models**) and version testing (**A/B testing**).

Cybersecurity Engineer Intern   May 2018 - Dec 2018

Instituto de Ciencias Nucleares - UNAM | CDMX, Mexico

- Management, prompt engineering and support of networks and OS for 3 **Linux servers (IPv4, IPv5, EIGRP, Switching)**. CCNA Cisco certified.

Quality Control Intern   Jan 2017 - Dec 2017

ZOLTEK

- Analysis of purity, pH and viscosity data from raw product (**C++, Python, scikit-learn**) led to **~$2000 USD in savings**.

Education

Universidad Nacional Autónoma de México   Jul 2018 - Sep 2020

Master of Science – MSc in Theoretical Chemistry

Universidad de Guadalajara   Jan 2013 - Jan 2017

Bachelor of Science: BSc in Chemistry