


LLUÍS PASTOR PÉREZ

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EDUCATION

Master of Science in Data Science | ETH Zürich | Zürich, Switzerland September 2021 - Present

- Performed several group projects in Machine Learning, NLP, and different areas of Computer Vision
- Teaching Assistant in Complex Analysis (2022), graded weekly assignments for 40 students and led comprehensive 2-hour lectures

Bachelor of Science in Mathematics | Universitat de Barcelona | Barcelona, Spain September 2017 - July 2021

- Average grade of 8.5/10 (est. top $\approx 5\%$) and first class Honors in *Mathematical models and Dynamical systems*, *Algebraic equations*, and *Probabilities*. Excelled in both Mathematics and Computer Science subjects
- Exchange semester in École Polytechnique Fédérale de Lausanne. Average grade of 5.85/6 (top student in the class)

WORKING EXPERIENCE

Junior Data Scientist | Akina | Digital Health | Zürich, Switzerland January 2023 - August 2023

- Designed a machine learning-driven motion analysis pipeline for exercise planning and repetition counting
- Prototyped and developed Akina's flagship product. Focused on data privacy and out-of-distribution generalization
- Implemented robust MLOps practices for medical device software development

Data Scientist intern | Hilti | Manufacturing | Schaan, Liechtenstein March 2022 - August 2022

- Designed and created a generative ML pipeline in Python: data preprocessing, feature engineering, and multi-modal model selection to find the best geometrical and physical parameters of a new generation of drill-bits in order to optimize their performance
- Researched and implemented the Bayesian Additive Regression Trees model to improve previous models for a crucial dataset of the company, leading to a similar level of accuracy but providing a measure of model uncertainty. Presented the results to the Technical DS Exchange & Community, a Hilti forum to share the most exciting results of the quarter
- Performed data analysis in one of the key manufacturing processes. Identified and developed different use cases that helped the company improve lot quality and refine manufacturing process

Data Scientist intern | Qiagen | Biotechnology | Barcelona, Spain March 2021 - May 2021

- Designed and built an SQL-based Grafana server to control the main manufacturing process KPIs. Ideated and implemented machine learning algorithms to predict future failures leveraging time series models
- Revamped an R program originally designed to control the leak test, re-enabling the company to instantly measure possible leakings, leading to a time reduction of 5 man-hours per week and an improvement in output robustness
- Upgraded the main C# application that controlled the manufacturing process, reducing computing time by 8%

RESEARCH EXPERIENCE

(MOST WORKS ARE IN PROGRESS)

- Master's Thesis on Bengio's Generative Flow Networks and its application to Multi-Objective Optimization problems at R&D Center Stuttgart (Sony) in collaboration with MILA, supervised by Lukas Mauch (Sony) and Nicolai Meinshausen (ETH). 2024.
- Researched on Consistency Trajectory Models and the bounds of the usage of different loss functions, Sony Japan, under the guidance of Chieh-hsin Lai. 2023.
- Proposed new Benchmarking for Image Editing models: "*PixLens: A Novel Framework for Disentangled Evaluation in Diffusion-Based Image Editing with Object Detection + SAM*" within the Deep Learning project at ETH, Thomas Hofmann. 2023.
- Deep Learning for survival modeling in cancer patients and tissue classification, achieved SOTA results at ETH & *Kaiko AI*. 2022.

CONFERENCES AND COMPETITIONS

- *2nd IACR PPML School, 2023*: Acquired foundational skills in privacy-preserving machine learning, including secure computation and federated learning. Engaged with experts through lectures and discussions about both theoretical and practical domains
- *Hack4Good, 2022*: Played a key role in the Hack4Good event organized by the Analytics Club, where helped the NGO WWF to develop an application that automatically detects construction proposals that could negatively impact surrounding natural environments using data analysis and machine learning techniques
- *Artificial Intelligence and Games, 4th International Summer School, 2022*: Summer school sponsored by Modl.ai where experts from big technology companies explained the current state of cutting-edge techniques of Artificial Intelligence and Reinforcement Learning in games. Awarded with the AWS Game Tech Scholarship
- *International Mathematics Competition for University Students*: Worldwide Mathematics competition for selected high-performance students. Competition access was given by being one of the best five students in *Prova Santaló*
- *Prova Cangur*: Geometry, arithmetic and logic test addressed to the best Valencian Community High School students (> 8,000 participants). Top 1% in 2017, 5th place in 2016 and top 3% in 2014

PROGRAMMING SKILLS

CERTIFICATIONS

LANGUAGES

- Python including TensorFlow and PyTorch (Advanced)
- SQL, LaTeX and R (Advanced), Excel (Intermediate)
- Spark, Hadoop and Docker (Beginner)

- *NLP Specialization, four courses*: DeepLearning.ai
- *Generative AI for LLM*: DeepLearning.ai
- *Several Machine Learning and Programming courses*: Coursera

- Catalan and Spanish: Native
- English: CAE (C1 level CEFR)
- French: Upper Intermediate (B2.1)
- German: Pre-intermediate (A2.2/B1)