





Joan Salvà Soler

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 English, Catalan, Spanish, German

EXPERIENCE

- **Quantagonia** Vienna, Austria (Remote)
Research Engineer Nov 2023* - Present
 - **LLMs for optimization modeling:** Key contributor to Quantagonia's LLM-based natural language interface for optimization modeling. Research and development of the complex multi-agent application, including productization, API development, and client library creation. *Tools: LangChain, LangGraph*
 - **MIP solver development:** Research and implementation of new features for Quantagonia's Hybrid Solver. Successfully implemented Feasibility Jump as an LP-free primal heuristic (7% improvement on MIPLIB2017 benchmarks). Evaluated different branching strategies, including ML-driven techniques. *Tools: C++, CMake*
 - **ML-based hyperparameter tuning:** Used bayesian optimization to tune the Hybrid Solver on a large set of instances. Performed clustering and set-partitioning optimization to develop an automatic configuration selection that was implemented in production. *Tools: SMAC*
- **SBA Research** Vienna, Austria
Machine Learning Research Intern Mar 2023 - Nov 2023
 - **Landslide detection on satellite imagery:** Architecture and development of a Machine Learning solution for Landslide Detection based on computer vision and change-detection methods on satellite imagery. Part of the state-funded project gAia. *Tools: PyTorch, QGIS*
- **Accenture** Barcelona, Spain
Data Scientist Apr 2021* - Oct 2022
 - **Price Optimization:** Implemented solution that optimized the selling price of cars for a renowned car manufacturer. Solution includes a time-series forecasting model (75% accuracy) and an optimization engine that increased profits by 10-15%. *Tools: sklearn, statsmodels, ORTools*
 - **Demand Forecasting:** Deployment and maintenance of a forecasting solution for a global company in the consumer-goods sector. Worked on continuous improvements, refactoring, fixes, and covid correction logics.
 - **Supply-Chain Optimization:** Modeled the general supply-chain problem using Linear Programming and developed an optimization engine to provide supply-chain strategies. Solution was integrated into the existing Supply Chain Platform part of Accenture's offering.

EDUCATION

- **Technical University of Vienna** Vienna, Austria
MSc. in Data Science; Grade: 1.16 (1 best - 4 worst) Oct 2022 - Feb 2025
 - Two minors: **Machine Learning and Statistics** + **Optimization and High-Performance Computing**
 - Teaching: Assistant for the courses Advanced Methods for Regression and Classification, and Data Analysis.
- **Polytechnical University of Catalonia** Barcelona, Spain
BSc. in Mathematics Sep 2017 - Dec 2021
 - Accenture Scholarship for Academic Merits, leading to an 8-month internship.

PROJECTS AND PUBLICATIONS

- **Exact Methods for the Site Assessment Routing Problem (paper):** Achieved state-of-the-art results and proved theoretical dominance of our proposed formulation in this novel routing problem. Accepted for publication at Central European Journal of Operations Research. *Tools: Gurobi*
- **Transformed-based word gender classifier:** Developed a model to predict the gender of words across multiple languages, investigating the intuitiveness and learnability of gendered nouns through comparative analysis.

PROGRAMMING SKILLS AND CERTIFICATIONS

- **Languages:** Python, R, C++, Java, Excel **Technologies:** GCP, PyTorch, LangChain, Git VC
- **GCP Professional Machine Learning Engineer** - Google Cloud Platform - Issued Sep 2024

*Started with an internship position and promoted to a regular employee.