





Joan Salvà Soler

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 English, Catalan, Spanish, German

EXPERIENCE

- **H2O.ai** Vienna, Austria
ML Software Engineer May 2024 - Present
 - **LLM-Studio:** Core developer of H2O.ai's LLM-Studio, a platform for fine-tuning and deploying LLM-based applications. Tools: **Python, TypeScript, Docker, AWS, GCP, Kubernetes, PyTorch, FastAPI, MCP**
- **Quantagonia** Vienna, Austria / Munich, Germany
Research Engineer Nov 2023 - May 2024
 - **LLMs for optimization modeling:** Core developer of DecisionAI - an 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, FastAPI**
 - **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 Quantagonia's MIP solver. Clustered optimal sets 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, GDAL**
- **Accenture** Barcelona, Spain
Data Scientist Apr 2021 - Oct 2022
 - **ML & Optimization:** Experience in multiple projects for large customers, including Sales Prices Optimization, Demand Forecasting, Supply-Chain Optimization, Port Operations Scheduling, and Warehouse Stock Optimization. Tools: **scikit-learn, OR-Tools**

EDUCATION

- **Technical University of Vienna** Vienna, Austria
MSc. in Data Science; Graduated with Honors 2022 - 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
- **Polytechnic University of Catalonia** Barcelona, Spain
BSc. in Mathematics 2017 - 2021
 - Specialized in Algorithmics, Discrete Mathematics, and Mathematical Optimization
 - Accenture Scholarship for Academic Merit, leading to an 8-month internship

RESEARCH AND PUBLICATIONS

- **Exact Methods for the Site Assessment Routing Problem (first-author paper):** Achieved state-of-the-art results and proved theoretical dominance of our proposed formulation in this novel routing problem. Tools: **Gurobi**
- **Diffusion Models for Combinatorial Optimization (Master Thesis):** Working on bridging the gap between ML for graph-representable COPs and metaheuristics. I am building a diffusion-based GPU-accelerated evolutionary algorithm

For my complete list of projects, please visit my blog and my GitHub.

PROGRAMMING SKILLS AND CERTIFICATIONS

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