

Summary

Quantitative Modeller specialising in energy and commodity valuation, optimisation, risk analytics and statistical modelling. Experienced in developing quantitative models end-to-end, from methodology and mathematical formulation through implementation, validation and production integration, using Python, MATLAB and SQL. Also skilled in peer review, cross-functional collaboration and junior mentoring.

MSc in Physics from ETH Zürich, with thesis research at MIT, and BSc degrees in Computer Science, Mathematics and Physics. Strong analytical foundation, quick to master new domains, and motivated by solving complex quantitative problems with rigorous and practical solutions.

Experience

BKW AG

Quantitative Modeller

Bern, Switzerland

01/2026 - present

- Led quantitative development and validation of a multi-market BESS valuation model used in live long-term contracts and portfolio valuation, covering day-ahead, intraday and ancillary services with configurable contractual/physical constraints; solver-independent sparse LP/MILP formulation solves 10-year hourly optimisations in under 15s.

Quantitative Analyst

05/2024 - 12/2025

- Co-owned gas-storage valuation and hedging models for 15+ storages across 4 markets, covering intrinsic/extrinsic valuation and market-compatible hedges with LP/MILP and Monte Carlo; designed the MATLAB OOP architecture and 20+-table Snowflake schema and automated deal capture, monitoring and data pipelines.
- Developed asset-specific capture-rate and valuation methodology for 300+ renewable and battery assets, incorporating technology, region and contractual structure; introduced contract-specific methodologies, independent benchmark validation and automated Looker reporting to improve PPA valuation accuracy and robustness.

Massachusetts Institute of Technology (MIT)

Research Assistant

Cambridge, MA, USA

05/2023 - 12/2023

- Performed statistical analysis of rare Higgs-boson decay channels (photon + meson) using Python/C++ workflows, supporting thesis research in particle physics at MIT.

Universitat de Barcelona (UB)

Undergraduate Research Assistant

Barcelona, Spain

09/2019 - 01/2022

- Delivered three research projects spanning nanomaterials (co-authored publication ) , quantum optics instrumentation, and applied ML for healthcare.

Resistencias Tope S.A.

Data Scientist

Barcelona, Spain

01/2019 - 02/2020

- Developed part-time analytical models to estimate molten-salt temperatures from industrial process data.

Education

ETH Zürich - MSc ETH in Physics

GPA: 5.7/6 09/2021 - 10/2023

- Master's Thesis in Particle Physics at MIT - grade 6.0/6.

Universitat de Barcelona (UB) - BSc in Computer Science and Software Engineering

GPA: 9.3/10 09/2016 - 07/2021

Universitat de Barcelona (UB) - BSc in Mathematics

GPA: 8.4/10 09/2014 - 07/2020

Universitat de Barcelona (UB) - BSc in Physics

GPA: 8.5/10 09/2014 - 01/2020

Awards

- 2021 La Caixa Fellowship  for postgraduate studies at ETH Zürich, among more than 1300 candidates.
- 2021 Extraordinary Award  for outstanding academic performance in the BSc in Computer Science.
- 2021 Joaquim Font Award  for being the top-ranked student in my BSc in Computer Science graduating class.

Skills

Programming: Python (NumPy, pandas, SciPy, scikit-learn), SQL, MATLAB, C/C++, Bash, Java, R (basic), VBA (basic).

Modelling & Quant: LP/MILP optimisation, Monte Carlo, valuation, risk analytics, statistical/time-series modelling, backtesting.

Statistical/ML: Regression/classification, tabular RL, feature engineering, cross-validation, model validation & calibration, causal inference.

Energy & Markets: BESS, gas storage, PPAs/capture rates, day-ahead, intraday, ancillary services, hedging.

Data/BI/Platforms: Snowflake, Looker, data modelling, API integration, Excel.

Software Engineering: OOP, unit/integration testing (pytest), profiling/vectorisation, Git, CI/CD, Linux, AI coding agents, LaTeX.

Languages: Catalan (native), Spanish (native), English (C2), German (B1).

Relevant Projects

- 2021 **causaleffect** : open-source Python package implementing causal-effect identification algorithms, with full test suite, documentation and arXiv technical report .