

VÍCTOR JIMÉNEZ RODRÍGUEZ

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SUMMARY

Machine learning researcher with a background in physics and statistics, and a proven track record in both academic and industrial environments. Interested in the assessment and understanding of robustness in machine learning systems, with experience in the development and deployment of agentic retrieval-augmented generation (A-RAG) pipelines in high-stakes applications.

EXPERIENCE

Uthereal (ETH AI Center Startup) – Zurich

AI Scientist

Since Jan. 2025

Coordination and contribution to multiple R&D projects involving the integration of A-RAG pipelines in high-risk domains (medical, legal, technical...). Collaboration with academic partners for joint research initiatives and grant applications.

ML Engineer

Jan. 2024 – Dec. 2025

Designed and implemented an end-to-end agentic RAG system with advanced document understanding and explainability features, alongside a comprehensive experimental framework for systematic evaluation and deployment.

Institute for Machine Learning (ETH) – Zurich

Statistical Machine Learning – Prof. Dr. Fanny Yang

Apr. 2025 – Oct. 2025

Research internship

Research project focused on the derivation of finite-sample robustness guarantees in high-dimensional compositional settings under arbitrarily large subpopulation shifts.

Institute for Machine Learning (ETH) – Zurich

Information Science and Engineering – Prof. Dr. Joachim M. Buhmann

Nov. 2023 – Sep. 2024

Research traineeship

Master's thesis with honors: *Improved robustness of deep learning models through posterior agreement based model selection*. Manuscript derived from the thesis has been submitted for publication.

Department of Physics (TUM) – Munich

Feb. 2022 – Oct. 2022

Physics of Energy Conversion and Storage – Prof. Dr. Aliaksandr Bandarenka

Research traineeship

Bachelor's thesis with honors: *EIS characterization of lithiated TiO₂-coated LICGC electrolytes for the stabilization of the SEI in all-solid-state lithium batteries*. Contributed to published work: *Bandarenka et al., ChemSusChem 2024, e202401026, DOI: 10.1002/cssc.202401026*.

EDUCATION

Master's degree in Statistics and Operations Research

2022 – 2024

Facultat de Matemàtiques i Estadística – UPC (Barcelona)

Completed track in statistical inference, optimization theory, and machine learning. [9.05/10]

Bachelor's degree in Engineering Physics

2018 – 2022

ETSETB – UPC (Barcelona)

Elective coursework included computational electromagnetism, advanced materials, simulation of condensed matter, quantum optical technologies, photonics, and computational biophysics. Engineering courses covered control theory, circuit theory, signal processing, and antenna design.

Scientific-Technological Baccalaureate

2016 – 2018

Maristes Sants-Les Corts (Barcelona)

Ranked in the top 0.1% of PAU exams, securing a full-tuition scholarship for the first year of studies.

LANGUAGES

Catalan, Spanish	Native
English	Proficient
German	Intermediate

TECHNICAL SKILLS

Python	Machine learning, data analysis, computational physics.
UNIX/Linux	Command-line operations, file management, system configuration in Ubuntu.
HPC systems	Experience with Euler (CSCS): job scheduling, parallel computing.
R	Statistical inference, statistical learning.
MATLAB	Numerical methods for mathematics, physics and engineering. Includes dynamical systems, FEM analysis, signal processing, IPM optimization.
AMPL	MILP optimization, large-scale optimization, stochastic programming.
Stan	Bayesian analysis.
Scala	FOOP, Spark RDDs.
SAS	Statistical data analysis.
Fortran	Molecular dynamics and Monte-Carlo simulations.
C, C++	Analog and digital circuit control.

OTHER PROJECTS

Lasso and Bayes: a demonstration using real estate market data Bayesian analysis.	2023
Modelling and design of a Paul Ion Trap Computational electromagnetism, finite element method, EM momentum method.	2021
Calcium-mediated regulation of astrocytes response in the brain Computational biophysics, dynamical systems modelling.	2021
Design and implementation of a sound recorder, processor and player in the electronics laboratory. TD-PSOLA and Phase Vocoder algorithms in a STM32 microprocessor. Signal processing, analog and digital circuits, PWM conversion.	2021
BB84 guarantees for QKD in free-space-link communication systems Quantum physics, cryptography, free-space-link communication.	2018