

MIGUEL SANTOS PASCUAL

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Double major in **Mathematics and Physics** from the University of Valladolid, with a strong background in both fields and a particular focus on applied mathematics. My interests include probability, statistics, data science, operations research, computation, and applied mathematics. Currently, I aim to deepen my expertise in statistics and artificial intelligence, contributing to innovative solutions with an analytical and rigorous approach.

While finishing a **Master's in Statistics for Data Science** at **Carlos III University of Madrid**, I had the opportunity to collaborate as a researcher at the **Institute of Mathematical Sciences (ICMAT)** through a JAE Intro SO scholarship. This allows me to combine my studies with research activities in a highly qualified environment alongside outstanding professionals.

ACADEMIC BACKGROUND

Carlos III University of Madrid (UC3M), Madrid, 2025

Final GPA: 9.55/10, awarded Honors for 36 ECTS. Master's in Statistics for Data Science.

A postgraduate program entirely in English, offering comprehensive and intensive training in fundamental statistical tools. It emphasizes a deep understanding of statistical methods, combining methodological insights, practical implementation, and real-world applications. Final Thesis: *"A two-level Plackett-Luce model for preference modelling in route choice with applications"*

University of Valladolid (UVa), Valladolid, 2024.

Bachelor's in Mathematics.

Final GPA: 9.365/10, awarded Honors for 117 ECTS credits, and ranked first in my graduating class.

Participated in an ERASMUS exchange program at Università degli Studi di Perugia during my fourth year (2022/23).

Final Thesis: *"Application of Information Theory in Supervised Learning"*, graded 9.8/10 with Honors.

University of Valladolid (UVa), Valladolid, 2024.

Bachelor's in Physics.

Final GPA: 8.998/10, awarded Honors in 108 ECTS and ranked second in my graduating class

Participated in an ERASMUS exchange program at Università degli Studi di Perugia during my fourth year (2022/23).

Final Thesis: *"Variational Quantum Algorithms: A First Step in Adiabatic Quantum Computing"*, graded 9.4/10.

PROFESSIONAL EXPERIENCE

Research Fellowship at ICMAT, Madrid, 2024-2025.

Institute of Mathematical Sciences (ICMAT).

Awarded the first of the 15 **JAE Intro ICU 2024** scholarships across Spain, designed for master's students as an introduction to the research world. Worked in the Department of Statistics and Operations Research.

Project Involved I: Preference Modelling for a Shared Transportation System, in collaboration with Dynamo. This project served as my Master's Thesis: *"A two-level Plackett-Luce model for preference modelling in route choice with applications"*

Project Involved II: Predictive Models for a Social Logging System, in collaboration with Xeerpa and Comunidad de Madrid.

Quantitative Finance Analyst, Madrid, Jun 2023 - Aug 2023

Analistas Financieros Internacionales (AFI).

Conducted an internship involving advanced Microsoft Excel usage alongside Python scripts for task automation. The role included applying Markov processes and Brownian motion concepts to the valuation of basic financial products.

COURSES, WORKSHOPS & CONGRESS

Presentation and attendance to SEIO Lleida 2025 Congress.

Lleida, SEIO , 10th/13th of July 2025.

The 41st National Conference on Statistics and Operations Research, jointly held with the 15th Conference on Public Statistics, is a major academic event in Spain that brings together researchers, professionals, and public institutions to discuss recent developments and applications in the fields of statistics, data science, and operations research. The 2025 edition took place in the city of Lleida from June 10 to 13 and I had the opportunity to present there my Thesis: *"A two-level Plackett-Luce model for preference modelling in route choice with applications"*

Course in Deep Learning. Instructor: Matteo Borrotti

26th/30th of May 2025

Intensive course providing both theoretical foundations and practical applications of deep learning. The course covered core concepts of deep learning, including neural networks, shallow and deep architectures, and key definitions. It introduced advanced techniques such as RNNs, CNNs, and reinforcement learning, with practical implementation in R/Python.

Attendance to AI HORIZONS 2024 UC3M: "Navegando los desafíos de la Inteligencia Artificial".

Madrid, UC3M, 17th/19th of October 2024.

Congress focused on artificial intelligence, where various researchers and businesses showcased their applications of this technology and shared their visions for its future use.

Attendance to "Advancing Explainable AI through Mathematical Optimization" Workshop.

Madrid, UC3M, 5th of February 2025.

Workshop focused on artificial intelligence, where several researchers presented recent advances aimed at enhancing the interpretability of state-of-the-art black-box models through mathematical optimization techniques.

Course “Bayesian Time Series Analysis via Dynamic Linear Models” — Instructor: Hedibert F. Lopes

June 23th–27th, 2025

Covered topics included Bayesian computation, regularization, factor modelling, dynamic linear models, and time-varying covariance modelling. Full attendance and participation throughout the program.

AWARDS AND RECOGNITION

Silver Medal at the National Physics Olympiad.

XXX Edition, Salamanca, 2019.

Honorable Mention at the National Chemistry Olympiad.

XXXII Edition, Santander, 2019.

First Place in the Regional Mathematics Olympiad.

XV Edition, Castilla y León, 2017.

Participation in the Mathematics Talent Stimulation Project (ESTALMAT).

Castilla y León, 2014-2016.

Participated in this program focused on early mathematical talent detection and development, organized by the Miguel de Guzmán Association in collaboration with the Royal Academy of Sciences. I achieved first place in the Regional Mathematics Olympiad of Castilla y León in 2017.

Participation in the “Campus de Profundización Científica.

Badajoz, Summer 2018.

Selected to attend the ‘Scientific Research Campus’ in Badajoz for two weeks in the summer of 2018, following the completion of my first year of Bachillerato. Participated in Mathematics groups focused on logic and game theory.

GENERAL SKILLS

Programming

Python	●●●●○
R	●●●●○
C / C++	●●●○○
VBA	●●●●●
MATLAB	●●●○○
Microsoft Excel	●●●●●
Linux Terminal	●●●○○
Latex	●●●○○
GitHub	●●●●○

Languages

Spanish	●●●●●
English: C1 CAE	●●●●○
French: DELF B2	●●●○○
Italian: B1	●●○○○