



Joan PASCUAL RIBES, 20 years old. Spanish Nationality

JPR

Barcelona, Spain

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*Third year Mathematics and Engineering Physics student. Polymath.
Passionate about knowledge. Hungry learner.*

Education

2023 - December 2027 Degree in **Engineering Physics**, Polytechnic University of Catalonia.
Degree in **Mathematics**, Polytechnic University of Catalonia.
CFIS (Interdisciplinary Higher Education Centre)

Skills

Programming C++, Intermediate.
Python, Intermediate.
LaTeX, Intermediate.
Sage, Basic

Languages English (Advanced) C1 certificate, *Trinity College London*.
Spanish (Native).
Catalan / Valencian (Native). C2 certificate.
German (Basic) Currently studying B1 level.
French (Basic) A2 certificate.

Teamwork and Communication I enjoy working in pluralistic teams and learning from others. In collaborative research and programming projects, I have communicated effectively and contributed to achieving objectives.

Academic Achievements

Double Degree Mark 9.34 / 10.

Honours (*Mathematics*): One Variable Calculus, Linear Algebra, Integral Calculus, Multilinear Algebra and Projective Geometry.
(*Engineering Physics*): Physics I, Physics II, Biophysics, Electromagnetism, Thermodynamics and Quantum Physics.

PAU Mark 13.832 / 14.

High School Mark 10 / 10. (Honours)

Work Experience

Computer Science Assistant Professor *September 2025 - January 2026*. Assistant professor in the Computer Science course of the Mathematics Degree at UPC.

Max Planck Institute Research Intern *June 2025 - August 2025*. I had the opportunity to learn from Aida Maraj's math group at MPI CBG. We did research in Algebraic Geometry, using Lie theory to understand properties of ideals and varieties.

Barcelona Introduction to Mathematical Research *July, 2024*. At the CRM (Centre de Recerca Matemàtica), in a collaboration between the universities UAB, UB and UPC. A month of research in the field of Algebra. We studied polynomials and their expression as sum of squares.

Main Interests

Trading and Markets	The connection it has to the fascinating academic fields of probability, statistics, and game theory particularly appeals to me.
Computer Science	I am truly interested in Data Science, AI and machine learning, specially when it comes to their relation with Mathematics.

Olympiad Achievements

Mathematics	Winner of Cangur Olympiad (Valencia) (2023).
Physics	Autonomic Physics Olympiad (Valencia). (Third place) (2023).
Chemistry	Participation in the Spanish National Chemistry Olympiad (2023).
Catalan Language	Winner of two consecutive autonomic contests (2022 & 2023).

Projects

Simulation of Superfluidity	After a thorough investigation of the quantum phenomenon of superfluidity, we developed a series of simulations that, using spectral methods, replicate the characteristics of the Helium-II superfluid. Link to the project.
Ecosystem Simulation and Study	We have developed a magnificent tool for understanding and simulating complex ecosystem dynamics. In addition, we have also conducted a study on the results presented by the simulation. Link to the project.

Volunteering

Mathematics Teacher at Caritas	I teach math during the school year to children in unfavorable economic, social, and educational situations.
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Scholarships

Full Degree Scholarship (Mathematics)	Full scholarship granted by the Interdisciplinary Higher Education Center at the Polytechnic University of Catalonia for the whole degree.
Full Degree Scholarship (Engineering Physics)	Full scholarship granted by the Interdisciplinary Higher Education Center at the Polytechnic University of Catalonia for the whole degree.
Residence Scholarship	Full residence scholarship granted by the Interdisciplinary Higher Education Center at the Polytechnic University of Catalonia while studying the degrees.

Hobbies and Activities

Literature	Awarded in some literature contests. I genuinely enjoy poetry and philosophical essays.
Music	I have played in a traditional band and studied saxophone and piano at the conservatory.
Webpage creation	Currently learning the basics of HTML and starting my personal website .

The most important thing for me is to gain experience and learn new concepts while facing challenging problems.