

Álvaro Carballeira Mora

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EDUCATION

Brown University.

PhD in Mathematics.

Providence, RI, USA.

Sep 2024 – Present

- **Advisor:** [Javier Gómez-Serrano](#).
- **Research interests:** Partial Differential Equations, Computer-assisted Proofs, Fluid Mechanics, Analysis.

Instituto de Ciencias Matemáticas (ICMAT)

Severo Ochoa Contract for Students of a Master Degree

Madrid, Spain

Sep 2023 – Aug 2024

- The program consists on the collaboration of students with ICMAT researchers. I worked with [María del Mar González](#) (professor at UAM) and [Marco Antonio Fontelos](#) (researcher at ICMAT) in the field of free boundary problems. More specifically, we targeted problems such as the mean curvature flow of a moving boundary, the Stefan problem or the flow of a binary fluid using phase field methods.

Universidad Autónoma de Madrid.

Masters Degree in Mathematics and Applications.

Madrid, Spain

Sep 2023 – Jun 2024

- **Relevant coursework:** Advanced Analysis Courses, Advanced PDEs Courses, Stochastic Processes, Fluid Mechanics.
- **Master thesis:** The Cahn-Hilliard Equation. Phase Field Methods for Moving Boundary Problems.
- **Average grade:** 9.95/10.00

Universidad Autónoma de Madrid.

B.Sc. in Mathematics.

Madrid, Spain

Sep 2019 – Jun 2023

- **Relevant coursework:** Measure Theory, Topology, Complex Analysis I-II, Real Analysis, Partial Differential Equations, Functional Analysis, Probability I-II, Analytic Number Theory, Numerical Analysis, Statistics I-II.
- **Bachelor thesis:** Neural Networks. Applications to numerical approximation of PDEs.
- **Average grade:** 9.02/10.00

AWARDS AND ACHIVEMENTS.

Department of Mathematics, Universidad Autonoma de Madrid

Scholarship for the Master's Degree in Mathematics and Applications.

Madrid, Spain

Jun 2023

- I was awarded one of the three scholarships offered by the Department of Mathematics to cover the tuition fees for the Master's Degree in Mathematics and Applications.

ATTENDED WORKSHOPS AND CONFERENCES.

- *Dynamics, Topology and Computations.* Jagiellonian University in Kraków. June 2025.
- *Particles, Fluids and Patterns: Analytical and Computational Challenges.* GSSI (L'Aquila, Italy). June 2025
- *Riviere-Fabes Symposium.* University of Minnesota. April 2025.
- *Conference on fluids and computer assisted proofs.* Princeton University. March 2025.
- *Computer-assisted proof in nonlinear analysis.* CRM (Montreal, Canada). September 2024.
- *European Congress of Mathematics.* Universidad de Sevilla (Sevilla, Spain). July 2024.
- *IAE School of Mathematics.* ICMAT (Madrid, Spain). June-July 2024.
- *2023 Thematic Period on PDEs.* ICMAT-UAM (Madrid, Spain) September-December 2023.
- *IAE School of Mathematics.* ICMAT (Madrid, Spain). June-July 2023.

OUTREACH ACTIVITIES

Brown University Graduate Student Seminar.

Co-organizer.

Fall 2025 - Present

CERTIFICATES

Cambridge Assestment English: Certificate in Advanced English

Sep 2021

Overall score: 203. Common European Framework level: C2.

IELTS Academmic Text

Dec 2023

Overall band score: 8.5.

SKILLS

Technologies: Python, LaTeX, MATLAB, R, C/C++

Languages: Spanish (native) and English (fluent)