

ACADEMIC POSITIONS

University of Notre Dame du Lac

Provost Society of Science Fellow.

Postdoctoral Research Associate.

Indiana, USA

2025 - 2028

Instituto de Ciencias Matemáticas

Predoctoral Researcher for the Spanish National Research Council.

Ph.D. in Geometry and Algebra.

Madrid, Spain

2021 - 2025

- Advisor: Prof. Javier Aramayona
- Research area: Mapping class groups & Teichmüller theory

EDUCATION

Universidad Autónoma de Madrid

Master in Mathematics and Applications

Madrid, Spain

2020 - 2021

- Master thesis: Modular groups and arc complexes **(10/10)**
- GPA: 9.64/10

Universidad Autónoma de Madrid

Double degree in Mathematics and Computer Science

Madrid, Spain

2015 - 2020

- Final year project for Mathematics: Classification of surfaces **(10/10)**
- Awarded 29 *Matrículas de Honor* (Highest distinction).
- GPA: 9.30/10

PUBLICATIONS

1. Homomorphisms between pure mapping class groups.
Advances in Mathematics (2025).
2. Non-planar ends are continuously unforgettable.
Joint with J. Aramayona, R. Skipper, J. Tao, N. G. Vlamis and X. Wu.
International Mathematics Research Notices (2025).
3. Braided multitwists.
Algebraic and Geometric Topology (2025).
4. Finite rigid sets of the non-separating curve complex.
Forum Mathematicum (2022).
5. Matching arc complexes: Connectedness and hyperbolicity.
Joint with J. Aramayona and A. Fernández.
Expositiones Mathematicae (2021).
6. Towards the Automatic and Schedule-Aware Alerting of Internetwork Time Series.
Joint with D. Perdices, J. García-Dorado, J. Ramos, J. Aracil.
IEEE Access (2021).

PREPRINTS

1. Holomorphic maps between moduli spaces II.
Joint with J. Souto.
In arXiv:2412.01257 (2024).

RESEARCH STAYS

Institut Henri Poincaré

Paris, France

Scientific Program:

April - June 2022

Groups acting on Fractals, Hyperbolicity and Self-Similarity

Institut de Recherche Mathématique de Rennes

Rennes, France

Collaboration with prof. Juan Souto

April - June 2024

AWARDS, FELLOWSHIPS, & GRANTS

Provost Society of Science Fellowship

2025 - 2028

University of Notre Dame du Lac.

FPI predoctoral contract

2021 - 2025

Spanish Ministry of Science and Innovation.

JAE Intro SOMdM Grant

2020 - 2021

Research grant awarded by Spanish National Research Council.

Excellence scholarships.

2015 - 2020

Awarded yearly by the Community of Madrid.

INVITED TALKS, SEMINARS & COLLOQUIA

University of Notre Dame

September 23, 2025

Rigidity results for the mapping class group.

Instituto de Ciencias Matemáticas

May 22, 2025

Resultados de rigidez del grupo modular.

Universidad Nacional Autónoma de México

October 28, 2024

Braided elements & homomorphisms in the mapping class group.

Universidad Complutense de Madrid

September 23, 2024

Homomorphisms between mapping class groups.

Internationales Wissenschaftsforum Heidelberg

July 8, 2024

Transverse measures to infinite type laminations.

Institut de Recherche Mathématique de Rennes

June 24, 2024

Holomorphic rigidity of moduli space.

Institut de Recherche Mathématique de Rennes

June 19, 2024

Mapping class groups, braided elements and homomorphisms.

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| Instituto de Ciencias Matemáticas | December 5, 2023 |
| <i>Braided multitwists in the mapping class group.</i> | |
| Universidad de León | February 9, 2023 |
| <i>Finite rigidity of non-separating curve complexes.</i> | |
| Universidad Autónoma de Madrid | December 14, 2022 |
| <i>Introduction to geometric group theory.</i> | |
| Instituto de Ciencias Matemáticas | December 2, 2022 |
| <i>The symplectic representation of the mapping class group.</i> | |
| Institut Henri Poincaré | June 2022 |
| <i>Finite rigid sets of the non-separating curve complex.</i> | |
| Instituto de Ciencias Matemáticas | May 24, 2022 |
| <i>The curve complex.</i> | |
| Instituto de Ciencias Matemáticas | December 9, 2021 |
| <i>On the hyperbolicity of arc complexes and some of their relatives.</i> | |

TEACHING EXPERIENCE

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| Instructor for Calculus B | Spring Term 25/26 |
| <i>University of Notre Dame du Lac.</i> | |
| Teaching Assistant for Mathematical Analysis | 1st Term 24/25 |
| <i>Mathematics, Universidad Autónoma de Madrid.</i> | |
| Teaching Assistant for Linear Algebra | 1st Term 23/24 |
| <i>Data Science and Engineering, Universidad Autónoma de Madrid.</i> | |
| Teaching Assistant for Mathematics | 1st Term 22/23 |
| <i>Environmental Science, Universidad Autónoma de Madrid.</i> | |
| Teacher in the ‘Pequeño instituto matemático’ (PIM) | 2022 - 2024 |
| <i>PIM is a weekly activity organized by the ICMAT where high-school students discuss math Olympiad style problems.</i> | |

CONFERENCE ORGANIZATION

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| Geometric Group Theory and Low-dimensional Topology | May 2022 |
| <i>Co-organizar of Graduate School at Instituto de Ciencias Matemáticas.</i> | |

WORKSHOP & CONFERENCE PARTICIPATION

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| A conference on Geometry, Topology and Dynamics of Infinite-type surfaces | June 2025 |
| <i>Casa Matemática Oaxaca.</i> | <i>Oaxaca, Mexico</i> |
| Young Geometric Group Theory XIII | April 2025 |
| <i>University of Copenhagen.</i> | <i>Copenhagen, Denmark</i> |

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| Group, Topology and Applications VI <i>University of the Basque Country.</i> | April 2025 <i>Bilbao, Spain</i> |
| Red temática de geometría y física <i>Instituto de Ciencias Matemáticas.</i> | November 2024 <i>Madrid, Spain</i> |
| Groups in Madrid <i>Instituto de Ciencias Matemáticas.</i> | October 2024 <i>Madrid, Spain</i> |
| Geometry and dynamics of surfaces beyond finite type <i>Heidelberg University.</i> | July 2024 <i>Heidelberg, Germany</i> |
| Young Geometric Group Theory XII <i>University of Bristol.</i> | April 2024 <i>Bristol, UK</i> |
| Groups in Madrid <i>Instituto de Ciencias Matemáticas.</i> | October 2023 <i>Madrid, Spain</i> |
| Group Actions and Low-dimensional Topology <i>Organized by Instituto de Ciencias Matemáticas.</i> | July 2023 <i>Barco de Ávila, Spain</i> |
| Groups and Dynamics in Geometry <i>Organized by ETH Zürich.</i> | Jun 2023 <i>Ascona, Switzerland</i> |
| Young Geometric Group Theory XI <i>University of Münster.</i> | February 2023 <i>Münster, Germany</i> |
| Young researchers congress of the Real Sociedad Matemática Española <i>Universidad de León.</i> | February 2023 <i>León, Spain</i> |
| Groups, Topology and Applications IV <i>University of the Basque Country.</i> | February 2023 <i>Bilbao, Spain</i> |
| Groups in Madrid <i>Instituto de Ciencias Matemáticas.</i> | October 2022 <i>Madrid, Spain</i> |
| Groups acting on Fractals <i>Centre International de Rencontres Mathématiques.</i> | April 2022 <i>Luminy, France</i> |
| Biannual meeting of the Real Sociedad Matemática Española <i>University of Castilla-La Mancha</i> | January 2022 <i>Ciudad Real, Spain</i> |
| Groups in Madrid <i>Instituto de Ciencias Matemáticas.</i> | November 2021 <i>Madrid, Spain</i> |