

# CELIA RUBIO-MADRIGAL

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## EXPERIENCE

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**Doctoral researcher** – *CISPA Helmholtz Center for Information Security* 2023-now

– Group: Relational Machine Learning Lab . Supervisor: Dr. Rebekka Burkholz.

**Teaching assistant / Laboratory demonstrator** – *University of Strathclyde* Jan-Apr 2023

– “CS310 Foundations of AI” for Year 3 BSc Computer Science. Lecturer: Dr. Andrew Abel.

## EDUCATION

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**PhD in Computer Science** – *Universität des Saarlandes (Saarbrücken, Germany)* 2023-now

**MSc in Advanced CS with AI** – *University of Strathclyde (Glasgow, UK)* – 8.57/10 (with Distinction) 2022-23

– Fully funded by “la Caixa” Foundation Postgraduate Fellowship. Earned the Dept. Best Overall Prize.


**BEng in Computer Science** – *Universidad Complutense de Madrid (Spain)* – 9.16/10 2017-22

– Secretary of the Computer Science Student Council 2021-22.


**BSc in Mathematics** – *Universidad Complutense de Madrid (Spain)* – 9.08/10 2017-22

## PUBLICATIONS

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★ Spectral graph pruning against over-squashing and over-smoothing. Adarsh Jamadandi\*, Celia Rubio-Madriral\*, Rebekka Burkholz. Thirty-Eighth Conference on Neural Information Processing Systems (NeurIPS), 2024. 

• Rendering string diagrams recursively. Celia Rubio-Madriral, Jules Hedges. arXiv:2404.02679, 2024. 

• Analysis of a neural network for the identification of complex Boolean functions. Celia Rubio-Madriral. Bachelor’s thesis at Universidad Complutense de Madrid, 2022. 

• Serialismo y matemáticas (I) , (II) , (III) , and Re-escalando música . Celia Rubio-Madriral. DivulgaMAT: Música y matemáticas, 2019.



## HONOURS AND AWARDS





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• Best Overall Performance Prize: *CIS Dept. Prize on the MSc in ACS at Strathclyde* Oct 2023



• Nova III Student List : *Top 10 talents under 25 in Computer Science in Spain* Mar 2023

• 9th Heidelberg Laureate Forum: *Young Researcher in Mathematics* Sep 2022


– Personal interviews for HLFF Spotlight: 9th HLF  and Tribuna Complutense .

- "la Caixa" Foundation Postgraduate Fellowship : Fully funded MSc Jun 2022  
– Interviews in national newspapers El País , El Plural , and TV channel Telemadrid .

### Undergraduate studies:

- 6th Aula de Verano Blas Cabrera : Seminar at UIMP for best undergrad records in Spain Aug 2022
- SWERC contestant : ICPC Southwestern Europe Regional Contest (Italy) Apr 2022
- Beca de Excelencia: Excellence Grants for undergraduate students (2100€) 2018-22

### Pre-undergraduate studies:


- Premio Extraordinario de Bachillerato: Top 25 for this exam in Com. Madrid (1000€) Jul 2017
- Leading Program "la Caixa": Top 20 university admission marks in Com. Madrid Jun 2017
- Baccalaureate of Excellence with Honours: IES San Mateo – 10/10 May 2017
- EGMO contestant : European Girls' Mathematical Olympiad (Switzerland) Apr 2017
- ESTALMAT: 2-year mathematics talent program for 25 students in Com. Madrid 2012-14

## PROJECTS AND ACTIVITIES

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- International Mathematics Olympiads** – Organization and volunteering 2018-now
- IT at the European Girls' Mathematical Olympiad (EGMO): 2023 in Slovenia, 2024 in Georgia.
  - Deputy Leader of Spain at EGMO 2022 in Hungary and PAGMO 2021.
  - Guide at the Iberoamerican Mathematical Olympiad 2018 in Spain/Portugal.

- Departmental collaboration grant** – Universidad Complutense de Madrid Nov 2021-Jun 2022
- Grant: Beca de colaboración from Ministerio de Educación at Dept. Software Systems and Computation.
  - Identification of boolean functions that need big circuits to be computed, with Ismael Rodríguez Laguna.

- Mathematics research grant** – Instituto de Ciencias Matemáticas (ICMAT). Sep-Nov 2021
- Grant: Ayudas de introducción a la investigación ICMAT-Severo Ochoa .
  - Differential geometry methods in Machine Learning applications, with David Martín de Diego.

- L<sup>A</sup>T<sub>E</sub>X package: ddp<sub>h</sub>onism**  – Contained in MiKTeX and TeXLive 2019

- Music Conservatory in Recorder** – Conservatorio Profesional de Música Arturo Soria 2006-16

## LANGUAGES

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**Spanish** – Native

**English** – TOEFL iBT 110/120 (2021)

**German** – Goethe-Zertifikat B1 (2017)