

CELIA RUBIO MADRIGAL

 [celrm.github.io](https://github.com/celrm)  [celia-rubio-madrigal](https://www.linkedin.com/in/celia-rubio-madrigal)

I am a PhD candidate by Universität des Saarlandes, advised by Rebekka Burkholz, and a researcher at the Relational Machine Learning Lab at the CISPA Helmholtz Center for Information Security.

EXPERIENCE

Doctoral researcher · CISPA Helmholtz Center (Saarbrücken, Germany) **Oct 2023 – present**

- Group: Relational Machine Learning Lab. Advisor: Rebekka Burkholz.

Teaching assistant / Laboratory demonstrator · University of Strathclyde (Glasgow, UK) **Jan 2023 – Apr 2023**

- “CS310 Foundations of Artificial Intelligence” for Year 3 BSc Computer Science. Lecturer: Andrew Abel.


EDUCATION

PhD in Computer Science · Universität des Saarlandes (Saarbrücken, Germany) **2023 – present**

MSc in Advanced Computer Science with AI · University of Strathclyde (Glasgow, UK) **2022 – 2023**

- Fully funded by a Postgraduate Fellowship from “la Caixa” Foundation. 
- Dissertation: “Rendering string diagrams with Haskell’s Diagrams library”. Supervisor: Jules Hedges.

BEng in Computer Science · 91.6/100 · Universidad Complutense de Madrid (Madrid, Spain) **2017 – 2022**

- Activities: Member of the Faculty Board of CS. Secretary of the Students’ Union at the Faculty of CS.
- Dissertation: “Analysis of a neural network for the identification of complex Boolean functions”. Supervisors: Ismael Rodríguez Laguna, Daniel Loscos Barroso. 

BSc in Mathematics · 90.8/100 · Universidad Complutense de Madrid (Madrid, Spain) **2017 – 2022**

- Activities: Member of the peer mentoring program at the Faculty of Mathematics.
- Dissertation: “Search for complex Boolean functions: constructions through monotony, and connection between repetitiveness and endogamy”. Supervisors: Ismael Rodríguez Laguna, Narciso Martí Oliet.

CONFERENCES

9th Heidelberg Laureate Forum · HLF Foundation (Heidelberg, Germany) **Sep 2022**

13th and 14th JAE School of Mathematics · CSIC-ICMAT (Madrid, Spain) **2020 and 2021**

7th Mathematics and Computation in Music · Universidad Politécnica de Madrid (Madrid, Spain) **Jun 2019**

4th Lambda World Cádiz · An International Functional Programming Conference (Cádiz, Spain) **Oct 2018**

LANGUAGES

Spanish · Native

English · TOEFL iBT: 110/120 · Reading: 30/30 · Listening: 30/30 · Writing: 26/30 · Speaking: 24/30 **2021**

German · Goethe-Zertifikat B1 · Lesen: 83/100 · Hören: 80/100 · Schreiben: 79/100 · Sprechen: 90/100 **2017**

PROJECTS

Departmental collaboration project · *Universidad Complutense de Madrid* Nov 2021 – Jun 2022

- “Identification of boolean functions that need big circuits to be computed” with Ismael Rodríguez Laguna.
- Beca de colaboración from Ministerio de Educación at Dept. of Software Systems and Computation.

Mathematics research project · *CSIC-ICMAT Instituto de Ciencias Matemáticas* Sep 2021 – Nov 2021

- “Differential geometry methods in Machine Learning applications” with David Martín de Diego.
- Ayudas de introducción a la investigación ICMAT–Severo Ochoa.

Independent articles on Music and Mathematics · *DivulgaMAT* Sep 2019 – Dec 2019

- Independent research about the twelve-tone composition system and its mathematical ties to group theory.
- “Serialismo y matemáticas (I)” [↗](#), “(II)” [↗](#), “(III)” [↗](#) and “Re-escalando música” [↗](#).

LaTeX package: ddphonism · *The Comprehensive TeX Archive Network (CTAN)* [↗](#) Aug 2019 – Sep 2019

- LaTeX package for twelve-tone system notation diagrams. Contained in MiKTeX and TeXLive.

ACTIVITIES

International Mathematics Olympiads · *Volunteering* 2021 – present

- Staff / IT Expert at the 2023 European Girls' Mathematical Olympiad (EGMO) in Portorož, Slovenia.
- Deputy Leader of the Spanish team at the 2022 EGMO in Eger, Hungary.
- Deputy Leader of the Spanish team at the 2021 Pan-American Girls' Mathematical Olympiad (PAGMO).

Local Mathematics Olympiads · *Volunteering* 2018 – present

- Jury at the local phases of the 57th, 58th and 59th Olimpiada Matemática Española (OME) in Madrid.
- Guide at the 23rd Iberoamerican Mathematical Olympiad (IbMO) in La Rábida and Monte Gordo.

SWERC contestant · *South-Western European Regional Contest (Milan, Italy)* [↗](#) Apr 2022

- Team-based algorithmic Competitive Programming contest in C++.

EGMO contestant for Spain · *European Girls' Mathematical Olympiad (Zürich, Switzerland)* [↗](#) Apr 2017

Music Conservatory in Recorder · *Conservatorio Profesional de Música Arturo Soria (Madrid)* 2006 – 2016

HONOURS AND AWARDS

Nova III Student List · *Top 10 talents under 25 in Computer Science in Spain* [↗](#) Mar 2023

“la Caixa” Postgraduate Fellowship Abroad · *“la Caixa” Foundation* [↗](#) Jun 2022

6th Aula de Verano Blas Cabrera · *Seminar at UIMP for best undergraduate records in Spain* Aug 2022

Excellence Grants · *Beca de Excelencia for undergraduates in Comunidad de Madrid (2100€)* 2018 – 2022

Baccalaureate Extraordinary Award Madrid · *Top 25 in this exam in Comunidad de Madrid (1000€)* Jul 2017

Leading Program “la Caixa” · *Top 20 university admission marks in Comunidad de Madrid* Jun 2017

Baccalaureate of Excellence with Honours · *IES San Mateo (Madrid, Spain)* May 2017