

CELIA RUBIO MADRIGAL

 celrm.github.io

 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.


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

- 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

- Dissertation: "Search for complex Boolean functions: constructions through monotony, and connection between repetitiveness and endogamy". Supervisors: Ismael Rodríguez Laguna, Narciso Martí Oliet.

EXPERIENCE

Doctoral researcher · *CISPA Helmholtz Center for Information Security (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

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

Consultant developer intern · *Guidewire Software* Jul 2021 – Sep 2021

CONFERENCES

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

- Personal interview for their series HLFF Spotlight: 9th HLF "Inspiring Women in STEM – Celia Rubio Madrigal". 
- Front page interview for Tribuna Complutense: "Celia Rubio Madrigal, an example of a woman who succeeds in STEM". 

13th and 14th JAE School of Mathematics · *CSIC-ICMAT Instituto de Ciencias Matemáticas (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 Dec 2021

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

PROJECTS

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

- Project: "Identification of boolean functions that need big circuits to be computed". Supervisor: Ismael Rodríguez Laguna.
- Grant: Beca de colaboración from Ministerio de Educación at the Department of Software Systems and Computation.

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

- Project: "Differential geometry methods in Machine Learning applications". Supervisor: David Martín de Diego.
- Grant: 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, and their Music bundles.

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.
- YouTube videos for the math community: "ICMAT Introduction to Research" [📺](#), "Olympic inspirations" [📺](#), "Science is written with an A" [📺](#), and an intervention at the 20th anniversary of ESTALMAT Madrid [📺](#).

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

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

- Interviews in national newspapers El País [🔗](#), El Plural [🔗](#), and TV channel Telemadrid [🔗](#).

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 the Premio Extraordinario exam in 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