

CELIA RUBIO MADRIGAL

I am a PhD candidate in the Relational Machine Learning Lab at the CISPA Helmholtz Center for Information Security, enrolled at the University of Saarland and advised by Rebekka Burkholz.

EXPERIENCE

PhD 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**

- “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 – *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 – *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 · Listening: 30 · Writing: 26 · Speaking: 24 (out of 30)* **2021**
- German Goethe-Zertifikat B1 – *Lesen: 83 · Hören: 80 · Schreiben: 79 · Sprechen: 90 (out of 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.
- Grant: 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.
- 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. [↗](#)

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).
- Guide at the 2019 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