

SUMMARY

I am a second-year **PhD student** in theoretical computer science at **Lund University**, under the supervision of **Susanna F. de Rezende** and **Jakob Nordström**. Before that, I graduated from the Master of Logic at the University of Amsterdam and obtained a BSc in Computer Science from the University of the Basque Country.

RESEARCH INTERESTS

- computational complexity theory
- logic & proof complexity
- theoretical computer science
- philosophy of mathematics & mathematical practice

EDUCATION

Lund University

Lund, Sweden

PhD in Theoretical Computer Science

2022 –

- Supervised by Susanna F. de Rezende and Jakob Nordström, as part of the Mathematical Insights into Algorithms for Optimization (MIAO) research group.
- Funded by the Wallenberg AI, Autonomous Systems and Software (WASP) program.
- Expected graduation date: 2027.

University of Amsterdam

Amsterdam, The Netherlands

MSc in Logic (120 ECTS)

2020 – 2022

- Two-year master's program at the Institute for Logic, Language and Computation (ILLC). Courses in logic, theoretical computer science, mathematics and philosophy.
- Graduated *cum laude*, partially funded by the E. W. Beth Scholarship.
- **Thesis:** [Parameterized Compilability](#)
Supervisors: Ronald de Haan (ILLC, University of Amsterdam) and Hubie Chen (King's College London).

University of the Basque Country

San Sebastián, Spain

BSc in Computer Science (240 ECTS)

2016 – 2020

- Graduated first of my year, GPA: 9.43 (out of 10)
- Erasmus+ exchange at the KU Leuven (Belgium), during the academic year 2019-20.
- **Thesis:** [A Formal Language and Tool for QBF Family Definitions](#)
Supervisors: Marc Denecker (KU Leuven), Matthias van der Hallen (KU Leuven), Montserrat Hermo (University of the Basque Country).
Results presented at the QBF Workshop of the SAT 2020 conference (see [3]).

RESEARCH VISITS

Simons Institute for the Theory of Computing, UC Berkeley

Berkeley, USA

Visiting Graduate Student

January 2023 – May 2023

- Visiting Graduate Student for the semester-long *Meta-Complexity* program and the *Satisfiability: Theory, Practice and Beyond* reunion program.
- Stay funded by the Wallenberg AI, Autonomous Systems and Software (WASP) program.

University of Oxford

Oxford, UK

Visiting Graduate Student hosted by Ján Pich.

July 2023

Institute of Mathematics, Czech Academy of Sciences

Prague, Czech Republic

Visiting Graduate Student hosted by Erfan Khaniki.

February 2023

SUMMER SCHOOLS

EPIT Summer School 2023: Le Kaléidoscope de la Complexité

French National Centre for Scientific Research (CNRS)

Île d'Oléron, France

June 2023

Hilbert-Bernays Summer School on Logic and Computation

University of Göttingen

Göttingen, Germany

October 2020

RESEARCH PAPERS

- [1] **N. Arteche**, G. Carenini, and M. Gray, “Quantum Automating TC^0 -Frege is LWE-Hard”, Preprint.
- [2] **N. Arteche** and M. Hermo, “[Prime Implicant Enumeration via QBF Solvers](#)”, in *QBF Workshop at the 24th International Conference on Theory and Applications of Satisfiability Testing*, 2021.
- [3] **N. Arteche** and M. van der Hallen, “[A Formal Language for QBF Family Definitions](#)”, in *QBF Workshop at the 23rd International Conference on Theory and Applications of Satisfiability Testing*, 2020.

TEACHING EXPERIENCE

- **Guest lecturer** at the University of Amsterdam January 2024
Meta-Complexity (6 ECTS · MSc course) – Main teacher: Ronald de Haan
- **Teaching Assistant** at Lund University Spring 2023
Advanced Algorithms (7.5 ECTS · MSc course) – Lecturer: Susanna F. de Rezende
- **Teaching Assistant** at Lund University Fall 2022
Constraint Programming (7.5 ECTS · MSc course) – Lecturer: Per Andersson
- **Teaching Assistant** at the University of Amsterdam Spring 2022
Computational Complexity (6 ECTS · MSc course) – Lecturers: Ronald de Haan and Jan Maly

SCHOLARSHIPS AND AWARDS

- **Best Presentation Award at PROLE'23 (XXII Jornadas de Programación y Lenguajes 2023)** September 2023
For the talk *An Open Problem on the Complexity of Realizability for SAFETY LTL*.
- **Evert Willem Beth Scholarship** 2021 – 2022
Granted the E. W. Beth scholarship for my master's in logic at the University of Amsterdam.
- **Extraordinary BSc Degree Award** 2020
Best Computer Science student at the University of the Basque Country.
- **Kutxa Fundazioa Award** 2020
Best Computer Science Student.

PREVIOUS RESEARCH EXPERIENCE

University of the Basque Country

Logic & Reasoning Group (LoRea), Faculty of Computer Science

San Sebastián, Spain

– Predoctoral researcher, supervised by Montserrat Hermo

May 2021 – December 2021

* Topic: The complexity of realizability for temporal logics

LANGUAGES

Spanish (native speaker), **Basque** (native speaker), **English** (fluent, C2 level), **French** (fluent, C2 level).