Noel Arteche

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SUMMARY

I am a first-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 *cum laude* 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
- theoretical computer science
- logic
- 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.
  Completed 60 ECTS on master's level courses and wrote my thesis.
- 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

Summer Schools

EPIT Summer School 2023: Le Kaléidoscope de la Complexité	Île d'Oléron, France
French National Centre for Scientific Research (CNRS)	June 2023
Hilbert-Bernays Summer School on Logic and Computation	Göttingen, Germany
University of Göttingen	October 2020

Research Papers

[1] **N. Arteche**, G. Carenini, and M. Gray, "On the Quantum Automatability of Propositional Proof Systems", submitted to ITCS 2024.

[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

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

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

- Predoctoral researcher, supervised by Montserrat Hermo — May 2021 – December 2021
  * Topic: The complexity of realizability for temporal logics
- Research internship, supervised by Montserrat Hermo — June 2019 – August 2019
  * Topic: Empirical proof complexity of quantified Boolean formulas

Languages

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