

Elena Di Lavore

Born in Milano, Italy, 13/08/1995

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Education

Tallinn University of Technology

PhD

Estonia

2019 - present

- Thesis topic: Monoidal Width
Supervisor: Professor Paweł Sobociński
- Courses:
 - Functional programming
 - Philosophy of science
 - Machine learning
 - Academic writing

University of Oxford

MSc in Mathematics and Foundations of Computer Science

United Kingdom

2018 - 2019

- Thesis: Subgame Perfection in Compositional Game Theory
Supervisors: Dr Jules Hedges, Dr Jamie Vicary
- Mark: merit
- Courses:
 - Categories, proofs and processes
 - Categorical quantum mechanics
 - Axiomatic set theory
 - Computational number theory
 - Quantum computer science
 - Graph theory
 - Lambda calculus and types

Università di Pisa

BSc in Mathematics

Italy

2017 - 2018

- Thesis: Data-driven Estimation for Nash Equilibria
Supervisor: Professor Giancarlo Bigi
- Mark: 110 cum laude / 110
- Courses:
 - Arithmetic
 - Experimental laboratory of computational mathematics
 - Geometry 2
 - Mathematical logic
 - Elements of set theory
 - Physics 3
 - Algebra 1
 - Game theory

Politecnico di Milano

BSc in Mathematical Engineering

Italy

2014 - 2017

- Thesis: Floquet Theory Applied to a Perturbed Wave Equation
Supervisor: Professor Gianni Arioli
- Mark: 110 cum laude / 110
- Studies abroad: Erasmus program at Linnaeus University, Växjö, Sweden (August 2016 - January 2017)

– Courses:	
Computer science	Mathematical Analysis 1, 2, 3
Chemistry	Experimental physics 1, 2
Business economics and organisation	Statistics
Electrical engineering	Linear algebra and geometry
Fundamentals of automatic controls	Probability
Mathematical physics	Numerical mathematics
Advanced analog electronics	P.D.E. analytical and numerical methods
Algorithms and advanced data structures	Functional analysis
Analysis of structures	Models and methods for statistical inference
Algebraic structures 1	

Publications

- [1] Elena Di Lavore, Alessandro Gianola, Mario Román, Nicoletta Sabadini, and Paweł Sobociński. “Span(Graph): a Canonical Feedback Algebra of Open Transition Systems”. In: *Software and Systems Modeling* 22 (2023), pp. 495–520. DOI: [10.1007/s10270-023-01092-7](https://doi.org/10.1007/s10270-023-01092-7). arXiv: [2010.10069](https://arxiv.org/abs/2010.10069) [math.CT].
- [2] Elena Di Lavore and Mario Román. *Evidential Decision Theory via Partial Markov Categories*. to appear in *Logic in Computer Science* 2023. 2023. arXiv: [2301.12989](https://arxiv.org/abs/2301.12989) [cs.LO].
- [3] Elena Di Lavore, Giovanni de Felice, and Mario Román. “Monoidal Streams for Dataflow Programming”. In: *Proceedings of the 37th Annual ACM/IEEE Symposium on Logic in Computer Science*. 2022, pp. 1–14. DOI: [10.1145/3531130.3533365](https://doi.org/10.1145/3531130.3533365). arXiv: [2202.02061](https://arxiv.org/abs/2202.02061) [cs.LO].
- [4] Elena Di Lavore and Paweł Sobociński. *Monoidal Width: Capturing Rank Width*. to appear in *Applied Category Theory* 2022. 2022. arXiv: [2202.07582](https://arxiv.org/abs/2202.07582) [math.CT].
- [5] Elena Di Lavore, Alessandro Gianola, Mario Román, Nicoletta Sabadini, and Paweł Sobociński. “A Canonical Algebra of Open Transition Systems”. In: *Formal Aspects of Component Software*. Ed. by Gwen Salaün and Anton Wijs. Vol. 13077. Cham: Springer International Publishing, 2021, pp. 63–81. ISBN: 978-3-030-90636-8. DOI: [10.1007/978-3-030-90636-8_4](https://doi.org/10.1007/978-3-030-90636-8_4). arXiv: [2010.10069v1](https://arxiv.org/abs/2010.10069v1) [math.CT].
- [6] Elena Di Lavore, Jules Hedges, and Paweł Sobociński. “Compositional Modelling of Network Games”. In: *29th EACSL Annual Conference on Computer Science Logic (CSL 2021)*. Ed. by Christel Baier and Jean Goubault-Larrecq. Vol. 183. Leibniz International Proceedings in Informatics (LIPIcs). Dagstuhl, Germany: Schloss Dagstuhl–Leibniz-Zentrum für Informatik, 2021, 30:1–30:24. ISBN: 978-3-95977-175-7. DOI: [10.4230/LIPIcs.CSL.2021.30](https://doi.org/10.4230/LIPIcs.CSL.2021.30). arXiv: [2006.03493](https://arxiv.org/abs/2006.03493) [cs.GT].
- [7] Giovanni de Felice, Elena Di Lavore, Mario Román, and Alexis Toumi. “Functorial Language Games for Question Answering”. In: *Electronic Proceedings in Theoretical Computer Science*. Vol. 333. Open Publishing Association, Feb. 2021, pp. 311–321. DOI: [10.4204/eptcs.333.21](https://doi.org/10.4204/eptcs.333.21).

Academic commitments

- (2022) Program committee member of the Applied Category Theory conference.
- (2022-2023) Organiser of the Applied Category Theory Adjoint School.
- Reviewer for conferences (LiCS, MFPS, ACT, ...) and journals (TAC, RAIRO).

Other skills

Language skills

- Italian: mother tongue
- English: C1

Programming languages

- Idris, Matlab
- C, Java: basic knowledge
- R, SQL: basic knowledge

Awards

Kleene Award for [3]	2022
Exemptions for High Academic Performance (Politecnico di Milano)	2015–2017
Best Freshers Award (Politecnico di Milano)	2015