

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 Julian 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)

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| – Courses: | |
| Computer science | Mathematical Analysis 1, 2, 3 |
| Chemistry | Experimental physics 1, 2 |
| Business economics and organization | 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 and preprints

- [1] Elena Di Lavore, Giovanni de Felice, and Mario Román. *Monoidal Streams for Dataflow Programming*. To appear in LiCS 2022. 2022. arXiv: 2202.02061 [cs.LO].
- [2] Elena Di Lavore and Paweł Sobociński. *Monoidal Width: Unifying Tree Width, Path Width and Branch Width*. 2022. arXiv: 2202.07582 [math.CT].
- [3] 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. arXiv: 2010.10069 [math.CT].
- [4] 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. arXiv: 2006.03493 [cs.GT].
- [5] Elena Di Lavore, Wilmer Leal, and Valeria de Paiva. *Dialectica Petri nets*. 2021. arXiv: 2105.12801 [math.CT].
- [6] Giovanni de Felice, Elena Di Lavore, Mario Román, and Alexis Toumi. “Functorial Language Games for Question Answering”. In: *Electronic Proceedings in Theoretical Computer Science* 333 (Feb. 2021), pp. 311–321. DOI: 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) 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

Grants

Best Freshers Award (Politecnico di Milano) 2015
Exemptions for High Academic Performance (Politecnico di Milano) 2015-2017