# 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
- Teaching experience as TA for the introductory course on Category Theory

### 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 | Quantum computer science |
| Categorical quantum mechanics | Graph theory |
| Axiomatic set theory | Lambda calculus and types |
| Computational number theory | |

### 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 | Elements of set theory |
| Experimental laboratory of computational mathematics | Physics 3 |
| Geometry 2 | Algebra 1 |
| Mathematical logic | 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. arXiv: 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 [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. arXiv: 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 [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. arXiv: 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. arXiv: 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.

## 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