

# Curriculum Vitae

## Luca Reggio

### Personal information

*Name:* Luca Reggio

*Date of birth:* July 31, 1989

*Nationality:* Italian

*Place of birth:* Monza, Italy

### Affiliation

Department of Computer Science  
University of Oxford  
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OX1 3QD Oxford, UK

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### Education

**09/2015 – 09/2018**

**Ph.D. in Mathematics, *mention très honorable***

Institut de Recherche en Informatique Fondamentale (IRIF), Paris-Diderot,  
Université de Paris, France.

*Ph.D. Program:* Logic and Foundations of Computer Science

*Supervisor:* Mai Gehrke

*Ph.D. Thesis:* Quantifiers and duality

*Jury:* Samson Abramsky (president of the jury, University of Oxford), Clemens Berger (University of Nice), Mai Gehrke (supervisor, CNRS & University of Nice), Sam van Gool (co-supervisor, University of Amsterdam), Mamuka Jibladze (reviewer, University of Tbilisi), Achim Jung (reviewer, University of Birmingham), Paul-André Melliès (CNRS & University of Paris-Diderot), Daniela Petrişan (co-supervisor, University of Paris-Diderot).

**09/2012 – 04/2015**

**Master of Mathematics, *cum laude***

Department of Mathematics *Federigo Enriques*  
Università degli Studi di Milano Statale, Italy.

*MSc Thesis:* Stone duality above dimension zero

*MSc Thesis Supervisor:* Vincenzo Marra

**09/2008 – 02/2012**

**Bachelor of Mathematics, *with full marks***

Department of Mathematics  
Università di Trento, Italy.

## Academic positions

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|--------------------------|---|
| <b>02/2020 – 01/2022</b> | <b>Marie Skłodowska-Curie Fellow</b><br>Department of Computer Science of the <u>University of Oxford</u><br>United Kingdom.  |
| <b>08/2019 – 01/2020</b> | <b>Post-doctoral researcher</b><br>Mathematical Institute, <u>University of Bern</u> , Switzerland.   |
| <b>10/2018 – 07/2019</b> | <b>Post-doctoral researcher</b><br>Institute of Computer Science of the <u>Czech Academy of Sciences</u><br>Prague, Czech Republic.   |
| <b>09/2017 – 09/2018</b> | <b>Ph.D. candidate</b><br>Laboratoire J. A. Dieudonné, <u>Université Côte d’Azur</u> , Nice, France.<br>(In September 2017 my Ph.D. supervisor, Mai Gehrke, moved from Paris-Diderot to the Laboratoire Dieudonné). |
| <b>09/2015 – 08/2017</b> | <b>Ph.D. candidate</b><br>Institut de Recherche en Informatique Fondamentale (IRIF), Paris-Diderot<br><u>Université de Paris</u> , France.  |

## List of publications

1. M. Gehrke, D. Petrişan, **L. Reggio**, The Schützenberger product for syntactic spaces, *International Colloquium on Automata, Languages, and Programming (ICALP)*, *LIPICs* **55**: 112:1–112:14 (2016).
2. V. Marra, **L. Reggio**, Stone duality above dimension zero: the algebraic theory of  $C(X)$ , *Advances in Mathematics* **307**, 253–287 (2017).
3. M. Gehrke, D. Petrişan, **L. Reggio**, Quantifiers on languages and codensity monads, *Symposium on Logic in Computer Science (LICS)*, 1–12 (2017).
4. S.J. van Gool, **L. Reggio**, An open mapping theorem for finitely copresented Esakia spaces, *Topology and its Applications* **240**, 69–77 (2018).
5. **L. Reggio**, Codensity, profiniteness and algebras of semiring-valued measures, *Journal of Pure and Applied Algebra* **224**, 181–205 (2020).
6. M. Gehrke, T. Jakl, **L. Reggio**, A duality theoretic view on limits of finite structures, *International conference on Foundations of Software Science and Computation Structures (FoSSaCS)*, 299–318 (2020).

## Manuscripts submitted to peer-reviewed international journals

7. M. Abbadini, **L. Reggio**, *On the axiomatisability of the dual of compact ordered spaces*, preprint available at <https://arxiv.org/abs/1909.01631>.
8. V. Marra, **L. Reggio**, *A characterisation of the category of compact Hausdorff spaces*, preprint available at <https://arxiv.org/abs/1808.09738>.
9. M. Gehrke, D. Petrişan, **L. Reggio**, *Quantifiers on languages and codensity monads*, extended version of the LICS’17 paper, preprint available at <https://arxiv.org/abs/1702.08841>.

## Theses

10. **L. Reggio**, *Stone duality above dimension zero*, Master's thesis, University of Milano, available at <https://luca Reggio.github.io/publications>.
11. **L. Reggio**, *Quantifiers and duality*, Ph.D. thesis, Université Sorbonne Paris Cité, available at <https://luca Reggio.github.io/publications>.

## Invited presentations in international conferences and workshops

1. *Quantifiers and measures*, at *Online workshop on resources and co-resources*, March 2020.
2. *Dualities in logic: old and new results*, at *XII Congresso dell'Unione Matematica Italiana, sezione Logica Matematica*, Pavia, Italy, September 2019.
3. *Dualities in logic*, tutorial in two parts at *PhDs in Logic XI*, Bern, Switzerland, April 2019.
4. *Pretoposes and topological representations*, at *ToLo VI: Topological Methods in Logic*, Tbilisi State University, Georgia, July 2018.
5. *Towards a general Stone-Gelfand duality*, at *ToLo V: Topological Methods in Logic*, Tbilisi State University, Tbilisi, Georgia, June 2016.

## Contributed presentations at international, peer-reviewed conferences

1. *Axiomatising categories of spaces: the case of compact Hausdorff spaces*, at *Topology, Algebra, Categories in Logic (TACL)*, Nice, France, June 2019.
2. *A pretopos theoretic characterisation of compact Hausdorff spaces*, at *Journées niçoises: Logique catégorique, topos et dualités*, Nice, France, January 2018.
3. *Quantifiers, languages and codensity monads*, at *Topology, Algebra, Categories in Logic (TACL)*, Charles University, Prague, Czech Republic, June 2017.
4. *The Schützenberger product for syntactic spaces*, at the *43rd International Colloquium on Automata, Languages, and Programming (ICALP)*, Rome, July 2016.
5. *Axiomatising the dual of compact Hausdorff spaces*, at *Topology, Algebra, Categories in Logic (TACL)*, Ischia, Italy, June 2015.
6. *Stone duality above dimension 0*, at the *18th Annual Conference on Ordered Algebraic Structures*, H. L. Wilkes Honors College, Florida, May 2015.

Between 2014 and 2020, I gave more than 20 presentations at local seminars and international workshops. For a complete list, please refer to <https://luca Reggio.github.io/talks>.

## Funding

|                   |   |
|-------------------|---|
| 02/2020 – 01/2022 | <b>Marie Skłodowska-Curie Individual Fellowship</b> , funded by the EU programme Horizon 2020. The two-year project, entitled <i>Duality for finite models: relating Structure and Power</i> , is hosted by the Department of Computer Science of the University of Oxford and supervised by Samson Abramsky. |
| 01/2019 – 12/2020 | <b>CAS-ICS postdoctoral position</b> , jointly funded by the Czech Academy of Sciences and the Institute of Computer Science, two years of full funding for the applicant's postdoctoral research.  |
| 10/2018 – 09/2020 | <b>Fellowship for Junior Researchers</b> of the Institute of Computer Science of the Czech Academy of Sciences, two years of full funding for the applicant's postdoctoral research. In January 2019 I renounced to this fellowship to take up the previous one.  |
| 10/2015 – 09/2018 | <b>Sorbonne Paris Cité Volant International Ph.D. scholarship</b> , three years of full funding for the applicant's Ph.D. research project, awarded by Sorbonne Paris Cité.   |

## Participation in research projects

|                   |  |
|-------------------|--|
| 08/2019 – 01/2020 | <b>Hidden quantifiers</b> , funded by the Swiss National Science Foundation (SNSF). P. I.: G. Metcalfe.  |
| 01/2019 – 07/2019 | <b>Predicate graded logics and their applications to computer science</b> , funded by the Czech Science Foundation (GACR). P. I.: C. Noguera.  |
| 09/2015 – 09/2018 | <b>DuaLL: Duality in Formal Languages and Logic</b> , funded by the European Research Council (ERC), Advanced Grant. P. I.: M. Gehrke.<br>This project provided funding for the applicant's research visits and participation to international conferences during his Ph.D. studies. |

## Teaching and assessment

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|-------------|--|
| Spring 2020 | Assessor for two Part C and Oxford Masters in Mathematical Sciences dissertations. |
| Fall 2019   | <b>Model theory</b> (Master's level, taught by G. Metcalfe), teaching assistant.   |
| Fall 2019   | <b>Seminar on Duality Theory</b> (Master's level), co-organiser with G. Metcalfe.  |

## Prizes and awards

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|---------|---|
| 06/2020 | <b>Premio Speciale Paolo Gentilini</b> for Ph.D. theses in mathematical logic and its applications to theoretical computer science. Awarded by the Italian Association for Logic and its Applications (AILA). |
| 11/2019 | <b>Premio Ada Lettieri</b> for the paper <i>Stone duality above dimension zero</i> (Adv. Math. <b>307</b> , 2017), written jointly with Vincenzo Marra. Awarded by AILA.                                      |
| 05/2015 | <b>AILA Prize 2015</b> for the best Master's theses in Logic.   |

## Organisation of scientific meetings

- 09/2017 – 07/2018**      **Dualité de Stone, langages formels et logique**, weekly seminar at Université Côte d’Azur.  
Organisation, together with Mai Gehrke, and website.
- 09/2018**      **Workshop on Quantifiers and Duality** at Université Paris-Diderot.  
Organisation, programme and website.
- 06/2019**      **Topology, Algebra, and Categories in Logic (TACL)**, international conference at Université Côte d’Azur.  
Member of the organising committee.
- 10/2020**      **Resources and co-Resources: the role of duality theory (CORAL)**, international workshop in Nice (France).  
Member of the organising committee.

## Conference and workshop scientific committees

- 04/2020**      **PhDs in Logic XII**, Berlin.  
Member of the scientific committee.

## Reviewing activities

Anonymous peer reviewer for several international conferences, including *LICS 2017*, *LICS 2019*, *RAMICS 2020*, *CSL 2021* and *CALCO 2017 Early Ideas*, and for several international journals, including *Annals of Pure and Applied Logic*, *Algebra Universalis*, *Journal of Logic and Analysis*, *Journal of Pure and Applied Algebra*, *Journal of Logic and Computation*, *Logic Journal of the IGPL*, and *Houston Journal of Mathematics*.

## Language Skills

**Italian** (native speaker), **English** (fluent), **French** (fluent).