

# Gabriele Lobbia

*Postdoc in Mathematics*

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## Professional Experience

- 2022–present **Postdoctoral Researcher**, *Masaryk University*, Brno, Czech Republic.  
Aug-Dec **Part-Time Researcher**, *Masaryk University*, collaborating with John Bourke on skew monoidal categories, multicategories and connections with higher dimensional categories.  
2021

## Education

- 2018–2022 **PhD Student in Mathematics**, *Funded by an EPSRC Scholarship*, University of Leeds.  
Supervisors Dr. N. Gambino and Prof. P. Martin  
Thesis Title Pseudomonads, Relative Monads and Strongly Finitary Notions of Multicategory  
2016–2018 **ALGANT Master Program Degree (M.S.)**, *Università degli studi di Milano* 110/110 cum laude, *Universität Regensburg* 1.0/1.0.  
Advisor Prof. Dr. Denis-Charles Cisinski  
Thesis Title Kan Complexes as a Univalent Model of Type Theory  
2013–2016 **Laurea Triennale in Matematica (B.S.)**, *Università degli studi di Milano*, 110/110.

## Research Interests

Category theory, universal algebra, skew structures, higher category theory, categorical logic.

## Publications and Preprints

- \*2022 *A skew approach to enrichment for Gray-categories*, joint with John Bourke [arXiv:2212.12358](#).
- \*2022 *KZ-monads and Kan Injectivity*, joint with Ivan Di Liberti and Lurdes Sousa [arXiv:2211.00380](#).
- \*2020 *Distributive laws for relative monads*, [arXiv:2007.12982](#).
- 2021 *On the formal theory of pseudomonads and pseudodistributive laws*, joint with Nicola Gambino, *Theory and Applications of Categories*, 37 (2), 2021, pp. 14-56.

## Scholarships, Awards and Grants

- 2018–2022 EPSRC Scholarship

## Conference Talks

- Kan Injectivity and KZ-monads (SYCO 9, Como, Sep 2022, contributed)
- Finitary Definitions of Multicategory (CT20->21, Genova, Sep 2021, contributed)
- The Formal Theory of Pseudomonads (1st ItaCa Workshop, Milano, Dic 2019, contributed)
- The Formal Theory of Pseudomonads (Postgraduate Conference in Category Theory and its Applications, Leicester, Nov 2019, invited)

## Seminar Talks, invited

- A nice picture of 2-cats (Se Mi Narri, Pavia online, Mar 2021)
- Distributive laws for relative monads (Masaryk University Algebra Seminar, Brno online, Dic 2020)

- A Formal Approach to Generalisations of Monads (Category Theory Seminar, Cambridge, Jan 2020)

## Seminar Talks, contributed

- KZ-monads and Kan injectivity (Masaryk University Algebra Seminar, May 2022)
- Monoidal Categories vs Multicategories (Postgraduate Logic seminar, Leeds online, Nov 2020)
- Distributive laws for relative monads (Virtual Logic Seminar, Leeds online, Jun 2020)
- Everything is connected, everything is Yoneda (Pure Postgraduate seminar, Leeds, Feb 2020)
- The Formal Theory of Pseudomonads (Proofs, computations and constructions, Leeds, Nov 2019)
- A nice picture of 2-cats (Pure Postgraduate seminar, Leeds, Mar 2019)
- Kan Complexes as a Univalent Model of Type Theory (Postgraduate Logic seminar, Leeds, Oct 2018)

## Conferences, Workshops and Summer/Winter Schools

- Dic 2022 3rd ItaCa Workshop, Pisa
- Sep 2022 SYCO 9 (Symposium on Compositional Structures), Como
- Jul 2022 School on Bicategories, Categorification and Quantum Theory, Leeds
- Jun 2022 TACL 2022 (Topology, Algebra and Categories in Logic), Coimbra
- May 2022 PSSL 106 (Peripatetic Seminar on Sheaves and Logic), Brno
- Ap–Nov 2022 ItaCa Fest 2022, online
- Dic 2021 2nd ItaCa Workshop, Genova
- Sep 2021 CT20→21, Genova
- Apr–Jun 2021 ItaCa Fest 2021, online
- Jun–Dic 2020 ItaCa Fest 2020, online
- Dic 2019 1st ItaCa Workshop, Milano
- Dic 2019 SYCO 6 (Symposium on Compositional Structures), Leicester
- Nov 2019 Postgraduate Conference in Category Theory and its Applications, Leicester
- July 2019 CT 2019, Edinburgh
- June 2019 Higher Topos Theory and Univalent Foundations, Leeds
- May 2019 PSSL 105 (Peripatetic Seminar on Sheaves and Logic), Palermo

## Teaching

- Spring 2021 Tutorials ( $\approx 10$  students) for MATH1026 Sets, Sequences and Series, University of Leeds
- Autumn 2020 Marking for MATH2022 Groups and Vector Spaces, University of Leeds
- Autumn 2020 Drop-in sessions for MATH2022 Groups and Vector Spaces, University of Leeds
- Spring 2020 Tutorials ( $\approx 10$  students) for MATH1400 Modelling with Differential Equations, University of Leeds
- Spring 2020 Tutorials ( $\approx 10$  students) for MATH1060 Introductory Linear Algebra, University of Leeds
- Autumn 2019 Workshops ( $\approx 40$  students) for MATH2022 Groups and Vector Spaces, University of Leeds
- Autumn 2019 Tutorials ( $\approx 10$  students) for MATH1225 Introduction to Geometry, University of Leeds
- Spring 2019 Marking for MATH3044 Number Theory, University of Leeds
- Spring 2019 Tutorials ( $\approx 10$  students) for MATH1026 Sets, Sequences and Series, University of Leeds

## Conference Organisation

- May 2022 Member of the Organising Committee of the PSSSL 106 (Peripatetic Seminar on Sheaves and Logic), Brno
- June 2019 Member of the Organising Committee of the Higher Topos Theory and Univalent Foundations Summer School 2019, Leeds

## Seminar Organisation

- 2019-2021 Co-organiser of the Pure Postgraduate Seminar, Leeds

## Professional Memberships

- 2018–2021 Student member of the Association for Symbolic Logic

## Computer Skills

- Languages  $\text{\LaTeX}$ , C
- Platforms Windows

## Languages

- Italian Native
- English Fluent