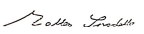Curriculum Vitæ.   Matteo Spadetto.

Born in Conegliano (Venetia, Italy) on the 11th of July 1995. Italian citizen.

matteo.spadetto.42@gmail.com ∘ *m.spadetto@leeds.ac.uk* ∘ ORCID *0000-0002-6495-7405*
Leeds, United Kingdom ∘ *Thursday the 16th of November 2023* ∘ *Personal Webpage Here* ∘

Education

Oct 2020 - Currently	**PhD in Mathematics**, *University of Leeds*, UK
Research area →	Categorical Logic & Dependent Type Theory.
Research topics →	(hyper)doctrines; quantifier completions of doctrines; fibrations; simple (co)product completions of fibrations; gödel doctrines/fibrations; categorified quantifier-freeness; categorical semantics for (fragments of) first order logic; dialectica categories; dialectica construction; dialectica completion; existence property; choice principles; propositional type theory; propositional Σ and Π types; propositional η and β computation rules; syntactic categories; categorical semantics for dependent type theories; display map classes; bicategorical semantics; bicategories with a display map classes; categories with attributes; comprehension categories; propositional versus judgemental in dependent type theories; conservativity; path categories; coherence; weak adjunctions; property-like 2-monads.
Supervisors →	Nicola Gambino (University of Manchester); Federico Olimpieri (University of Leeds); Michael Rathjen (University of Leeds).
Sept 2017 - Dec 2019	**MSc in Mathematics**, *University of Trento*, Italy
Final mark →	*Cum laude.* Thesis defense on the 19th of December 2019.
Visiting positions →	Academic year 2017/18 attended at the University of Trento (Italy). Academic year 2018/19 attended at Utrecht University (the Netherlands) as Erasmus+ student. Fall 2019 (from September to December) attended at Utrecht University as master's candidate holder of a thesis research scholarship.
Thesis supervisor →	Jaap van Oosten (Utrecht University).
Thesis co-examiner →	Roberto Zunino (University of Trento).
Thesis title →	*Generalised Gluing and Exact Completion of Path Categories.*
Sept 2014 - Sept 2017	**BSc in Mathematics**, *University of Trento*, Italy
Final mark →	*Cum laude.* Thesis defense on the 25th of September 2017.
Thesis supervisor →	Stefano Baratella (University of Trento).
Thesis co-examiner →	Edoardo Ballico (University of Trento).
Thesis title →	*Elements of Category Theory.*

Publications and preprints

Preprints

Mar 2023
`2303.05623v1`
A conservativity result for homotopy elementary types in dependent type theory
Submitted.

Apr 2021
`2104.14021v1`
The Gödel fibration, *extended version*
Some of the contents published in *LIPIcs, volume 202, proceedings of MFCS 2021.*
Together with Davide Trotta and Valeria de Paiva.

Oct 2020
`2010.09111v3`
Quantifier completions, choice principles and applications
Submitted.
Together with Davide Trotta.

Papers in journals

May 2022
ScienceDirect Link
`2205.07093v1`
Dialectica principles via Gödel doctrines
Theoretical Computer Science.
Together with Davide Trotta and Valeria de Paiva.

Mar 2022
JLC Link
Dialectica logical principles: not only rules, *extended version*
Journal of Logic and Computation (LFCS 2022 post-conference volume).
Together with Davide Trotta and Valeria de Paiva.

Papers in refereed conference proceedings

Sept 2021
Springer Link
`2109.08064v1`
Dialectica logical principles
Logical Foundations of Computer Science 2022.
Together with Davide Trotta and Valeria de Paiva.

Aug 2021
LIPIcs Link
The Gödel fibration
LIPIcs, volume 202, proceedings of Mathematical Foundations of Computer Science 2021.
Together with Davide Trotta and Valeria de Paiva.

Talks

In conferences and workshops

June 2022
What is a dependent type theory?
Leeds School of Mathematics PGR Conference 2023 (link here).
An introduction to what dependent type theories are and how they are used to do mathematics.

June 2023
YouTube Recording
Slides
Strictifying Path Categories
Workshop on Doctrines & Fibrations (link here).
About a coherence result for path categories (j.w.w. van den Berg and Otten).

May 2023
Slides
Propositional dependent type theories: a conservativity result for homotopy elementary types
Homotopy Type Theory 2023 (link here).
About `2303.05623v1`.

May 2023
Slides
Weak type theories: a conservativity result for homotopy elementary types
DutchCATS (link here).
About `2303.05623v1`.

Dec 2022
YouTube Recording
A conservativity-like result for a propositional type theory
3rd ItaCa Workshop (link here).
About `2303.05623v1`.

July 2022
YouTube Recording
Slides
Dialectica: fibrations and logical principles
Applied Category Theory 2022 (link here).
About `10.1007/978-3-030-93100-1_22` (`2109.08064v1`) and `2205.07093v1`.

June 2022
***Propositional* in Dependent Type Theory**
Leeds School of Mathematics PGR Conference 2022 (link here).
An introduction to homotopy type theory and its motivation.

Jan 2022	**Dialectica completion & dialectica logical principles**
Slides	*26th Yorkshire and Midlands Category Theory Seminar. (link here and here)*
	About 2104.14021v1 and 10.1007/978-3-030-93100-1_22 (2109.08064v1).

Dec 2021	**Dialectica completion & Gödel fibrations**
	2nd ItaCa Workshop (link here).
	About 2104.14021v1 and 10.1007/978-3-030-93100-1_22 (2109.08064v1).

Dec 2021	**Dialectica logical principles**
	Eighth Symposium on Compositional Structures (link here).
	About 2104.14021v1 and 10.1007/978-3-030-93100-1_22 (2109.08064v1).

July 2021	**The Gödel Fibration**
Poster	*Applied Category Theory 2021 (link here). Poster presentation.*
	About 2104.14021v1 and 10.4230/LIPIcs.MFCS.2021.87.

June 2021	**Quantifier completions of doctrines**
YouTube Recording	*Categories and Companions Symposium 2021 (link here).*
	About 2010.09111v3.

In seminars

October 2023	**Quantification and adjunction**
	Leeds Pure Postgraduate Seminar 2023/24.
	How to recover the semantical coherence for fragments of first-order logic.

June 2023	**Coherence in the semantics of dependent types**
	Leeds Postgraduate Logic Seminar 2022/23.
	On the re-indexing problem in models of dependent type theories.

June 2023	**Coherence for Extensional, Intensional and Propositional Identities**
	Category Theory Lunch.
	About a coherence result for path categories (j.w.w. van den Berg and Otten).

May 2023	**Propositional dependent type theories: a conservativity result for homotopy elementary types**
	Category Theory Lunch.
	About 2303.05623v1.

Apr 2023	**Left & right adjoint fibration splittings**
	Category Theory Lunch.
	About the two ways of splitting a given Grothendieck fibration.

Feb 2022	**Towards the notion of Propositional Dependent Sum Types**
	Proofs, Constructions, Computations and Categories.
	About my PhD research on Propositional Type Theory.

Nov 2021	**On the notion of exact completion**
	Leeds Postgraduate Logic Seminar 2021/22.
	On the exact/quotient completion of lex cats/path cats/doctrines.

Nov 2021	**Existential, universal and dialectica completion**
	Proofs, Constructions, Computations and Categories.
	About 2104.14021v1 and 10.4230/LIPIcs.MFCS.2021.87.

Oct 2021	**Regular (first-order) logic symbols & doctrines**
	Groningen Mathematics PhD Seminar.
	About doctrines and generalised Tarski's semantics.

May 2021	**Regular logic symbols & doctrines**
	Leeds Pure Postgraduate Seminar 2020/21.
	Introduction to doctrines.

Apr 2019	**On the strong conceptual completeness**
	Student Seminar Ultracategories 2019 (link here).
	About Ultracategories by Jacob Lurie.

Feb 2019	**On ultraproducts and ultrafunctors**
	Student Seminar Ultracategories 2019 (link here).
	About Ultracategories by Jacob Lurie.

Editorial activities

Spring 2023 **Reviewer**
Logical Methods in Computer Science.

Spring 2022 **Reviewer**
Logic Journal of the IGPL 2022 Volume 30.

July 2021 **Reviewer**
Workshop on Logic, Language, Information and Computation 2021.

June 2021 **Reviewer**
Mathematical Foundations of Computer Science 2021.

Organisational duties

June 2023 **Member of the Organising Committee**
Link *Leeds School of Mathematics PGR Conference 2023.*

July 2022 **Practical organiser**
Link *Research School on Bicategories, Categorification and Quantum Theory.*

June 2022 **Member of the Organising Committee**
Link *Leeds School of Mathematics PGR Conference 2022.*

Visiting activities

Apr-May 2023 **ILLC, Amsterdam**, *Netherlands*
Host. Benno van den Berg

Dec 2022 **University of Padua**, *Italy*
Host. Maria Emilia Maietti

Teaching

Fall 2023 **Number Systems**, University of Leeds
Teaching assistance. *Tutorial teacher and homework marker.*

Fall 2023 **Coding Theory**, University of Leeds
Teaching assistance. *Homework marker.*

Spring 2023 **Core Mathematics**, University of Leeds
Teaching assistance. *Exam marker.*

Spring 2023 **Real Analysis**, University of Leeds
Teaching assistance. *Homework marker.*

Spring 2023 **Discrete Mathematics**, University of Leeds
Teaching assistance. *Workshop teacher and homework marker.*

Fall 2022 **Elementary Differential Calculus 1**, University of Leeds
Teaching assistance. *Exam marker.*

Fall 2022 **Intro to Applied Mathematics 1**, University of Leeds
Teaching assistance. *Exam marker.*

Fall 2022 **Further Linear Algebra**, University of Leeds
Teaching assistance. *Workshop teacher and homework marker.*

Spring 2022	**Real Analysis**, University of Leeds Teaching assistance. *Workshop teacher and homework and exam marker.*
Fall 2021	**Groups & Vector Spaces**, University of Leeds Teaching assistance. *Exam marker.*
Fall 2021	**Graph Theory**, University of Leeds Teaching assistance. *Exam marker.*
Fall 2021	**Introduction to Geometry**, University of Leeds Teaching assistance. *Tutorial teacher and homework marker.*
Spring 2021	**Introductory Linear Algebra**, University of Leeds Teaching assistance. *Tutorial teacher and homework marker.*
Spring 2021	**Logic & Computation**, University of Leeds Teaching assistance. *Homework marker.*
Fall 2020	**Further Linear Algebra**, University of Leeds Teaching assistance. *Exam marker.*
Fall 2020	**Graph Theory**, University of Leeds Teaching assistance. *Exam marker.*

Teaching -i.e. imprinting signs, according to the etymology of this verb in latin- for me means helping others to find a way to learn for themselves. I live teaching as a noble and very important activity, to which I love to dedicate time and effort, and which from time to time teaches a lot first of all to myself. Below are the comments from students about my teaching style during Fall 2022 and Spring 2023.

● Offered us extra time to go through thingl and was attentive to answering questions. Overall good, sometimes struggled to understand what he was trying to explain though. ● It was taught in an understandable way, and the tutor went out of his way to go over the work in other ways until you understood. He also explained why certain things were done in specific ways so that we would understand more. He also voluntarily extended our tutorial into a 2hour session for more face to face learning. ● Matteo goes through the questions really well and he would go the extra mile to help out and make sure we understand ● He was patiently explaining our questions. And volunteering doing extra hours to help us. The explanation are clear and understandable. The extra hour to answer questions are really helpful. ● Very clear explanation going over the notes and examples ● Very helpful and went the extra mile ● Very useful tutorial, help me to catch up on the missing knowledge. The teacher is also very kind and always explains in detail. ● He teaches the content well and gives help when necessary.

Participation in conferences, workshops, seminars, and schools

July 2023	**Category Theory 2023**	
	Link	Conference. *UCLouvain.*
June 2023	**Leeds School of Mathematics PGR Conference 2023**	
	Link	Conference. *University of Leeds.*
May-June 2023	**Workshop on Doctrines & Fibrations**	
	Link	Workshop. *University of Padua.*
May 2023	**Homotopy Type Theory 2023**	
	Link	Conference. *Carnegie Mellon University.*
May 2023	**DutchCATS**	
	Link	Workshop. *ILLC, University of Amsterdam.*
Dec 2022	**3nd ItaCa Workshop**	
	Link	Workshop. *University of Pisa.*
Oct 2022 - Currently	**Category Theory Lunch**	
		Seminar. *Leeds & Manchester Category & Type Theory Group, University of Manchester.*
July 2022	**School on Univalent Mathematics**	
	Link	Summer school. *Cortona, Scuola Matematica Interuniversitaria.*

July 2022	**Applied Category Theory 2022**
Link	Conference. *University of Strathclyde.*
July 2022	**Research School on Bicategories, Categorification and Quantum Theory**
Link	Summer school. *University of Leeds.*
June 2022	**Leeds School of Mathematics PGR Conference 2022**
Link	Conference. *University of Leeds.*
May 2022	**WG6 kick-off meeting. Syntax and Semantics of Type Theories**
Link	Workshop. *Stockholm University.*
May - July 2022	**Category Theory Lunch**
	Seminar. *Logic Group of the School of Mathematics, University of Leeds.*
Apr 2022	**Midlands Graduate School in the Foundations of Computer Science**
Link	School. *University of Nottingham.*
Mar 2022	**Workshop on Polynomial Functors**
Link	Online workshop. *Topos Institute.*
Dec 2021	**2nd ItaCa Workshop**
Link	Workshop. *University of Genoa.*
Dec 2021	**Eighth Symposium on Compositional Structures**
Link	Workshop. *Tallinn University of Technology.*
Sept 2021 - May 2022	**Proofs, Constructions, Computations and Categories**
	Seminar. *Logic Group of the School of Mathematics, University of Leeds.*
Sept 2021	**Unifying Themes in Geometry**
Link	Online school. *Lake Como School of Advanced Studies.*
Sept 2021	**Continuity, Computability, Constructivity 2021**
Link	Online workshop. *University of Birmingham.*
Sept 2021	**Category Theory 2021**
Link	Conference. *University of Genoa.*
Aug 2021	**46th International Symposium on Mathematical Foundations of Computer Science 2021**
Link	Conference. *EATCS.*
July 2021	**Toposes Online**
Link	Online conference. *IHES and University of Insubria.*
July 2021	**Logic Colloquium 2021**
	Online conference.
July 2021	**Applied Category Theory 2021**
Link	Online conference.
June 2021	**Categories and Companions Symposium**
Link	Online conference. *MATRIX and AMSI.*
Apr 2021 - Currently	**ItaCa Fest 2021**
Link	Online seminar. *ItaCa.*
Mar 2021	**Workshop on Polynomial Functors**
Link	Online workshop. *Topos Institute.*
Mar - July 2021	**Category Theory Lunch**
	Online seminar. *Logic Group of the School of Mathematics, University of Leeds.*
Oct 2020 - Currently	**Postgraduate Logic Seminar**
	Seminar. *Logic Group of the School of Mathematics, University of Leeds.*
Oct 2020 - Currently	**Leeds-Ghent Virtual Logic Seminar**
Link	Online seminar. *Logic Group of the School of Mathematics, University of Leeds.*
Oct 2020 - Currently	**Models and Sets Seminar**
Link	Online seminar. *Logic Group of the School of Mathematics, University of Leeds.*
June - Dec 2020	**ItaCa Fest 2020**
Link	Online seminar. *ItaCa.*

Oct 2020 - Currently	**Yorkshire and Midlands Category Theory Seminar**
	Seminar. *London Mathematical Society.*
June 2019	**Higher Topos Theory and Univalent Foundations**
Link	Summer school & conference. *University of Leeds.*
Feb - May 2019	**Student Seminar Ultracategories**
Link	Seminar. *Utrecht University.*
June 2018	**Toposes in Como**
Link	Summer school & conference. *University of Insubria.*

Awards, grants and scholarships

2023	**Grant**
	Full funding (link here) for a EuroProofNet CA20111 STSM (link here) research visit to Amsterdam (hosted by Benno van den Berg).
2020	**Scholarship**
	Offer of a full funding for a PhD in the School of Mathematics at the University of Leeds (UK).
2020	**Scholarship**
	Offer of a full funding for a PhD in Mathematics at the University of Western Ontario (Canada).
2020	**Scholarship**
	Offer of a full funding for a PhD in the School of Computer Science at the University of Birmigham (UK).
2019	**Scholarship**
	Funding for 4 months (from September 2019 to December 2019) of international mobility for thesis research.
2019	**Merit award**
	A merit-based money prize (University of Trento) for my BSc.
2018	**Scholarship**
	Funding for 10 months (from September 2018 to June 2019) of international mobility in the academic year 2018/19 in partner Universities in the framework of the Erasmus+ Programme Countries.

Language skills

Italian	**Native speaker**
Venetian of Treviso	**Very good user**, non-native speaker
	Variety of the area of Feltre, Valdobbiadene and the Quartier del Piave of the venetian dialect continuum.
English	**Good user**
	IELTS academic band score. 7.0 (January 2019). This corresponds to a Level C1 on the CEFR.
French	**Pre-intermediate user**

Other activities

Stack Exchange	**Active member** of Mathematics Stack Exchange Community
	This is a well-known website for university-level mathematics Q&As. Link to my account.
Teaching	**Secondary School Teaching**
	About 150 hours (some of which in the framework of a project organised by my high-school) of private lessons in mathematics to high-school students.