

Curriculum vitæ

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RESEARCH INTERESTS

Category theory and everything about it.

- Stable ∞ -categories,
- Homotopical algebra,
- Groth(endieck) derivators,
- 2-categories and formal category theory,
- locally presentable and accessible categories,
- type theory and functional programming

APPOINTMENTS

2012 | TODAY

- 1 | **Postdoctoral fellow** Jul 2019 |
CMUC | Coimbra PT
- 2 | **Postdoctoral fellow** Sep 2018 |
Max Planck Institute for Mathematics | Bonn D
- 3 | **Postdoctoral fellow** Mar 2017 | Apr 2018
Masaryk University | Brno CZ
- 4 | **Postdoctoral fellow and Assistant Professor** Sep 2016 | Nov 2016
University of Western Ontario | London CA

EDUCATION

2008 | 2012

- 1 | **Ph.D. in Mathematics** Oct 2012 | Jun 2016
SISSA | Trieste
thesis: t -structures on stable ∞ -categories
- 2 | **M.Sc. in Mathematics** Oct 2010 | Jul 2012
Università degli studi di Padova
thesis: Orlov reconstruction theorem
- 3 | **B.Sc. in Mathematics** Jan 2008 | Jun 2010
Università degli studi di Padova
thesis: Monads and Beck's theorem

PUBLICATIONS

- 1 | **Categorical notions of fibration** w/E. Riehl |
1806.06129 | *Expos. Math.* (2019) | doi:10.1016/j.exmath.2019.02.004
- 2 | **Hearts and towers in stable infinity-categories** w/D. Fiorenza, G. Marchetti |
1501.04658 | *Journal of Homotopy and Related Structures* 2019 | doi:10.1007/s40062-019-00237-0
- 3 | **A standard theorem on adjunctions in two variables**
1902.06074 | *Preprints of the MPIM*, Max-Planck-Institut für Mathematik Preprint Series 2018 (67)
- 4 | **A Fubini rule for ∞ -coends**
1902.06086 | *Preprints of the MPIM*, Max-Planck-Institut für Mathematik Preprint Series 2018 (68)
- 5 | **Homotopical Algebra is not concrete** w/I. Di Liberti |
1704.00303 | *Journal of Homotopy and Related Structures* (2017): 1-15 | doi:10.1007/s40062-018-0197-3
- 6 | **Sober Ontic Structural Realism and Yoneda lemma**
abstract at the *Triennial conference of the SILFS*, Bologna
- 7 | **Coend calculus**
based on 1501.02503v4 | book to appear for Cambridge University Press (2020?)
- 8 | **t-structures are normal torsion theories** w/D. Fiorenza |
1408.7003 | *Applied Categorical Structures* 24.2 (2016): 181-208 | doi:10.1007/s10485-015-9393-z

PREPRINTS

- 1 | **On the unicity of formal category theories** w/I. Di Liberti |
1901.01594v1 | Submitted to TAC, January 2019
- 2 | **Accessibility and presentability in 2-categories** w/I. Di Liberti |
1804.08710v4 | Submitted to JPAA, January 2019
- 3 | **Localization theory for derivators**
1802.08193v1 | Submitted to TAC, March 2018
- 4 | **Factorization systems on (stable) derivators** w/S. Virili |
1705.08565v3 | Submitted to JoA, June 2017
- 5 | **Recollements in stable ∞ -categories** w/D. Fiorenza |
1507.03913v2

TALKS

- 1 | **The formal category theory of derivators** Apr 2019
Invited speaker | Workshop on Derivators - Regensburg
- 2 | **On the unicity of the formal theory of categories** Dec 2018
Talk on 1901.01594 | ULB - Bruxelles
- 3 | **Accessibility and Presentability in 2-categories** Nov 2018
Talk on 1804.08710 | Università degli studi di Torino
- 4 | **Homotopical algebra is not concrete** Sep 2017
Contributed talk | *British Topology Meeting* | Leicester
- 5 | **The formal category theory of derivators** Sep 2017
Invited speaker | *Some trends in Algebra* | Prague
- 6 | **Sober Ontic Structural Realism** Jun 2017
Invited speaker | *SILFS* | Bologna

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| 7 Model categories Invited speaker <i>A categorical day in Turin</i> Torino | May 2017 |
| 8 <i>t</i>-derivators Invited speaker <i>Young researchers in homotopy theory</i> , Bonn | Feb 2017 |
| 9 Coend calculus Lectures on 1501.02503 Leeds | May 2016 |

TEACHING & ORGANIZATIONAL ACTIVITIES

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| 1 appointee for Adjoint school 2019 A webinar and online applied Category Theory reading course. The project name is <i>Traversal optics and profunctors</i> . In functional programming, optics are ways to zoom into a specific part of a given data type and mutate it. Optics come in many flavors such as lenses and prisms and there is a well-studied categorical viewpoint, known as profunctor optics. Of all the optic types, only the traversal has resisted a derivation from first principles into a profunctor description. This project aims to do just this. | Mar 2019 |
| 2 2-categories A short course on 2-dimensional category theory. | Padova - IT |
| 3 PSSL 103 - Brno I have been one of the organizers of 103rd Peripathetic Seminar on Sheaves and Logic. | MU Brno - CZ |
| 4 Formal category theory A series of lectures having the scope to breach in Riehl-Verity's theory of ∞ -cosmoi. | MU Brno - CZ |
| 5 Elements of Finite Mathematics Techniques of counting, probability, discrete and continuous random variables. | UWO London - CA |
| 6 Homotopical Algebra A bottom-up introduction to the language of Homotopical Algebra | MU Brno - CZ |
| 7 appointee for Kan Extension Seminar I A webinar and online Category Theory reading course. | Jan 2014 Jul 2014 |
| 8 supervisor and coadvisor B.Sc. in Mathematics <i>Adjoint Functors</i> amslaurea.unibo.it | student: Giovanni Ronchi |
| 9 supervisor and coadvisor B.Sc. in Physics <i>Bohr toposes</i> Università di Milano Bicocca | student: Davide Bosetti |

OTHER ACTIVITIES

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| 1 Sparse skills I like the art of crafting books and drawing maps; this is not unrelated to my love for Mathematics. I am a pretty decent TeXnic (I maintain this CV as a github repo here). I know bits of Haskell, Python, and Wolfram. I like artificial languages (mi ŝatus verki vortaron al matematiko, kun terminoj el teoria kategorioj); again, this is not unrelated to my love for Mathematics. |
| 2 Reviewer for zbMath, AMS Math. Rev. |

Federico Lorigia