

Curriculum vitæ

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RESEARCH INTERESTS

Category theory and everything about it.

CURRENT POSITION

- 1 | **Postdoctoral fellow**
Tallinna Tehnikaülikooli Küberneetika Instituut | Tallinn

Jan 2020 | now 🇪🇪

PAST POSITIONS

- 1 | **Postdoctoral fellow**
Centro de Matemática da Universidade de Coimbra | Coimbra
- 2 | **Postdoctoral fellow**
Max-Planck-Institut für Mathematik | Bonn
- 3 | **Postdoctoral fellow**
Masarykova univerzita | Brno
- 4 | **Postdoctoral fellow and Assistant Professor**
University of Western Ontario | London

Jul 2019 | Dec 2019 🇵🇹

Sep 2018 | Feb 2019 🇩🇪

Mar 2017 | Apr 2018 🇨🇪

Sep 2016 | Nov 2016 🇨🇦

EDUCATION

2008 | 2012

- 1 | **Ph.D. in Mathematics**
SISSA | Trieste
thesis: *t-structures on stable ∞ -categories* : 2005.14295
- 2 | **M.Sc. in Mathematics**
Università degli studi di Padova
thesis: *Orlov reconstruction theorem*
- 3 | **B.Sc. in Mathematics**
Università degli studi di Padova
thesis: *Monads and Beck's theorem*

Oct 2012 | Jun 2016 🇮🇹

Oct 2010 | Jul 2012 🇮🇹

Jan 2008 | Jun 2010 🇮🇹

PUBLICATIONS

- 1 | **A Categorical Semantics for Bounded Petri Nets**
2101.09100 | Applied Category Theory 2021

w/ F. Genovese, D. Palombi |

- 2 | **Coends of higher arity** w/T. de Oliveira Santos |
2011.13881 | Applied Categorical Structures | doi:10.1007/s10485-021-09653-x
- 3 | **A Categorical Semantics for Hierarchical Petri Nets** w/F. Genovese, J. Herold, D. Palombi |
2102.00096 | Proc. of GCM, 2021 Springer.
- 4 | **Nets with Mana: A Framework for Chemical Reaction Modelling** w/F. Genovese, D. Palombi |
2101.06234 | Graph Transformation, Proc. of ICGT, 2021 Springer. | doi:10.1007/978-3-030-78946-6_10
- 5 | **Functorial semantics for partial theories** w/I. Di Liberti, et al. |
2011.06644 | Proc. ACM Program. Lang. 5, POPL, 2021. | doi:10.1145/3434338
- 6 | **Triangulated factorization systems and t-structures** w/S. Virili |
1705.08565v3 | Journal of Algebra | doi:10.1016/j.jalgebra.2019.12.021
- 7 | **Categorical notions of fibration** w/E. Riehl |
1806.06129 | Expos. Math. (2019) | doi:10.1016/j.exmath.2019.02.004
- 8 | **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
- 9 | **A standard theorem on adjunctions in two variables**
1902.06074 | Preprints of the MPIM, 2018 (67)
- 10 | **A Fubini rule for ∞ -coends**
1902.06086 | Preprints of the MPIM, 2018 (68)
- 11 | **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
- 12 | **Sober Ontic Structural Realism and Yoneda lemma**
abstract at the Triennial conference of the SILFS, Bologna
- 13 | **Coend calculus**
1501.02503 | LMS Lecture Note Series 468. Cambridge University Press. 2021. ISBN 9781108778657.
- 14 | **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 | **Escrows are optics** w/F. Genovese, D. Palombi |
2105.10028
- 2 | **Differential 2-rigs** w/F. Genovese |
2103.00938
- 3 | **Rosen's no-go theorem for regular categories**
2012.11648
- 4 | **Functorial Erkennen** w/D. Dentamaro |
<http://philsci-archive.pitt.edu/18519/>
- 5 | **Categorical Ontology I** w/D. Dentamaro |
<http://philsci-archive.pitt.edu/17136/>
- 6 | **Profunctor optics, a categorical update** w/B. Clarke, et al. |
2001.07488
- 7 | **On the unicity of formal category theories** w/I. Di Liberti |
1901.01594v1

- | | | |
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| 8 | Accessibility and presentability in 2-categories
1804.08710v4 | w/I. Di Liberti |
| 9 | Localization theory for derivators
1802.08193v1 | |
| 10 | Recollements in stable ∞-categories
1507.03913v2 | w/D. Fiorenza |

TALKS

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|----|---|----------|
| 1 | Towards a formal category theory of derivators
video Invited speaker New Directions in Group Theory & Triangulated Categories | Nov 2021 |
| 2 | Differential 2-rigs
Invited speaker CT20→21 - Genova | Sep 2021 |
| 3 | Functorial semantics of partial theories
Invited Speaker Seminari di logica Torino-Udine | Apr 2021 |
| 4 | Coends of higher arity
Organiser and speaker ItaCa - Italian Category theorists conference | Dec 2020 |
| 5 | The art of \int
Invited speaker ItaCa - Italian Category theorists conference | Dec 2019 |
| 6 | Axiomatic cohesion of toposes
Invited speaker Università "La Sapienza" - Rome | Dec 2019 |
| 7 | On the unicity of the formal theory of categories
Lectures on 1901.01594 ULB - Bruxelles | Dec 2018 |
| 8 | Accessibility and Presentability in 2-categories
Talk on 1804.08710 Università degli studi di Torino | Nov 2018 |
| 9 | Homotopical algebra is not concrete
Contributed talk <i>British Topology Meeting</i> Leicester | Sep 2017 |
| 10 | The formal category theory of derivators
Invited speaker <i>Some trends in Algebra</i> Prague | Sep 2017 |
| 11 | Sober Ontic Structural Realism
Invited speaker <i>SILFS</i> Bologna | Jun 2017 |
| 12 | Model categories
Invited speaker <i>A categorical day in Turin</i> Torino | May 2017 |
| 13 | t-derivators
Invited speaker <i>Young researchers in homotopy theory</i> , Bonn | Feb 2017 |
| 14 | Coend calculus
Lectures on 1501.02503 Leeds | May 2016 |

TEACHING & ORGANIZATIONAL ACTIVITIES

- 1 | 🎓 **ITI9200 - Introduction to Category Theory** Jan 2021 | May 2021
 Introduction to Category Theory and its Applications (*Sissejuhatus kategooriateooriasse ja selle rakendustesse*). Part of the MSc in Software Engineering at TalTech. Here you find the [course webpage](#) on talcats.io.
- 2 | 🎓 **ITI9200 - Introduction to Category Theory** Jan 2020 | May 2020
 Introduction to Category Theory and its Applications (*Sissejuhatus kategooriateooriasse ja selle rakendustesse*). Part of the MSc in Software Engineering at TalTech.
- 3 | 🗳️ **Organiser of ItaCa Fest** June 2020 | now
 An online webinar aimed to gather the community of ItaCa.
- 4 | 🗳️ **appointee for Adjoint school 2019** Mar 2019 | Jun 2019
 A webinar and online applied Category Theory reading course. The project name is *Traversal optics and profunctors*. Led to the development of [arXiv:2001.07488](#).
- 5 | 🎓 **2-categories** Padova - IT
 A short course on 2-dimensional category theory. Tentative program: monoidal and enriched categories, the calculus of coends and Kan extensions, 2-categories, the bicategory of profunctors, the 2-category of derivators, 2-dimensional limits, the formal theory of monads, formal category theory.
- 6 | 🗳️ **PSSL 103 - Brno** MU Brno - CZ
 I have been one of the organizers of 103rd Peripathetic Seminar on Sheaves and Logic.
- 7 | 🎓 **Formal category theory** MU Brno - CZ
 A series of lectures having the scope to breach in Riehl-Verity's theory of ∞ -cosmoi.
- 8 | 🎓 **Elements of Finite Mathematics** UWO London - CA
 Techniques of counting, probability, discrete and continuous random variables.
- 9 | 🎓 **Homotopical Algebra** MU Brno - CZ
 A bottom-up introduction to the language of Homotopical Algebra
- 10 | 🗳️ **appointee for Kan Extension Seminar I** Jan 2014 | Jul 2014
 A webinar and online Category Theory reading course.
- 11 | 🎓 **supervisor and coadvisor B.Sc. in Mathematics** student: G. Ronchi
 Adjoint Functors | [amslaurea.unibo.it](#)
- 12 | 🎓 **supervisor and coadvisor M.Sc. in Mathematics** student: G. Sorgente
 Formal theory of promonads | (tentative)
- 13 | 🎓 **supervisor for M.Sc. internship at TalTech** student: T. Massacrier
 Differential Polynomial endofunctors | (tentative)
- 14 | 🎓 **supervisor and coadvisor M.Sc. in Mathematics** student: M. Roselli
 Categorical linguistics | (tentative)
- 15 | 🎓 **mentor for the SIGPLAN-M** mentee: A. Laretto
 The SIGPLAN Long-Term Mentoring Committee (SIGPLAN-M) organizes an international long-term mentoring program for programming languages researchers.

OTHER ACTIVITIES

- 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](#)). I know bits of Haskell, Python, and Wolfram. I like artificial languages (mi šatus verki vortaron al matematiko, kun terminoj el teoria kategorioj); again, this is not unrelated to my love for Mathematics.


- 2 | *Directeur des systèmes d'information* for 'Les Presses Insoumises'.
I have participated to the craft of the cover of the first edition of the *Grimoire of Commutative Algebra* by [Lorenzo Ramero](#)
- 3 |  **Consultant for PlantingSpace**
I conduct research oriented towards categorical probability theory
- 4 | **Reviewer for**
zbMath, AMS Math. Rev.

Foto Lorenzo