

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

Jul 2019 | Dec 2019 


- 2 | **Postdoctoral fellow**
Max-Planck-Institut für Mathematik | Bonn

Sep 2018 | Feb 2019 

- 3 | **Postdoctoral fellow**
Masarykova univerzita | Brno

Mar 2017 | Apr 2018 

- 4 | **Postdoctoral fellow and Assistant Professor**
University of Western Ontario | London

Sep 2016 | Nov 2016 


EDUCATION

2008 | 2012

- 1 | **Ph.D. in Mathematics**
SISSA | Trieste
thesis: *t-structures on stable ∞ -categories* : [2005.14295](#)

Oct 2012 | Jun 2016 

- 2 | **M.Sc. in Mathematics**
Università degli studi di Padova
thesis: *Orlov reconstruction theorem*

Oct 2010 | Jul 2012 

- 3 | **B.Sc. in Mathematics**
Università degli studi di Padova
thesis: *Monads and Beck's theorem*

Jan 2008 | Jun 2010 

PUBLICATIONS

- 1 | **Escrows are optics**
[2105.10028](#) | to appear on JFT

w/ F. Genovese, D. Palombi |

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- 2 | **Differential 2-rigs** w/T. Trimble |
2103.00938 | Accepted for ACT2022
 - 3 | **Fibrational Linguistics II: language acquisition** w/F. Genovese, C. Puca |
2201.01136 | Accepted for ACT2022
 - 4 | **Fibrational Linguistics I: first concepts** w/F. Genovese, C. Puca |
2201.01136 | Accepted for ACT2022
 - 5 | **Accessibility and presentability in 2-categories** w/I. Di Liberti |
1804.08710v4 | Journal of Pure and Applied Algebra | doi:10.1016/j.jpaa.2022.107155
 - 6 | **A Categorical Semantics for Bounded Petri Nets** w/F. Genovese, D. Palombi |
2101.09100 | Applied Category Theory 2021
 - 7 | **Coends of higher arity** w/T. de Oliveira Santos |
2011.13881 | Applied Categorical Structures | doi:10.1007/s10485-021-09653-x
 - 8 | **A Categorical Semantics for Hierarchical Petri Nets** w/F. Genovese, J. Herold, D. Palombi |
2102.00096 | Proc. of GCM, 2021 Springer | doi:10.4204/EPTCS.350.4
 - 9 | **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
 - 10 | **Functorial semantics for partial theories** w/I. Di Liberti, et al. |
2011.06644 | Proc. ACM Program. Lang. 5, POPL, 2021. | doi:10.1145/3434338
 - 11 | **Triangulated factorization systems and t-structures** w/S. Virili |
1705.08565v3 | Journal of Algebra | doi:10.1016/j.jalgebra.2019.12.021
 - 12 | **Categorical notions of fibration** w/E. Riehl |
1806.06129 | Expos. Math. (2019) | doi:10.1016/j.exmath.2019.02.004
 - 13 | **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
 - 14 | **A standard theorem on adjunctions in two variables**
1902.06074 | Preprints of the MPIM, 2018 (67)
 - 15 | **A Fubini rule for ∞ -coends**
1902.06086 | Preprints of the MPIM, 2018 (68)
 - 16 | **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
 - 17 | **Sober Ontic Structural Realism and Yoneda lemma**
abstract at the *Triennial conference of the SILFS*, Bologna
 - 18 | **Coend calculus**
1501.02503 | LMS Lecture Note Series 468. Cambridge University Press. 2021. ISBN 9781108778657.
 - 19 | **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 | **Rosen's no-go theorem for regular categories**
2012.11648
- 2 | **Functorial Erkennen** w/D. Dentamaro |
<http://philsci-archive.pitt.edu/18519/>

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| 3 Categorical Ontology I
http://philsci-archive.pitt.edu/17136/ | w/D. Dentamaro |
| 4 Profunctor optics, a categorical update
2001.07488 | w/B. Clarke, et al. |
| 5 On the unicity of formal category theories
1901.01594v1 | w/I. Di Liberti |
| 6 Localization theory for derivators
1802.08193v1 | |
| 7 Recollements in stable ∞-categories
1507.03913v2 | w/D. Fiorenza |


TALKS

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|---|----------|
| 1 Differential 2-rigs
video Applied Category Theory 2022, Glasgow | Jul 2022 |
| 2 Fibrational linguistics
video Applied Category Theory 2022, Glasgow | Jul 2022 |
| 3 Towards a formal category theory of derivators
video Invited speaker New Directions in Group Theory & Triangulated Categories | Nov 2021 |
| 4 Differential 2-rigs
Invited speaker CT20 \rightarrow 21 - Genova | Sep 2021 |
| 5 Functorial semantics of partial theories
Invited Speaker Seminari di logica Torino-Udine | Apr 2021 |
| 6 Coends of higher arity
Organiser and speaker ItaCa - Italian Category theorists conference | Dec 2020 |
| 7 The art of \int
Invited speaker ItaCa - Italian Category theorists conference | Dec 2019 |
| 8 On the unicity of the formal theory of categories
Lectures on 1901.01594 ULB - Bruxelles | Dec 2018 |
| 9 Accessibility and Presentability in 2-categories
Talk on 1804.08710 Università degli studi di Torino | Nov 2018 |
| 10 Homotopical algebra is not concrete
Contributed talk <i>British Topology Meeting</i> Leicester | Sep 2017 |
| 11 The formal category theory of derivators
Invited speaker <i>Some trends in Algebra</i> Prague | Sep 2017 |
| 12 Model categories
Invited speaker <i>A categorical day in Turin</i> Torino | May 2017 |






TEACHING & ORGANIZATIONAL ACTIVITIES, AWARDS

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| 1 🏆 Award for <i>Researcher of the Year</i> 2021 | 2021 |
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- 2 |  **ITI9200 - Introduction to Category Theory** Jan 2022 | May 2022
A course on basic category theory; at the [course webpage](#) you find a diary of the lectures and study material.
 - 3 |  **ITI9200 - Introduction to Category Theory** Jan 2021 | May 2021
 - 4 |  **ITI9200 - Introduction to Category Theory** Jan 2020 | May 2020
 - 5 |  **Organiser of ItaCa Fest** 2020|2021|2022
An online webinar aimed to gather the community of [ItaCa](#).
 - 6 |  **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](#).
 - 7 |  **PSSL 103 - Brno** MU Brno - CZ
I have been one of the organizers of 103rd Peripathetic Seminar on Sheaves and Logic.
 - 8 |  **Elements of Finite Mathematics** UWO London - CA
Techniques of counting, probability, discrete and continuous random variables.
 - 9 |  **appointee for Kan Extension Seminar I** Jan 2014 | Jul 2014
A webinar and online Category Theory reading course.

SUPERVISION OF STUDENTS

- 1 |  **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.
- 2 |  **supervisor and coadvisor M.Sc. in Mathematics** *student: M. Roselli*
Categorical linguistics | (tentative)
- 3 |  **supervisor for M.Sc. internship at TalTech** *student: T. Massacrier*
From combinatorial species to general differential 2-rigs
- 4 |  **supervisor and coadvisor M.Sc. in Mathematics** *student: G. Sorgente*
Formal theory of promonads | (tentative)
- 5 |  **supervisor and coadvisor B.Sc. in Mathematics** *student: G. Ronchi*
Adjoint Functors | [amslaurea.unibo.it](#)

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 through a [github repo](#) whence you can steal the code, if you ask politely). I know bits of Haskell, Python, and Wolfram, but in the end I don't care *that* much about programming if I can't do category theory in it. I became a relatively frequent contributor of [agda-categories](#). Agda is...well, pain. I like languages, natural and artificial (mi šatus verki vortaron al matematiko, kun terminoj el teoria kategorioj; mina ŝpin eesti keelt, aeglaselt; jeg liker Norsk, men jeg liker Maria Franz mer); again, this is not unrelated to my love for Mathematics.

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2 | *Directeur des systèmes d'information* @ '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 | *Freelance consultant* @ *PlantingSpace*

I conduct research oriented towards categorical probability theory and implementations thereof.

4 | *Reviewer for*

zbMath, AMS Math. Rev.

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