

# 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  $\infty$ -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 | **Differential 2-rigs**  
2103.00938 | Accepted for ACT2022

w/T. Trimble |

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









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

## TALKS






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

## TEACHING & ORGANIZATIONAL ACTIVITIES, AWARDS

- 1 |  **Award for *Researcher of the Year* 2021** 2021

- 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** June 2020 | now  
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 as a [github repo](#)). 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 | **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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