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# Curriculum vitæ

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## RESEARCH INTERESTS

Category theory and everything about it.

## CURRENT POSITION

2020 | NOW

- 1 | **Postdoctoral fellow**  
Tallinna Tehnikakõlikooli Kübermeetika Instituut | Tallinn

Jan 2020 | now 🇪🇪

## PAST POSITIONS

2016 | 2020

- 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 | 2016

- 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 🇮🇹

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## PUBLICATIONS

- 1 | **Bicategories of automata, automata in bicategories** | w/G. Boccali, A. Laretto, S. Luneia |  
2303.03865 | accepted for ACT2023
- 2 | **Completeness for categories of generalized automata** | w/G. Boccali, A. Laretto, S. Luneia |  
2303.03867 | accepted for CALCO2023
- 3 | **Profunctor optics, a categorical update** | w/B. Clarke, et al. |  
2001.07488 | to appear in *Compositionality*
- 4 | **Escrows are optics** | w/F. Genovese, D. Palombi |  
2105.10028 | to appear on *JFT*
- 5 | **Differential 2-rigs** | w/T. Trimble |  
2103.00938 | *Applied Category Theory* 2022
- 6 | **Fibrational linguistics II: language acquisition** | w/F. Genovese, C. Puca |  
2201.01136 | *Applied Category Theory* 2022
- 7 | **Fibrational linguistics I: first concepts** | w/F. Genovese, C. Puca |  
2201.01136 | *Applied Category Theory* 2022
- 8 | **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
- 9 | **A Categorical Semantics for Bounded Petri Nets** | w/F. Genovese, D. Palombi |  
2101.09100 | *Applied Category Theory* 2021
- 10 | **Coends of higher arity** | w/E. de Oliveira Santos |  
2011.13881 | *Applied Categorical Structures* | doi:10.1007/s10485-021-09653-x
- 11 | **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
- 12 | **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
- 13 | **Functorial semantics for partial theories** | w/I. Di Liberti, et al. |  
2011.06644 | *Proc. ACM Program. Lang.* 5, POPL, 2021. | doi:10.1145/3434338
- 14 | **Triangulated factorization systems and t-structures** | w/S. Virili |  
1705.08565v3 | *Journal of Algebra* | doi:10.1016/j.jalgebra.2019.12.021
- 15 | **Categorical notions of fibration** | w/E. Riehl |  
1806.06129 | *Expos. Math.* (2019) | doi:10.1016/j.exmath.2019.02.004
- 16 | **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
- 17 | **A standard theorem on adjunctions in two variables** |  
1902.06074 | *Preprints of the MPIM*, 2018 (67)
- 18 | **A Fubini rule for  $\infty$ -coends** |  
1902.06086 | *Preprints of the MPIM*, 2018 (68)
- 19 | **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
- 20 | **Sober Ontic Structural Realism and Yoneda lemma** |  
abstract at the *Triennial conference of the SILFS*, Bologna
- 21 | **Coend calculus** |  
1501.02503 | *LMS Lecture Note Series* 468. Cambridge University Press. 2021. ISBN 9781108778657.

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- 22 | **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/>
- 3 | **Categorical Ontology I** w/D. Dentamaro |  
<http://philsci-archive.pitt.edu/17136/>
- 4 | **On the unicity of formal category theories** w/I. Di Liberti |  
1901.01594v1
- 5 | **Localization theory for derivators**  
1802.08193v1
- 6 | **Recollements in stable  $\infty$ -categories** w/D. Fiorenza |  
1507.03913v2

## TALKS

- 1 | **A few remarks on the fibration of algebras** Dec 2022  
video | ItaCa 2022, Pisa
- 2 | **Differential 2-rigs** Jul 2022  
video | Applied Category Theory 2022, Glasgow
- 3 | **Fibrational linguistics** Jul 2022  
video | Applied Category Theory 2022, Glasgow
- 4 | **Towards a formal category theory of derivators** Nov 2021  
video | Invited speaker | New Directions in Group Theory & Triangulated Categories
- 5 | **Differential 2-rigs** Sep 2021  
Speaker | CT20→21 - Genova
- 6 | **Functorial semantics of partial theories** Apr 2021  
Speaker | Seminari di logica Torino-Udine
- 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  
Two-lecture series 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  
Speaker | *Some trends in Algebra* | Prague

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## TEACHING & ORGANIZATIONAL ACTIVITIES, AWARDS

- 1 | 🏆 Award for *Researcher of the Year 2021* 2021
- 2 | 🎓 ITI9200 - Introduction to Category Theory Jan | May 2020–23  
A course on basic category theory; at the [course webpage](#) you find a diary of the lectures and study material.
- 3 | 🏆 Organiser of ItaCa Fest 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 | 🏆 PSSL 103 - Brno April 2018  
I have been one of the organizers of 103rd Peripathetic Seminar on Sheaves and Logic.
- 6 | 🎓 Elements of Finite Mathematics Autumn 2016  
Techniques of counting, probability, discrete and continuous random variables.
- 7 | 🏆 appointee for Kan Extension Seminar I Jan 2014 | Jul 2014  
A webinar and online Category Theory reading course.

## SUPERVISION OF STUDENTS

- 1 | 🎓 supervisor and coadvisor for PhD in Computer Science *student: A. Laretto*  
After a long and fruitful collaboration, A. Laretto applied for a Ph.D. in Tallinn University of Technology. I couldn't be happier to have him as a student.
- 2 | 🎓 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.
- 3 | 🎓 supervisor and coadvisor M.Sc. in Mathematics *student: M. Roselli*  
*Categorical linguistics* | (tentative)
- 4 | 🎓 supervisor for M.Sc. internship at TalTech *student: T. Massacrier*  
*From combinatorial species to general differential 2-rigs*
- 5 | 🎓 supervisor and coadvisor M.Sc. in Mathematics *student: G. Sorgente*  
*Formal theory of promonads* | (tentative)
- 6 | 🎓 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 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 õpin 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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