

# Curriculum vitæ

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## RESEARCH INTERESTS

Category theory and everything about it.

## CURRENT POSITION

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

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 | **Coends of higher arity**  
2011.13881

w/T. de Oliveira Santos |

- 2 | **A Categorical Semantics for Hierarchical Petri Nets** w/F. Genovese, J. Herold, D. Palombi |  
2102.00096 | Proc. of GCM, 2021 Springer.
- 3 | **Nets with Mana: A Framework for Chemical Reaction Modelling** w/F. Genovese, D. Palombi |  
2101.06234 | *Graph Transformation*, Proc. of ICGT, 2021 Springer.
- 4 | **Functorial semantics for partial theories** w/I. Di Liberti, et al. |  
2011.06644 | Proc. ACM Program. Lang. 5, POPL, 2021. | doi:10.1145/3434338
- 5 | **Triangulated factorization systems and t-structures** w/S. Virili |  
1705.08565v3 | *Journal of Algebra* | doi:10.1016/j.jalgebra.2019.12.021
- 6 | **Categorical notions of fibration** w/E. Riehl |  
1806.06129 | *Expos. Math.* (2019) | doi:10.1016/j.exmath.2019.02.004
- 7 | **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
- 8 | **A standard theorem on adjunctions in two variables**  
1902.06074 | *Preprints of the MPIM*, 2018 (67)
- 9 | **A Fubini rule for  $\infty$ -coends**  
1902.06086 | *Preprints of the MPIM*, 2018 (68)
- 10 | **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
- 11 | **Sober Ontic Structural Realism and Yoneda lemma**  
abstract at the *Triennial conference of the SILFS*, Bologna
- 12 | **Coend calculus**  
1501.02503 | LMS Lecture Note Series 468. Cambridge University Press. 2021. ISBN 9781108778657.
- 13 | **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 | **A Categorical Semantics for Bounded Petri Nets** w/F. Genovese, D. Palombi |  
2101.09100
- 4 | **Rosen's no-go theorem for regular categories**  
2012.11648
- 5 | **Functorial Erkennen** w/D. Dentamaro |  
<http://philsci-archive.pitt.edu/18519/>
- 6 | **Categorical Ontology I** w/D. Dentamaro |  
<http://philsci-archive.pitt.edu/17136/>
- 7 | **Profunctor optics, a categorical update** w/B. Clarke, et al. |  
2001.07488
- 8 | **On the unicity of formal category theories** w/I. Di Liberti |  
1901.01594v1

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

## TALKS

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

## 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  $\infty$ -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: Giovanni 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 [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.

*Foto Loregia*