

Curriculum vitæ

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fosco.loregian@gmail.com
Akadeemia tee 21/B, 12618
Tallinn, Estonia 🇪🇪

Fosco Loregian
github.com/tetrapharmakon
fosco.loregian



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 ∞ -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 |
2111.13881 | Applied Categorical Structures
- 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.
- 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 \$\infty\$ -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

- 8 | **Accessibility and presentability in 2-categories** w/I. Di Liberti |
1804.08710v4
- 9 | **Localization theory for derivators**
1802.08193v1
- 10 | **Recollements in stable ∞ -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 ∞ -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: M. Tanguy
Differential Polynomial endofunctors | (tentative)
- 14 | 🎓 **supervisor and coadvisor M.Sc. in Mathematics** student: M. Roselli
Categorical linguistics | (tentative)

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 for 'Les Presses Insoumises'.**
- 3 | **Reviewer for**
zbMath, AMS Math. Rev.

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