# 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**          Jan 2020 | now 🇪🇪
Tallinna Tehnikaülikooli Küberneetika Instituut | Tallinn

## Past positions

1 | **Postdoctoral fellow**          Jul 2019 | Dec 2019 🏴
Centro de Matemática da Universidade de Coimbra | Coimbra

2 | **Postdoctoral fellow**          Sep 2018 | Feb 2019 🇩🇪
Max-Planck-Institut für Mathematik | Bonn

3 | **Postdoctoral fellow**          Mar 2017 | Apr 2018 🇨🇿
Masarykova univerzita | Brno

4 | **Postdoctoral fellow and Assistant Professor**          Sep 2016 | Nov 2016 🇨🇦
University of Western Ontario | London

## Education                                          2008 | 2012

1 | **Ph.D. in Mathematics**          Oct 2012 | Jun 2016 🇮🇹
SISSA | Trieste
**thesis**: *t-structures on stable ∞-categories* : *2005.14295*

2 | **M.Sc. in Mathematics**          Oct 2010 | Jul 2012 🇮🇹
Università degli studi di Padova
**thesis**: *Orlov reconstruction theorem*

3 | **B.Sc. in Mathematics**          Jan 2008 | Jun 2010 🇮🇹
Università degli studi di Padova
**thesis**: *Monads and Beck's theorem*

## Publications

1 | **Escrows are optics**          w/F. Genovese, D. Palombi |
*2105.10028* | to appear on JFT

2 | **Differential 2-rigs** w/T. Trimble |
2103.00938 | Accepted for ACT2022

3 | **Fibrational lnguistics II: language acquisition** w/F. Genovese, C. Puca |
2201.01136 | Accepted for ACT2022

4 | **Fibrational lnguistics 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/

3 | Categorical Ontology I      w/D. Dentamaro |
http://philsci-archive.pitt.edu/17136/

4 | Profunctor optics, a categorical update      w/B. Clarke, et al. |
2001.07488

5 | On the unicity of formal category theories      w/I. Di Liberti |
1901.01594v1

6 | Localization theory for derivators
1802.08193v1

7 | Recollements in stable ∞-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
Invited speaker | CT20→21 - Genova

6 | Functorial semantics of partial theories      Apr 2021
Invited Speaker | Seminari di logica Torino-Udine

7 | Coends of higher arity      Dec 2020
Organiser and speaker | ItaCa - Italian Category theorists conference

8 | The art of $\int$      Dec 2019
Invited speaker | ItaCa - Italian Category theorists conference

9 | On the unicity of the formal theory of categories      Dec 2018
Lectures on 1901.01594 | ULB - Bruxelles

10 | Accessibility and Presentability in 2-categories      Nov 2018
Talk on 1804.08710 | Università degli studi di Torino

11 | Homotopical algebra is not concrete      Sep 2017
Contributed talk | *British Topology Meeting* | Leicester

12 | The formal category theory of derivators      Sep 2017
Invited speaker | *Some trends in Algebra* | Prague

13 | Model categories      May 2017
Invited speaker | *A categorical day in Turin* | Torino

## 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                                                  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 ŝatus 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.

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.