Edoardo Lanari

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Summary

Mathematician with over 4 years of experience in mathematical research. I have a strong scientific record, and I want to apply my skillset to a data-driven job in Quantitative Research, Machine Learning or Data Science.

Skills

- Higher Category Theory/Homotopy Theory
- Machine Learning
- Python
- SQL
- (Topological) Data Analysis
- Algorithms and Data Structures

Job Experience

2020-present

Lecturer in Programming, Prague College.

 I am teaching a third year undergraduate course in Object-Oriented Programming. I personally designed and structured the course, with main focus on the core concepts of OOP, implemented in Python.

2019-present

Postdoctoral Researcher in Mathematics, Institute of Mathematics CAS, Prague.

 My research job revolves around studying and implementing unifying mathematical methods that deal with naturally occurring complex phenomena. I adopt a structural approach that highlights interconnections and solves multiple problems at once. In a nutshell, instead of focusing on a single problem, I find the features that related problems have in common in order to come up with a more general and efficient solution.

2018-2019

Lecturer in Mathematics at Charles University, Prague.

 I have structured an entire Master course from scratch, delivered classes both in person and on online platforms, and evaluated the students performance with exams and tests I designed. This improved my ability to communicate my knowledge to other people and develop tools to test their understanding of it.

2015-2018

Teaching Assistant, Macquarie University, Sydney.

 I was the TA for fundamental courses (e.g. (multivariable) calculus, abstract and linear algebra, discrete mathematics and probability) aimed at mathematicians and applied sciences students. Dealing with large classes taught me how to lead a heterogeneous group of people towards their personal success and how to help them solving the issues they faced

along this path.

Education

2020-attending *MITx MicroMaster Program in Statistics and Data Science.*
      The focus of this program offered by the MIT is on Machine Learning methods in Python, with strong emphasis on probability theory and statistical methods.

2015-2018 *PhD in Mathematics*, Macquarie University Faculty of Mathematics and Statistics, Sydney.
      During these 3 years of my PhD research program I managed to produce outstanding results, which were consequently published on prestigious journals. I significantly improved my ability to reason autonomously and to successfully tackle open problems in an area of Mathematics that was new to me. I acquired skills that easily transfer to other fields, such as critical thinking, academic writing and public speaking at conferences, and, of course, an excellent mathematical expertise.

2013-2015 *Double Master Degree in Mathematics*, magna cum laude, University of Padova (Italy) and University of Leiden (The Netherlands).
      Focus on advanced mathematical topics (algebraic topology, category theory, functional analysis) in an international environment. I produced a final research project (written thesis and final dissertation), and graduated summa cum laude in a double degree joint program (the Algant international program).

2010-2013 *BSc in Mathematics*, magna cum laude, University of Trento, Italy.
      Graduated summa cum laude Math-major 3 years Bachelor Degree, with courses including Programming, Advanced Calculus, Probability and Measure Theory, Abstract Algebra and Topology.

Publications list and Preprints

2020 "*Fire Sales, the LOLR and Bank Runs with Continuous Asset Liquidity*" (joint work with Ulrich Bindseil), submitted for publication, available at https://arxiv.org/abs/2010.11030.

2020 "*Rectification of interleavings and a persistent Whitehead theorem*", joint work with Luis Scoccola, submitted for publication, available at https://arxiv.org/abs/2010.05378.

2020 "*Gray tensor products and lax functors of $(\infty, 2)$-categories*" (joint work with Andrea Gagna and Yonatan Harpaz), submitted for publication, available at https://arxiv.org/abs/2006.14495.

2019 "*Cartesian factorization systems and pointed cartesian fibrations of ∞-categories*", to appear on Higher Structures, available at https://arxiv.org/abs/1911.11533.

2019 "*On the equivalence of all models for $(\infty, 2)$-categories*" (joint work with Andrea Gagna and Yonatan Harpaz), submitted for publication, available at https://arxiv.org/abs/1911.01905.

2019 "*On the homotopy hypothesis in dimension 3*" (joint work with Simon Henry), available at https://arxiv.org/abs/1905.05625.

2018 "*On truncated quasi-categories*" (joint work with Alexander Campbell), Cahiers de Topologie et Géométrie Différentielle Catégoriques Volume LXI (2020) Issue 1.

2018 "*A semi-model structure for Grothendieck weak 3-groupoids*", submitted for publication, available at https://arxiv.org/abs/1809.07923.

2018 "*Towards a globular path object for weak ∞-groupoids*", Journal of Pure and Applied Algebra, Volume 224, Issue 2, February 2020, pages 630-702.

2018 "*Homotopy theory of Grothendieck weak ∞-groupoids and ∞-categories*", PhD thesis, available at https://sites.google.com/view/edoardo-lanari/research?authuser=0.