Edoardo Lanari

email: link
website: link
LinkedIn Profile: link
Github: link

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. 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 success and how to help them solving issues.

Education

2020-attending *Ai for Trading*, Udacity Nanodegree.
The focus of this nanodegree offered by Udacity is on Quantitative methods for trading, including Statistical Analysis and Deep Learning.

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.

Projects

- *Trading strategy with momentum.* Implementation in Python of a trading strategy consisting of taking long/short positions based on momentum.

Certificates

2020 *Neural Networks and Deep Learning*, issued by Coursera.
Main topics: fundamentals of Neural Networks architectures, forward/back propagation, binary classifier implementation.

2020 *Quantitative Finance and Algorithmic Trading in Python*, issued by Udemy.
Main topics: Modern Portfolio Theory (Markowitz model), CAPM, Black-Scholes model for options pricing, the Greeks, VaR, Machine Learning methods.

2020 *Probability-The Science of Uncertainty and Data*, issued by edX.
Main topics: discrete/continuous random variables, Bayesian inference, Stochastic Processes (Bernoulli, Poisson), Markov Chains and Random Walks.

Publications and Preprints

2020 " *Fibrations and lax limits of* $(\infty, 2)$*-categories*" (joint work with Andrea Gagna and Yonatan Harpaz), submitted for publication, available at link.

2020 "*Fire Sales, the LOLR and Bank Runs with Continuous Asset Liquidity*" (joint work with Ulrich Bindseil), submitted for publication, available at link.

2020 "*Rectification of interleavings and a persistent Whitehead theorem*" (joint work with Luis Scoccola), submitted for publication, available at link.

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

2019 "*Cartesian factorization systems and pointed cartesian fibrations of* ∞*-categories*", to appear on Higher Structures, available at link.

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

2019 "*On the homotopy hypothesis in dimension 3*" (joint work with Simon Henry), available at link.

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

2018 "*A semi-model structure for Grothendieck weak 3-groupoids*", submitted for publication, available at link.

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

2018 "*Homotopy theory of Grothendieck weak* ∞*-groupoids and* ∞*-categories*", PhD thesis, available at link.

Last updated: January 5, 2021 • Typeset in XeLaTeX