

Edoardo Lanari

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Current position

Postdoc at the Institute of Mathematics of the Czech Academy of Sciences (from January 2019).

My mathematical interests are higher category theory and homotopy theory, in particular homotopical methods and formal category theory of (∞, n) -categories, with an eye towards applications to algebraic topology.

I have been working on the homotopy theory of globular models for weak (∞, n) -categories and weak n -groupoids for $0 \leq n \leq \infty$, and on comparisons with other available simplicial models. In addition to that, I have also studied weak $(n, 1)$ -categories modeled by *n-truncated* quasi-categories. A detailed research statement can be found on my website.

Areas of research specialisation

Higher Category Theory • Homotopy Theory

Appointments held

2015-2018 *Undergraduate students tutor*, Macquarie University, Sydney, Australia

Education

2015-2018 PHD under the supervision of Dr. Richard Garner and co-supervision of Prof. Dominic Verity, Macquarie University, Sydney. Thesis entitled “*Homotopy theory of Grothendieck ∞ -groupoids and ∞ -categories*”

2013-2015 DOUBLE MASTER DEGREE Mathematics, magna cum laude, University of Padova (Italy) and University of Leiden (The Netherlands). Thesis entitled “*Compatibility of Homotopy Colimits and Homotopy Pullbacks of Simplicial Presheaves*”

2010-2013 BSC Mathematics, magna cum laude, University of Trento, Italy. Thesis entitled “*Freyd-Mitchell Embedding Theorem for Small Abelian Categories*”

Research related activities

2018 Visited Professor Nicola Gambino at Leeds University for a week

2018 Attended the workshop entitled “Higher structures in homotopy theory” at Isaac Newton Institute for Mathematical Sciences, Cambridge, UK

2017 Visited Dr. Dimitri Ara (maître de conférences at Aix-Marseille Université) for 2 months

Publications list

- 2018 “*On truncated quasi-categories*”, submitted for publication (available at <https://arxiv.org/abs/1810.11188>).
- 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*”, submitted for publication (available at <https://arxiv.org/abs/1805.00156>).
- 2018 “*Homotopy theory of Grothendieck weak ∞ -groupoids and ∞ -categories*”, PhD thesis, available at <https://sites.google.com/view/edoardo-lanari/research?authuser=0>.

Talks

- 2018 CATEGORY THEORY SEMINAR, Leeds University, Leeds, UK, talk entitled “*On the homotopy theory of ∞ -groupoids*”
- 2018 AUSTRALIAN CATEGORY SEMINAR, Macquarie University, Sydney, Australia, talk entitled “*Cat as a localization of $(\infty, 1)$ -categories*”
- 2017 AUSTRALIAN MATHEMATICAL SOCIETY ANNUAL MEETING, Macquarie University, Sydney, Australia, talk entitled “ *∞ -groupoids and the Homotopy Hypothesis*”
- 2017 AUSTRALIAN CATEGORY SEMINAR, Macquarie University, Sydney, Australia, talk entitled “*On the homotopy theory of ∞ -groupoids*”
- 2017 SÉMINAIRE LOGIQUE ET INTERACTIONS, Aix-Marseille Université, Marseille, France, talk entitled “*Grothendieck ∞ -groupoids and the Homotopy Hypothesis*”
- 2016 AUSTRALIAN CATEGORY SEMINAR, Macquarie University, Sydney, Australia, talk entitled “ *n -quasi-categories and Θ_n -spaces*”
- 2016 AUSTRALIAN CATEGORY SEMINAR, Macquarie University, Sydney, Australia, talk entitled “*Homotopy theory of (complete) Segal spaces*”
- 2016 AUSTRALIAN CATEGORY SEMINAR, Macquarie University, Sydney, Australia, talk entitled “*Homotopy colimits and realization fibrations*”
- 2015 ALGEBRAIC TOPOLOGY STUDENT SEMINAR, Radboud University, Nijmegen, The Netherlands, talk entitled “*Introduction to (complete) Segal spaces*”
- 2015 ALGEBRAIC TOPOLOGY STUDENT SEMINAR, Radboud University, Nijmegen, The Netherlands, talk entitled “*Quasi-categories*”
- 2015 ALGEBRAIC TOPOLOGY STUDENT SEMINAR, Radboud University, Nijmegen, The Netherlands, talk entitled “*Universal Homotopy Theories*”
- 2014 ALGEBRAIC TOPOLOGY STUDENT SEMINAR, Radboud University, Nijmegen, The Netherlands, talk entitled “*Localization of Model Categories*”
- 2014 ALGEBRAIC TOPOLOGY STUDENT SEMINAR, Radboud University, Nijmegen, The Netherlands, talk entitled “*Simplicial Model Categories and Function Complexes*”

Scholarships and Grants

- 2015-2018 International Macquarie University Research Excellence Scholarship (iMQRES)
- 2018 Macquarie University Postgraduate Research Fund (PGRF)