Luca San Mauro, PhD

Curriculum Vitae

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Contacts

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Area of research

Logic, Computability, Philosophy of Mathematics

Employment

10/2021-09/2023	**Research fellow**, Department of Mathematics, Sapienza University of Rome
04/2018–11/2020	**Lise Meitner fellow**, Institute of Discrete Mathematics and Geometry, TU Wien
10/2018–09/2021	**Adjunct professor**, Department of Cognitive Sciences, University of Siena
03/2016–03/2018	**Postdoctoral fellow**, Institute of Discrete Mathematics and Geometry, TU Wien

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Qualifications

07/2020	**Italian Scientific Habilitation** to be **Associate Professor** of *Mathematical Logic* (01/A1)
01/2020	**Italian Scientific Habilitation** to be **Associate Professor** of *Logic and Philosophy of Science* (11/C2)

Education

2011–2016	**PhD (with distinction)** in Philosophy, Scuola Normale Superiore, Pisa Dissertation title: "Informal proofs and Computability" Supervisors: G. Lolli (SNS), A. Sorbi (University of Siena)
2008–2011	**Master's degree (with distinction)** in Philosophy, University of Siena Supervisors: A. Sorbi, D. Pianigiani
2005–2008	**Bachelor's degree (with distinction)** in Philosophy, University of Bologna Supervisor: G. Corsi

Peer-reviewed publications

Journal articles

19. **On the Turing complexity of learning finite families of algebraic structures** (with N. Bazhenov) online first in *Journal of Logic and Computation*, 2021
18. **A note on the category of equivalence relations** (with V. Delle Rose and A. Sorbi) forthcoming in *Algebra and Logic*, 2021
17. **On logicality and natural logic** (with S. Pistoia-Reda) *Natural Language Semantics*, 29, 501–506, 2021
16. **Degrees of bi-embeddable categoricity** (with N. Bazhenov, E. Fokina, and D. Rossegger) *Computability*, 10(1), 1–16, 2021
15. **What is to believe in a mathematical assertion?** (with G. Venturi) *Italian Journal of Philosophy of Language*, 15(1), 154–157, 2021
14. **Word problems and ceers** (with V. Delle Rose and A. Sorbi) *Mathematical Logic Quarterly*, 66(3), 341–354, 2020
13. **Learning families of algebraic structures from informant** (with N. Bazhenov and E. Fokina) *Information and Computation*, 275, 104590, 2020
12. **Speech acts in mathematics** (with M. Ruffino and G. Venturi) online first in *Synthese*, 2020 (DOI: 10.1007/s11229-020-02702-3)
11. **Classifying equivalence relations in the Ershov hierarchy** (with N. Bazhenov, M. Mustafa, A. Sorbi, and M. Yamaleev) *Archive for Mathematical Logic*, 59(7/8), 835-864, 2020
10. **Minimal equivalence relations in hyperarithmetical and analytical hierarchies** (with N. Bazhenov, M. Mustafa, and M. Yamaleev) *Lobachevskii Journal of Mathematics*, 41, 145–150, 2020
9. **At least one black sheep: Pragmatics and the language of mathematics** (with M. Ruffino and G. Venturi) *Journal of Pragmatics*, 160, 114–119, 2020
8. **Bi-embeddability spectra and bases of spectra** (with E. Fokina and D. Rossegger) *Mathematical Logic Quarterly*, 65(2), 228–236, 2019
7. **Measuring the complexity of reductions between equivalence relations** (with E. Fokina and D. Rossegger) *Computability*, 8(3/4), 265–280, 2019
6. **Degrees of bi-embeddable categoricity of equivalence structures** (with N. Bazhenov, E. Fokina, and D. Rossegger) *Archive for Mathematical Logic*, 58(5/6), 543–563, 2019
5. **Trial and error mathematics: Dialectical systems and completions of theories** (with J. Amidei, U. Andrews, D. Pianigiani, and A. Sorbi) *Journal of Logic and Computation*, 29(1), 157–184, 2019
4. **Computable bi-embeddable categoricity** (with N. Bazhenov, E. Fokina, and D. Rossegger) *Algebra and Logic*, 57(5), 392–396, 2018
3. **Trial and error mathematics II: Dialectical sets and quasidialectical sets, their degrees, and their distribution within the class of limit sets** (with J. Amidei, D. Pianigiani and A. Sorbi) *Review of Symbolic Logic*, 9(4), 810–835, 2016

2. **Trial and error mathematics I: Dialectical and quasidialectical systems** (with J. Amidei, D. Pianigiani, G. Simi, and A. Sorbi)
Review of Symbolic Logic, 9(2), 299–324, 2016

1. **Universal computably enumerable equivalence relations** (with U. Andrews, S. Lempp, J. S. Miller, K. M. Ng, and A. Sorbi)
Journal of Symbolic Logic, 79(1), 60–88, 2014

Book chapters and conference papers

10. **Approximating approximate reasoning: fuzzy sets and the Ershov hierarchy** (with N. Bazhenov, M. Mustafa, and S. Ospichev)
forthcoming in *Lecture Notes in Computer Science*, 2021

9. **On the computational content of the theory of Borel equivalence relations** (with N. Bazhenov, B. Monin, and R. Zamora)
Oberwolfach Preprints, OWP 2021(06), 2021

8. **Limit learning equivalence structures** (with E. Fokina and T. Kötzing)
Proceedings of Machine Learning Research, 98, 383–403, 2019

7. **Ragionare per reclutare: la logica nei (e dei) convegni pubblici** (with A. Averardi)
Convegno Annuale Associazione Italiana Professori di Diritto Amministrativo, 2019

6. **Church-Turing thesis, in practice**
in M. Piazza and G. Pulcini (eds.), *Truth, Existence and Explanation*, Springer, 225–248, 2018

5. **Direzioni della logica in Italia: la teoria (classica) della ricorsività** (with P. Cintioli and A. Sorbi)
in H. Hosni, G. Lolli, C. Toffalori (eds.), *Le direzioni della ricerca logica in Italia 2*, Edizioni ETS, 195–234, 2018

4. **Degree Spectra of Structures with Respect to the Bi-embeddability Relation** (with E. Fokina and D. Rossegger)
Proceedings of the 11th Panhellenic Logic Symposium, 32–38, 2017

3. **Computable bi-embeddable categoricity of equivalence structures** (with N. Bazhenov, E. Fokina, and D. Rossegger)
Proceedings of the 11th Panhellenic Logic Symposium, 126–132, 2017

2. **Reducibility and bi-reducibility spectra of equivalence relations** (with E. Fokina and D. Rossegger)
Proceedings of the 11th Panhellenic Logic Symposium, 83–89, 2017

1. **Naturalness in mathematics** (with G. Venturi)
in G. Lolli, M. Panza, and G. Venturi (eds.), *From Logic to Practice*, Springer, 277–313, 2015

Submitted for publication

4. **Punctual equivalence relations and their (punctual) complexity** (with N. Bazhenov, K. M. Ng, and A. Sorbi)

3. **On the structure of computable reducibility on equivalence relations of natural numbers** (with U. Andrews and D. Belin)

2. **Comparing the isomorphism type of equivalence structures and preorders** (with N. Bazhenov)

1. **Thin objects are not transparent** (with M. Plebani and G. Venturi)

Research visits

Forthcoming

–/2021	Department of Mathemathical Logic and its Applications, Sofia University (2 weeks)

Past

12/2019	Department of Philosophy, University of Campinas (2 weeks)
09/2019	Department of Mathematics, University of Wisconsin–Madison (3 weeks)
05/2019	School of Physical and Mathematical Sciences, Nanyang Technological University, Singapore (4 weeks)
10/2018	Department of Information Engineering and Mathematics, University of Siena (4 weeks)
06/2018–07/2018	Sobolev Institute of Mathematics, Novosibirsk (5 weeks)
06/2018	Department of Mathematics of Nazarbayev University, Astana (2 weeks)
05/2018	Hasso Plattner Institute, University of Potsdam (1 week)
10/2017	Centre of Logic and Epistemology, University of Campinas (3 weeks)
11/2016	Department of Information Engineering and Mathematics, University of Siena (3 weeks)
01/2013–06/2013	Department of Computer Science, University of Buenos Aires (participation to the *Semester in Computability, Complexity and Randomness*)

Conference talks

Invited talks

03/2021	**Classifying word problems** *Computability Theory and Applications Online Seminar*
12/2020	**Revisiting the complexity of word problems** *Torino-Udine Logic Seminar*
06/2020	**Learning algebraic structures** Special session on *Algorithmic Learning Theory* of *Computability in Europe 2020*, University of Salerno
06/2020	**Word problems and ceers** *Reverse mathematics, numberings, and equivalence relations* workshop
02/2020	**Beyond isomorphism: the interplay between structures and computation** *Structuralist Foundations* workshop, University of Vienna
12/2019	**The global structure of degrees of equivalence relations** *First Workshop on Digitalization and Computable Models*, Novosibirsk State University
12/2019	**The complexity of punctual equivalence relations** *Studies in Mathematical Logic* workshop, University of São Paulo

06/2019	**Computable reducibility and its variants** *Computability, Complexity, and Randomness 2019*, Nazarbayev University, Nur-Sultan

Invited participations

01/2018	*Oberwolfach seminar* in Computability Theory

Contributed talks

41 contributed talks given, including several editions of *Logic Colloquium*, *Computability in Europe*, and *Computability, Complexity and Randomness*

Seminar talks given at the following universities

University of Padua, University of Wisconsin-Madison, University of Pavia, Sobolev Institute of Mathematics (Novosibirsk, Russia), Hasso Plattner Institute (Potsdam, Germany), University of Campinas (Brazil), University of Bologna, University of Urbino, University of Buenos Aires

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Projects, grants, and awards

Research projects

2020–2022	Team member of the project **Positive graphs as mathematical models of databases** (project lead: B. Kalmurzayev and S. Badaev) Funded by the Kazakh National Scientific Council
02/2020	Team member of the project **The computational content of the theory of Borel equivalence relations** (with N. Bazhenov, B. Monin, and R. Zamora) Funded by the Oberwolfach Research Institute for Mathematics, within the program *Research in Pairs*
2019–2021	Team member of the project **Effective properties of algebraic structures** (project lead: A. Soskova) Funded by the Bulgarian National Science Fund
2019–2021	Team member of the project **Illocutionary acts in mathematics** (project lead: M. Ruffino) Funded by São Paulo Research Foundation
2018–2020	Project lead of **Classifying relations via computable reducibility** Funded by the Austrian Science Fund
2016–2018	Project assistant of **Equivalence Relations in Computable Model Theory** (project lead: E. Fokina) Funded by the Austrian Science Fund
2014–2015	Six month fellowship for the project **The role of informal proofs in mathematics** Funded by Scuola Normale Superiore

Awards

2021	Special mention at **Paolo Gentilini Prize 2021**

Other grants

2015	Association for Symbolic Logic Travel Grant for *Logic Colloquium 2015* and *SLS Summer School in Logic 2015*, Helsinki

2012	Participation grant for the *MidAtlantic Mathematical Logic Seminar*, Deerfield, Florida
2010–2013	Participation grant at *AILA Summer School of Logic*

Teaching experience

Department of Mathematics, TU Wien

Summer 2020	**Advanced mathematical logic**
Summer 2017–2020	**Computability theory**

Department of Social and Cognitive Sciences, University of Siena

Winter 2020	**Logic and cognition**
Winter 2018–2020	**Logic**
Winter 2019–2020	**First-order logic**

Mentoring

2020	V. Polo, Master's thesis: "The paradoxes of material implication", University of Siena
2019	V. Cipriani, Master's thesis: "Algorithmic learning of computable structures", TU Wien/University of Camerino

Tutorials and seminars

Summer 2021	"Topics in algorithmic learning theory", Department of Mathematics, University of Namibia, within the program *Mentoring African Research in Mathematics* (MARM), promoted by the London Mathematical Society
03/2021	"Verità accessibili dal proprio divano", an introductory lecture on logic for undergraduates of all disciplines, University of Siena (in Italian)
Winter 2018	(joint with D. Rossegger) "An introduction to computable model theory", Department of Mathematics, TU Wien
Winter 2016	Invited tutorial for the *XVII Logic Workshop: Computation – Arithmetics – Cognition*, Checiny, Poland

Events and service to the field

Events

2021	(Organizer) "Equivalences, Numberings, Reducibilities", a satellite conference of the *8th European Congress of Mathematics*
2017, 2019	(Scientific Committee member) *FilMat Graduate Conference*
2015, 2016	(Organizer) *PHD-AILA Graduate Conference*
2014	(Local Committee member) *AILA Conference 2014*
2014	(Scientific Committee member) *FilMat Conference 2014*

Professional affiliations

2014–2017	(Council member) *Associazione Italiana di Logica e sue Applicazioni*
2012 – ongoing	(Promoting Committee member) *Italian Network for Philosophy of Mathematics*
2012 – ongoing	(Member) *Association of Symbolic Logic* and *Computability in Europe*

Reviewer

Mathematical Reviews, *Belgium National Fund for Scientific Research*, *Computability in Europe*, *Asian-European Journal of Mathematics*, *Erkenntnis*, *Journal of Logic and Computation*, *Logic Journal of the IGPL*, *Manuscripto*, *APhEx*, *Aspects of Computation*

Language Knowledge

Italian	Native
English	Fluent
French	Intermediate

Autorizzo il trattamento dei dati personali contenuti nel presente curriculum vitae ai sensi del D.Lgs. 196/2003 "Codice in materia di protezione dei dati personali". Autorizzo la pubblicazione del presente curriculum vitae sul portale di Ateneo "Amministrazione trasparente" in ottemperanza al D.Lgs. 33/2013 e al D.Lgs. 97/2016 e sul portale PERLAPA ai sensi del D.Lgs 165/2001.

September 28, 2021
Luca San Mauro