

Curriculum Vitae

Leonardo Nagami Coregliano, born July 7th 1991, São Paulo, SP, Brazil.

Academic History

- 09/2023–present day L. E. Dickson Instructor at
University of Chicago
- 09/2021–07/2023 Post-doctoral member at
Institute for Advanced Study
- 09/2015–06/2021 Ph.D. in Mathematics and Computer Science at
University of Chicago
- 08/2013–08/2015 M.Sc. in Computer Science at
Universidade de São Paulo
- 08/2009–08/2013 Bachelor’s degree in Molecular Sciences at
Universidade de São Paulo

Awards

- 2025 2024-2025 Suzuki Postdoctoral Fellowship, University of Chicago
Established by Yuji Suzuki, an alumnus and Council member of the Physical Sciences Division, to recognize outstanding postdoctoral researchers whose work is especially creative and original.
- 2020 William Rainey Harper Dissertation Fellowship, University of Chicago
This award, one of the University of Chicago’s highest honors for graduate students, is given in recognition of the recipient’s record of achievement and professional promise.
- 2020 University Unrestricted (UU) Fellowship, University of Chicago
Ph.D. student-level fellowship

Graduate Research

- 2021 Ph.D. dissertation: *Applications of continuous combinatorics to quasirandomness and extremal combinatorics*
Advisor: Prof. Alexander A. Razborov
- 2018 M.Sc. dissertation: *Semantic Limits of Combinatorial Objects*
Advisor: Prof. Alexander A. Razborov
- 2015 M.Sc. dissertation: *Flag Algebras and Tournaments*
Advisor: Prof. Yoshiharu Kohayakawa
- 09/2014–03/2015 Work in flag algebras and continuous combinatorics
(during exchange program at University of Chicago)
Advisor: Prof. Alexander A. Razborov; Co-advisor: Prof. Yoshiharu Kohayakawa

Undergraduate Work

- 01/2013–04/2013 Scientific Initiation: Sidorenko’s Conjecture
(during exchange program at University of Toronto),
Advisor: Dr. Viktor Harangi; Co-advisor: Prof. Yoshiharu Kohayakawa
- 07/2011–07/2013 Scientific Initiation: Modern Techniques in Combinatorics
(at Universidade de São Paulo),
Advisor: Prof. Yoshiharu Kohayakawa

Courses Taught

Winter 2026 (planned)	(Graduate) Limit theory and quasirandomness at University of Chicago
Winter 2026 (planned)	Honors Calculus II (IBL) at University of Chicago
Fall 2025 (in progress)	Mathematical Logic at University of Chicago
Fall 2025 (in progress)	Honors Calculus I (IBL) at University of Chicago
Fall 2024, Winter and Spring 2025	Honors Calculus (IBL) sequence at University of Chicago
Fall 2024	Abstract Linear Algebra at University of Chicago
Fall 2024	Reading and Research at University of Chicago (undergraduate advising Parth Wokhlu)
Fall 2023, Winter and Spring 2024	Honors Calculus (IBL) sequence at University of Chicago

Publications

- [1] Leonardo N. Coregliano, Jarosław Swaczyna, and Agnieszka Widz. How to get the random graph with non-uniform probabilities? *Electron. J. Combin.*, 32(2):Paper No. 2.45, 8, 2025.
- [2] Leonardo N. Coregliano and Maryanthe Malliaris. Weak Randomness in Graphons and Theons. *Random Structures Algorithms*, 66(1):Paper No. e21261, 2025.
- [3] Leonardo N. Coregliano and Maryanthe Malliaris. Sample completion, structured correlation, and netflix problems, 2025. 97 pages. arXiv:2509.20404.
- [4] Leonardo N. Coregliano and Maryanthe Malliaris. A packing lemma for VCN_k -dimension and learning high-dimensional data, 2025. 29 pages. arXiv:2505.15688. Submitted.
- [5] Leonardo N. Coregliano, Fernando G. Jeronimo, Chris Jones, Nati Linial, and Elyassaf Loyfer. Higher-order Delsarte dual LPs: Lifting, constructions and completeness, 2025. 50 pages. arXiv:2501.04854. Submitted.
- [6] Leonardo N. Coregliano and Henry P. Towsner. On the equivalence of quasirandomness and exchangeable representations independent from lower-order variables, 2024. 103 pages. arXiv:2406.08195. Submitted.
- [7] Leonardo N. Coregliano and Maryanthe Malliaris. High-arity PAC learning via exchangeability, 2024. 151 pages. arXiv:2402.14294. Submitted.
- [8] Leonardo N. Coregliano. Left-cut-percolation and induced-Sidorenko bigraphs. *SIAM J. Discrete Math.*, 38(2):1586–1629, 2024.
- [9] Leonardo N. Coregliano. Bigraph percolation problems, 2024. 41 pages. arXiv:2408.14257.
- [10] Leonardo N. Coregliano and Alexander A. Razborov. Natural quasirandomness properties. *Random Structures Algorithms*, 63(3):624–688, 2023.
- [11] Leonardo N. Coregliano, Fernando G. Jeronimo, and Chris Jones. Exact completeness of LP hierarchies for linear codes. In *14th Innovations in Theoretical Computer Science Conference*, volume 251 of *LIPICs. Leibniz Int. Proc. Inform.*, pages Art. No. 40, 18. Schloss Dagstuhl. Leibniz-Zent. Inform., Wadern, 2023.

- [12] Leonardo N. Coregliano and Maryanthe Malliaris. Countable Ramsey, 2022. 76 pages. arXiv:2203.10396. To appear in the Journal of Mathematical Logic.
- [13] Leonardo N. Coregliano, Fernando G. Jeronimo, and Chris Jones. A complete linear programming hierarchy for linear codes. In *13th Innovations in Theoretical Computer Science Conference*, volume 215 of *LIPICs. Leibniz Int. Proc. Inform.*, pages Art. No. 51, 22. Schloss Dagstuhl. Leibniz-Zent. Inform., Wadern, 2022.
- [14] Leonardo N. Coregliano and Fernando G. Jeronimo. Tighter bounds on the independence number of the Birkhoff graph. *European J. Combin.*, 105:Paper No. 103564, 29, 2022.
- [15] Leonardo N. Coregliano. On the abstract chromatic number and its computability for finitely axiomatizable theories. *J. Combin. Theory Ser. B*, 154:175–210, 2022.
- [16] Leonardo N. Coregliano and Alexander A. Razborov. Biregularity in Sidorenko’s conjecture, 2021. 31 pages. arXiv:2108.06599.
- [17] Leonardo N. Coregliano and Alexander A. Razborov. Semantic limits of dense combinatorial objects. *Russian Mathematical Surveys*, 75(4):627–723, aug 2020.
- [18] Leonardo N. Coregliano and Alexander A. Razborov. Semantic limits of dense combinatorial objects. *Uspekhi Mat. Nauk*, 75(4(454)):45–152, 2020.
- [19] Leonardo N. Coregliano, Roberto F. Parente, and Cristiane M. Sato. On the maximum density of fixed strongly connected subtournaments. *Electron. J. Combin.*, 26(1):Paper 1.44, 48, 2019.
- [20] Leonardo N. Coregliano. Quasi-carousel tournaments. *J. Graph Theory*, 88(1):192–210, 2018.
- [21] Leonardo N. Coregliano and A. A. Razborov. On the density of transitive tournaments. *J. Graph Theory*, 85(1):12–21, 2017.
- [22] Josefran O. Bastos and Leonardo N. Coregliano. Packing densities of layered permutations and the minimum number of monotone sequences in layered permutations. *Discrete Math. Theor. Comput. Sci.*, 18(2):Paper No. 7, 24, 2016.
- [23] Leonardo N. Coregliano. A continuous time stochastic model for biological neural nets, 2015. 17 pages. arXiv:1507.06331.

Talks and Seminars

- 07/2025 “Tamer regularity lemmas and PAC learning theory”
at Mathematical Congress of the Americas 2025 (Miami)
- “Exchangeable random structures and quasirandomness”
- 11/2024 at University of Illinois at Chicago
- 10/2024 at University of Chicago (Logic Seminar)
- 09/2024 at Southern Illinois University (Online Logic Seminar)
- “High-arity PAC learning via exchangeability”
- 08/2024 at Universidade de São Paulo
- 04/2024 at AMS 2024 Spring Central Sectional Meeting – Model Theory (University of Wisconsin-Milwaukee)
- 04/2024 at University of Chicago (CS Theory Seminar)
- 03/2024 at CCR2024: 17th International Conference on Computability, Complexity and Randomness (Nagoya)
- “Continuous combinatorics and natural quasirandomness”
- 06/2024 at Yonsei University (Discrete Analysis Seminar)
- 02/2023 at Georgia Institute of Technology
- 01/2023 at Emory University
- 12/2022 at 2022 CMS Winter meeting – Topological Methods in Model Theory (Toronto)
- 11/2022 at University of Illinois at Chicago
- 12/2021 at Workshop on Model Theory and Combinatorics (Fields Institute, online)

- 07/2021 at Institute for Advanced Study (short talk)
02/2021 at MidWest Model Theory Seminar (online)
- 09/2023 “A modern view of quasirandomness through continuous combinatorics”
Dickson Day (University of Chicago, short talk)
- “Continuous combinatorics”
06/2023 at Frontiers of Set Theory Workshop (Fields Institute)
05/2023 at Czech Academy of Sciences (Logic Seminar, online)
- “Weak randomness”
03/2023 at Wesleyan University (Logic seminar)
03/2023 at AMS 2023 Spring Southeastern Sectional Meeting – Logic, Combinatorics and Their Interactions (Georgia Institute of Technology)
- 02/2023 “Ramsey’s Theorem in the countable and weak randomness”
at Rutgers University (Logic seminar)
- 11/2022 “Introduction to natural quasirandomness: unique colorability and orderability”
at Institute for Advanced Study (CSDM seminar)
- 09/2022 “Structural complexity of universal theories via continuous combinatorics”
at Institute for Advanced Study (short talk)
- 05/2022 “Association schemes and codes I: The Delsarte linear program” and “Association schemes and codes II: Completeness of the hierarchy of high-order Hamming schemes”
at Institute for Advanced Study (CSDM seminar)
- “Ramsey’s Theorem in the countable and the approximate Erdős–Hajnal property”
10/2022 at University of Delaware (Discrete Math/Algebra Seminar)
10/2022 at Princeton University (Discrete Math Seminar)
10/2022 at AMS Fall Eastern Sectional Meeting – Ramsey Theory (University of Massachusetts – Amherst)
- 06/2022 at Combinatorics Meets Model Theory Workshop (University of Cambridge)
03/2022 at Rutgers Discrete Math Seminar
- 01/2022 “A Complete Linear Programming Hierarchy for Linear Codes”
at 17th Innovations in Theoretical Computer Science (ITCS) (Simons Institute, online)
- 11/2021 “Introduction to Continuous Combinatorics I: the semidefinite method of flag algebras” and
“Introduction to Continuous Combinatorics II: semantic limits”
at Institute for Advanced Study (CSDM seminar)
- “The abstract chromatic number”
08/2022 at Universidade de São Paulo (in Portuguese)
03/2021 at Institute for Advanced Study (CSDM seminar, online)
- “Semantic Limits of (Dense) Combinatorial Objects”
06/2020 at Stanford University (online)
08/2019 at Universidade de São Paulo
04/2019 at 6th Lake Michigan Workshop on Combinatorics and Graph Theory
- 05/2015 “Applications of flag algebras to tournaments I: Minimum density of transitive tournaments”
and “Applications of flag algebras to tournaments II: Quasi-carousel tournaments”
at Universidade de São Paulo
- 05/2015 “A continuous time stochastic model for biological neural nets”
at NeuroMat First Young Researchers Workshop (São Paulo, Brazil)
- 08/2014 “Flag Álgebras para Permutações”
(“Flag Algebras for Permutations”)
at Universidade de São Paulo
- 06/2013 “Conjectura de Erdős–Simonovits–Sidorenko”
(“The Erdős–Simonovits–Sidorenko Conjecture”)

- at Universidade de São Paulo (2 seminars)
- 04/2013 “A new proof of the known cases of Sidorenko’s conjecture”
at Emory University
- 08/2012 “Passeios na reta”
 (“Random walks on the line”)
at Universidade de São Paulo (3 seminars)
- 03/2012 “O problema das distâncias distintas de Erdős”
 (“Erdős’s distinct distances problem”)
at Universidade de São Paulo (3 seminars)

Languages

Portuguese (native language);
English (fluent level);
French (intermediate level);
Spanish (intermediate level);
Italian (basic level);
German (basic level);
Japanese (basic level).