

Marcelo Sales

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Last Updated: 6/11/22

Research Interest

Combinatorics and graph theory

Education

PhD in Mathematics
Emory University, Atlanta, GA
Advisor: Vojtech Rödl

August 2018 - Present

Master in Mathematics
University of São Paulo, São Paulo, Brazil
Thesis: Extremal and probabilistic problems in order types
Advisor: Yoshiharu Kohayakawa

January 2016 - May 2018

Bachelor in Mathematics
University of Sao Paulo, Sao Paulo, Brazil
Thesis: Algebraic graph theory
Advisor: Yoshiharu Kohayakawa

January 2014 - December 2015

Bachelor in Electrical Engineering
University of São Paulo, São Paulo, Brazil
Incompleted. Transferred to Math major.

January 2011 - December 2013

Teaching Experience

Emory University

August 2018 - Present

- Instructor, MATH 112 Calculus II (Spring 2020)
- Instructor, MATH 111 Calculus I (Fall 2020)
- Teaching Assistant, MATH 276 Honors Vector Calculus (Spring 2020)

- Teaching Assistant, MATH 275 Honors Linear Algebra (Fall 2019)
- Grader, MATH 112 Calculus II (Fall 2019)
- Grader, MATH 330 Introduction to Combinatorics (Spring 2019)
- Grader, MATH 361 Probability and Statistics I (Fall 2018)
- Tutor, weekly calculus workshop (Fall 2018, Spring 2019)

University of São Paulo

January 2017 - May 2018

- Teaching Assistant, weekly undergraduate combinatorics seminar (Spring 2017, Fall 2017, Spring 2018)

POTI - Intensive math olympiad training hub

February 2014 - December 2014

- Government initiative to train students for math olympiads
- Instructor of Combinatorics and Number Theory courses

ETAPA high school

February 2010 - August 2012

- Math tutor.
- Instructor for math olympiad students.

Honors and Awards

George W. Woodruff Fellowship (Fall 2018 - Present)
 Silver Medal, ACM-ICPC South America/Brazil Finals (2014)
 Honourable Mention, ACM-ICPC World Finals (2013)
 Gold Medal, Iberoamerican Math Olympiad (2010)
 Silver Medal, International Math Olympiad (2009, 2010)

Referee

Random Structures & Algorithms, Journal of Combinatorial Theory Series A, Journal of Combinatorial Theory Series B, Electronic Journal of Combinatorics.

Publications

1. M. Sales and B. Schülke, A local version of Katona's intersection theorem, preprint (2022).
2. V. Rödl and M. Sales, Some results and problems on clique coverings of hypergraphs, preprint (2022).

3. V. Rödl, M. Sales and Y. Zhao, Independence number of hypergraphs under degree conditions, preprint (2022)
4. B. Frederickson, V. Rödl and M. Sales, A note on the induced Ramsey theorem for spaces, preprint (2021).
5. A. Arman, V. Rödl, M. T. Sales, Colourful matchings, preprint (2021).
6. A. Arman, V. Rödl and M. T. Sales, Every Steiner triple system contains an almost spanning d -ary hypertree, *Electronic Journal of Combinatorics*, to appear.
7. V. Rödl and M. Sales, A blurred view of Van der Waerden type theorems, *Combinatorics, Probability and Computing*, to appear.
8. C. Reiher, V. Rödl, M. Sales, K. Sames and M. Schacht, On quantitative aspects of a canonisation theorem for edge-orderings, *Journal of London Mathematical Society*, to appear.
9. A. Arman, V. Rödl and M. T. Sales, Independent sets in subgraphs of a shift graph, *Electronic Journal of Combinatorics* 29 (2022), no. 1, Paper No. 1.26, 11 pp.
10. J. Han, Y. Kohayakawa, M. T. Sales, and H. Stagni, On some extremal results for order types, *Acta Mathematica Universitatis Comenianae (N.S.)* 88 (2019), no. 3, 779–785
11. J. Han, Y. Kohayakawa, M. T. Sales, and H. Stagni, Extremal and probabilistic results for order types, *Proceedings of the Twenty-Second Annual ACM-SIAM Symposium on Discrete Algorithms* (2019), 426–435.
12. J. Han, Y. Kohayakawa, M. T. Sales, and H. Stagni, Property testing for point sets on the plane, *LATIN 2018: Theoretical informatics, Lecture Notes in Computer Science 10807* (2018), 584–596.

Talks

- *Hypergraph representation*, Combinatorics seminar, University of São Paulo, May 30, 2022.
- *Ramsey and density results for approximate arithmetic progressions*, Combinatorics seminar, University of Manitoba, October 28, 2021 (Online).
- *On some extremal results for order types*, EUROCOMB 2019 - Bratislava, Slovakia, August 26-30, 2019.
- *Extremal and probabilistic results for order types*, SODA 19 - ACM-SIAM Symposium on Discrete Algorithms - San Diego, CA, January 6-9, 2019.
- *Property testing for point sets on the plane*, LATIN 2018 - 13th Latin American Theoretical Informatics Symposium - Buenos Aires, Argentina, April 16-19, 2018.
- *Extremal number of configurations in a grid*, Combinatorics seminar, Emory University, November 6, 2017.

Workshops and Schools

- WoPOCA - 1st Workshop Paulista in Optimization, Combinatorics e Algorithms - Águas de Lindóia, São Paulo, Brazil, June 16-18, 2017
- São Paulo School of Advanced Science on Algorithms, Combinatorics and Optimization - São Paulo, Brazil, July 18-29, 2016

Computer Skills

C/C++, LaTeX, Linux, MS Office.