Victor Seixas Souza

Mathematician

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Trinity College, Cambridge.

▬▬▬ Current Position

2020 – Now   **PhD in Pure Mathematics,** *University of Cambridge, United Kingdom.*
Sᴜᴘᴇʀᴠɪsᴏʀ: Prof. Béla Bollobás.

▬▬▬ Research Interests

- ○ Arithmetic Combinatorics and Number Theory.
- ○ Extremal and Probabilistic Combinatorics.
- ○ Random Graphs and Networks.
- ○ Synchronisation Phenomena.

▬▬▬ Education

2019 – 2020   **MASt. in Pure Mathematics,** *University of Cambridge, United Kingdom.*
Part III of the Mathematical Tripos.

2017 – 2019   **MSc. in Pure Mathemathics,** *IMPA, Brazil.*
Sᴜᴘᴇʀᴠɪsᴏʀ: Prof. Rob Morris.

2013 – 2014   **Visiting Student,** *Faculty of Science, University of Alberta, Canada.*
Sᴜᴘᴇʀᴠɪsᴏʀ: Prof. Byron Schmuland.

2011 – 2016   **BSc. in Computer Engineering,** *State University of Campinas, Brazil.*
Sᴜᴘᴇʀᴠɪsᴏʀ: Prof. Christiane Campos.

▬▬▬ Publications

2024   **The Maker-Breaker percolation game on a random board.**
arXiv Preprint
with V. Dvořák and A. Mond.

2023   **On the number of monochromatic solutions to multiplicative equations.**
arXiv Preprint
with L. Aragão, J. Chapman, M. Ortega.
(Awarded best poster in British Mathematical Colloquium 2023)

2023   **Localised graph Maclaurin inequalities.**
Annals of Combinatorics
with L. Aragão.

2022   **Expander graphs are globally synchronising.**
arXiv Preprint (Submitted)
with P. Abdalla, A. Bandeira, M. Kassabov, S. Strogatz and A. Townsend.
(Research highlighted in Quanta Magazine)

2022   **On the Zero-Sum Ramsey Problem over $\mathbb{Z}_2^{\mathrm{d}}$.**
LATIN 2022: Theoretical Informatics (Conference paper)
with J. Alvarado, L. Colucci and R. Parente.

2022   **A note on the number of Egyptian fractions.**
Integers
with N. Lebowitz-Lockard.

2022	**Improved bounds for the dimension of divisibility.** European Journal of Combinatorics (Accepted) with L. Versteegen.
2022	**Hitting times for arc-disjoint arborescences in random digraph processes.** Proceedings of the XI LAGOS Symposium (Conference paper) with M. Collares, Y. Kohayakawa, T. Martins and R. Parente.
2021	**The Maker-Breaker percolation game on the square lattice.** Journal of Combinatorial Theory, Series B (Accepted) with V. Dvořák and A. Mond.
2021	**The Typical Structure of Sets with Small Sumset.** International Mathematics Research Notices with M. Campos, M. Collares, R. Morris and N. Morrison.
2020	**The order dimension of divisibility.** Journal of Combinatorial Theory, Series A with D. Lewis.
2020	**Blowup Ramsey numbers.** European Journal of Combinatorics

▬▬▬▬ Scholarships

2020 – 2024	**Trinity Internal Graduate Funding,** *Trinity College, Cambridge, United Kingdom.* Funding for the PhD in Pure Mathematics.
2019 – 2020	**Trinity Studentship in Mathematics,** *Trinity College, Cambridge, United Kingdom.* Funding for the Part III of the Mathematical Tripos.
2017 – 2019	**CAPES Academical Excellence Scholarship,** *IMPA, Brazil.* For the Masters in Pure Mathematics.
2015 – 2015	**FAPESP Undergraduate Research,** *State University of Campinas, Brazil.* SUBJECT: Cover times of random walks on graphs. SUPERVISOR: Prof. Serguei Popov.
2013 – 2014	**CNPQ Science without Borders Exchange,** *University of Alberta, Canada.* SUBJECT: Random walks on finite graphs. SUPERVISOR: Prof. Byron Schmuland.

▬▬▬▬ Summer Schools

2022	**Graphs, Groups, Stochastic Processes,** *Renyi Institute, Hungary.*
2021	**Applications of Expander Graphs to Number Theory and Computer Science,** *University of North Carolina Greensboro, United States. (Online).*
2020	**Optimization, Interpolation and Modular Forms,** *EPFL, Switzerland. (Online).*
2018	**XXII Brazilian School of Probability,** *IMPA, Rio de Janeiro.*
2017	**XXI Brazilian School of Probability,** *PUC Rio, Rio de Janeiro.*
2017	**Random Graphs and Probabilistic Methods,** *Fields Institute, Canada.* Funded by the Fields Institute.
2017	**Summer Program Scholarship,** *IMPA, Brazil.* Course on Markov Chains lectured by Prof. Milton Jara.

2016   **School of Advanced Science on Algorithms, Combinatorics and Optimization,** *University of São Paulo, Brazil.*

2016   **Summer Program Scholarship,** *IMPA, Brazil.*
Course in *Research Topics Extremal Combinatorics* lectured by Prof. Rob Morris.

2015   **Summer Program Scholarship,** *IMPA, Brazil.*
Course in *Combinatorics* lectured by Prof. Rob Morris.

Teaching

2023   **Supervisions,** *University of Cambridge, United Kingdom.*
Part II Graph Theory, Michaelmas term.

2022   **Supervisions,** *University of Cambridge, United Kingdom.*
Part II Number Theory, Michaelmas term.

2021   **Supervisions,** *University of Cambridge, United Kingdom.*
Part II Number Theory, Michaelmas term.

2021   **Supervisions,** *University of Cambridge, United Kingdom.*
Part IA Analysis, Lent term.

2020   **Supervisions,** *University of Cambridge, United Kingdom.*
Part II Number Theory, Michaelmas term.

2019   **Teacher Assistant,** *IMPA, Brazil.*
Probability I, graduate level.