

CURRICULUM VITAE

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Academic Background

2013-2017: PhD in Computer Science, Federal University of Rio de Janeiro, Brazil
Subject: Algorithms and Combinatorics for Bioinformatics
2011-2013: MSc in Computer Science, Federal University of Rio de Janeiro, Brazil
Subject: Algorithms and Combinatorics for Bioinformatics
2007-2011: Mathematics, Fluminense Federal University, Brazil

Professional career

2024-present: Project Coordinator of Research between Academy and Industries:
i) Project in partnership with Academy Itaú “Detecção de Vivacidade da Fala para Prevenção de Ataques por Reprodução em Sistemas Biométricos de Voz” (2025-);
ii) Project in partnership with Clavis - Segurança da Informação e FINEP “Plataforma Integra de inteligência para Monitoramento de Ameaças, Registro de Eventos e Resposta à Incidentes nas áreas de Segurança e Defesa Cibernética” (2024-).
2024: Visiting researcher at INRIA - ERABLE Laboratoire de Biométrie et Biologie Évolutive of the Université Claude Bernard, Lyon 1, France, INRIA Fellowship
2020-present: Professor of Computer Science, Fluminense Federal University, IC/UFF, Brazil
2020-present: Professor of Computer Science, Fundação Centro de Ciências e Educação Superior a Distância do Estado do Rio de Janeiro, CEDERJ/UFF, Brazil
2018-2019: Postdoctoral researcher at Federal University of Rio de Janeiro, PESC/UFRJ, Brazil, PNPD-CAPES Scholarship
Subject: Algorithms and Combinatorics for Strings and Graphs
2017-2018: Postdoctoral researcher at Fluminense Federal University, IC/UFF, Brazil, PDJ-CNPq Scholarship

Projects coordinator and Academic services

2025-present: CNPq Research Productivity Fellow - Level C
2022-present: Young Scientist of Our State Program, JCNE-FAPERJ
2021-2025: Universal Research Project, Universal-CNPq
2024-present: Editorial Board of the Journal of the Brazilian Computer Society
2018-present: Program Committee at the Brazilian Symposium on Bioinformatics
2013-present: Journal's reviewer: Theoretical Computer Science; Discrete Applied Mathematics; IEEE/ACM Transactions on Computational Biology and Bioinformatics; Bioinformatics; Computers and Operations Research; Engineering Applications of Artificial Intelligence; RAIRO - Operations Research; Journal of Automata, Languages, and Combinatorics.

Conference's reviewer: IEEE International Conference on Bioinformatics and Biomedicine (BIBM); Latin American Theoretical Informatics Symposium (LATIN); Workshop on Graphs (WG); International Conference and Workshops on Algorithms and Computation (WALCOM); International Computing and Combinatorics Conference (COCCON); Brazilian Symposium on Bioinformatics (BSB); Simpósio Brasileiro de Pesquisa Operacional (SBPO); Concurso de Teses e Dissertações da CSBC (CTD/CSBC).

Administrative experience

2023-present: Vice-coordinator of the undergraduate course in Computer Science at Fundação Centro de Ciências e Educação Superior a Distância do Estado do Rio de Janeiro, CEDERJ/UFF, Brazil

Synergistic Activities

2020-present: Disseminator of academic courses (on Theoretical Computer Science studies) at YouTube <https://www.youtube.com/user/lfignacio1>
2014: Top 10 of the best MSc dissertations in Computer Science of Brazil - Sociedade Brasileira de Computação

Selected publications

1. Cunha, L.; Lopes, T.; Souza, U.; Bohnenkämper, L.; Braga, M.; Stoye, J. Closing the Complexity Gap of the Double Distance Problem. IEEE Transactions on Computational Biology and Bioinformatics, p.1-12,2025.
Available at: <https://doi.org/10.1109/TCBBIO.2025.3590588>

2. Couto, F.; Cunha, L.; Pinto, E.; Posner, D. Minimizing distances between vertices and edges through tree t-spanners. *Theoretical Computer Science*, v.1048, p. 1-18, 2025.
Available at: <https://doi.org/10.1016/j.tcs.2025.115362>
3. Cunha, L.; Sau, I. ; Souza, U.; Valencia-Pabon, M. Computing Distances on Graph Associahedra Is Fixed-Parameter Tractable. In: *International Colloquium on Automata, Languages, and Programming (ICALP)*, 2025, v. 334. p. 119-19.
Available at: <http://dx.doi.org/10.4230/LIPIcs.ICALP.2025.63>
4. Cunha, L.; Santiago, L.; Souza, F. Graph admissibility: Case generation and analysis by learning models. *Journal of Computational Science*, v. 78, p. 1-11, 2024.
Available at: <http://dx.doi.org/10.1016/j.jocs.2024.102281>
5. Cunha, L.; Sau, I.; Souza, U. On the Complexity of the Median and Closest Permutation Problems. *Algorithms for Molecular Biology*. v. 19, p.24:1-24, 2024.
Available at: <https://doi.org/10.1186/s13015-024-00269-z>
6. Cunha, L.; Marciano, E.; Moraes, A.; Santiago, L.; Santos, C. New parallelism and heuristic approaches for generating tree t-spanners in graphs. *Concurrency and Computation-Practice & Experience*. v. 36. p.1-36, 2024.
Available at: <https://doi.org/10.1002/cpe.8106?af=R>
7. Cunha, L.; Medina, M. Binary Jumbled Pattern Matching: Suffix Tree Indexing. In: *International Computing and Combinatorics Conference (COCOON)*, 2024, v. 15162. p. 1-12.
Available at: https://doi.org/10.1007/978-981-96-1093-8_40
8. Abreu, A.; Cunha, L.; Figueiredo, C.; Kowada, L.; Marquezino, F.; Posner, D.; Portugal, R. The graph tessellation cover number: Chromatic bounds, efficient algorithms and hardness. *Theoretical Computer Science (Section Natural Computing)*, v. 801, p. 175-191, 2020.
Available at: <http://dx.doi.org/10.1016/j.tcs.2019.09.013>
9. Cunha, L.; Protti, F. Genome Rearrangements on Multigenomic Models: Applications of Graph Convexity Problems. *Journal of Computational Biology*, v. 26, p. 1214-1222, 2019.
Available at: <http://dx.doi.org/10.1089/cmb.2019.0091>
10. Cunha, L.; Kowada, L.; Hausen, R.; Figueiredo, C. A Faster 1.375-Approximation Algorithm for Sorting by Transpositions. *Journal of Computational Biology*. v. 22, p. 1044-1056, 2015.
Available at: <http://dx.doi.org/10.1089/cmb.2014.0298>
11. Cunha, L.; Kowada, L.; Hausen, R.; Figueiredo, C. Advancing the Transposition Distance and Diameter through Lonely Permutations. *SIAM Journal on Discrete Mathematics*. v. 27(4), p. 1682–1709, 2013.
Available at: <https://doi.org/10.1137/120899753>