

CURRICULUM VITAE

Prof. Dr. Luís Felipe Ignácio Cunha

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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: Bachelor's degree in Mathematics | Fluminense Federal University, Brazil

Professional Career

2024-present: Coordinator of Academia-Industry Projects:
- Itaú R&D Institute (ICTi) Project: “Speech Liveness Detection for Replay Attack Prevention in Voice Biometric Systems”.
- Clavis Information Security & FINEP Project: “An Intelligence Platform for Threat Monitoring, Event Logging, and Incident Response in Cyber Security and Defense”.
2024: Visiting researcher | INRIA - ERABLE Laboratoire de Biométrie et Biologie Évolutive, 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 | Federal University of Rio de Janeiro, PESC/UFRJ, Brazil
PNPD-CAPES Scholarship
Subject: Algorithmic and Combinatorial Methods for Strings and Graphs

2017-2018: Postdoctoral researcher | Fluminense Federal University, IC/UFF, Brazil
PDJ-CNPq Scholarship
Subject: Algorithmic and Combinatorial Methods for Strings and Graphs

Coordinator of Research Projects

2025-present: CNPq Research Productivity Fellow - Level C
2026-present: FAPERJ Young Scientist of Our State Program, JCNE
2022-2025: FAPERJ Young Scientist of Our State Program, JCNE
2021-2025: CNPq Universal Research Project
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; BMC Bioinformatics; IEEE/ACM Transactions on Computational Biology and Bioinformatics; Bioinformatics; Computers and Operations Research; Journal of Computational Biology; 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 (COCOON); Brazilian Symposium on Bioinformatics (BSB); Simpósio Brasileiro de Pesquisa Operacional (SBPO); Concurso de Teses e Dissertações da CSBC (CTD/CSBC).

Administrative experience

2023-2026: Vice-Coordinator – B.S. in Computer Science | Fundação Centro de Ciências e Educação Superior a Distância do Estado do Rio de Janeiro, CEDERJ/UFF, Brazil

Synergistic Activities

2020-present: Theoretical Computer Science Educator on YouTube
Channel: [@lfignacio1](#)
2014: Finalist, Best Computer Science MSc Dissertation Contest, Brazilian Computer Society (SBC)
Ranked among the Top 10 nationwide

Selected publications

1. Cunha, L.; Medina, M. Binary jumbled indexing: suffix tree histogram. *Journal of Combinatorial Optimization*. v. 51, p. 32, 2026.
Available at: <https://dx.doi.org/10.1007/s10878-026-01407-6>
2. Cunha, L.; Lopes, T.; Braga, M.; Stoye, J. On the Complexity of (l,k)-Median Problems. 26th International Conference on Algorithms for Bioinformatics (WABI) 2026, v. 390, p. 1-17.
Available at: <https://doi.org/10.4230/LIPIcs.WABI.2026.19>
3. 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>
4. 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>
5. 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>
6. 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>
7. 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>
8. 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>
9. 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>
10. 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>