Raphaël Tinarrage - Publications

Journal articles

02/2020 **Computing persistent Stiefel-Whitney classes of line bundles**.
arXiv: https://arxiv.org/abs/2005.12543
Published in Journal of Applied and Computational Topology 2021 (https://link.springer.com/article/10.1007/s41468-021-00080-4)

12/2019 **Recovering the homology of immersed manifolds**.
arXiv: https://arxiv.org/abs/1912.03033
To appear in Discrete and Computational Geometry

11/2018 **DTM-based filtrations**, with H. Anai, F. Chazal, M. Glisse, Y. Ike, H. Inakoshi, and Y. Umeda.
arXiv: https://arxiv.org/abs/1811.04757
Published in Symposium Abel 2018 proceedings (https://link.springer.com/chapter/10.1007/978-3-030-43408-3_2) and SoCG 2019 conference (https://drops.dagstuhl.de/opus/volltexte/2019/10462/)

Conference articles

09/2022 **O impacto da Súmula Vinculante 26 na diminuição de demanda similar no STF: uma análise quantitativa por modelos de machine learning**, with B. S. Chagas and C. M. Damian.
To be presented at XI Encontro Internacional do CONPEDI
Paper: https://raphaeltinarrage.github.io/files/Paper_CONPEDI_Quantitativa.pdf

09/2022 **Progressão de regime em crimes hediondos no Supremo Tribunal Federal: uma análise empírica pela Súmula Vinculante 26.**, with A. C. M. Jaccoud and Pedro B. de Oliveira.
To be presented at XI Encontro Internacional do CONPEDI
Paper: https://raphaeltinarrage.github.io/files/Paper_CONPEDI_Empirica.pdf

Preprints

12/2021 **Simplicial approximation to CW complexes in practice**.
arXiv: https://arxiv.org/abs/2112.07573
Under review

Ongoing projects

Since 2022 **The Implementation of World Health Organisation Norms and Standards in Brazil**, with P. Almeida, N. Salinas, L. Gomes, J. Nunes, G. T. Romay, H. Ennes, V. Paiva, C. Ovelheiro.
Statistical analysis of citations of WHO's recomendations in Brazilian normative documents

Since 2022 **Persistent Homology for Glioblastome Segmentation**, with A. François.
Application of Persistent Homology to the segmentation of brain tumors from multimodal MRI images

Since 2021 **Lie Geometry for Data Analysis**, with H. Ennes.
Adaptation of tools from Lie geometry to Data Analysis

Since 2021 **Zig-zag Persistent Homology for Dynamic Graphs**, with J. R. Ponciano and C. Linhares.
We introduce a new invariant of dynamic graphs, allowing visualization and exploration of topological features.

Since 2021 **Machine Learning for Súmulas Vinculantes**, with H. Hennes, J. Poco, J. R. Ponciano and L. Resck.
Application of methods from Natural Language Processing to the analysis of Brazilian Supreme Court's documents

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