CURRICULUM VITAE - **Lucas Pascotti Valem**

Researcher and PhD Student at São Paulo State University (UNESP), 26 years old

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1.) EDUCATION

Year	Degree	Institution
2020-Current	Ph.D., Computer Science	São Paulo State University[1], Rio Claro, São Paulo, Brazil
2017-2019	M.Sc., Computer Science	São Paulo State University[1], Rio Claro, São Paulo, Brazil
2013-2016	B.Sc., Computer Science	São Paulo State University[1], Rio Claro, São Paulo, Brazil

[1]Currently, UNESP is ranked among the top-10 universities in Brazil (https://www.timeshighereducation.com).

2.) PROFESSIONAL EXPERIENCE

- Position: **Researcher and Infrastructure Technician**
  Institution: Fundunesp - Fundação para o Desenvolvimento da UNESP.
  Department: The Center for Geosciences applied to Petroleum (UNESPetro).
  Period: March/2019 - October/2020; July/2021 - Current.
  Description: A project under the partnership UNESP-Petrobras. My role is to research and develop techniques and algorithms based on computer vision and artificial intelligence with the objective of improving the security of Petrobras work environments.

3.) RESEARCH GRANTS

- **Support for Computational Environments and Experiments Execution: Weakly-Supervised and Classification Fusion Methods.**
  Supervisor: Prof. Daniel Carlos Guimarães Pedronette.
  Foundation: Foundation for Research Support of the State of São Paulo (FAPESP) - Grant #2020/11366-0.
  Type: Technical Training (TT-4).
  Period: 11/2020 - 06/2021.

- **Selection and Combination of Unsupervised Learning Methods for Image Retrieval.**
  Supervisor: Prof. Daniel Carlos Guimarães Pedronette.
  Type: Master's Research.
  Foundation: Foundation for Research Support of the State of São Paulo (FAPESP) - Grant #2017/02091-4.
  Period: 05/2017 - 02/2019.

- **Re-Ranking and Rank Aggregation Approaches for Image Retrieval Tasks.**
  Supervisor: Prof. Daniel Carlos Guimarães Pedronette.
  Type: Undergraduate Research.
  Foundation: Foundation for Research Support of the State of São Paulo (FAPESP) - Grant #2014/04220-8.
  Period: 05/2014 - 12/2016.

- **Development of Educational Softwares for Math Students.**
  Supervisor: Prof. Rosana Giaretta Sguerra Miskulin.
  Type: University Extension Project (PROEX Program).
  Foundation: Coordination for the Improvement of Higher Education Personnel (CAPES)
  Period: 04/2013 - 10/2013.

4.) SCIENTIFIC RESULTS (MOST RELEVANT) [1]

- **Journal Papers:**

  - PEDRONETTE, D. C. G. ; VALEM, L. P.; TORRES, R. S. . **A BFS-Tree of ranking references for unsupervised manifold learning.** In: Pattern Recognition, v. 111, p. 107666, 2021.

  - VALEM, L. P. ; PEDRONETTE, D. C. G. . **Graph-based selective rank fusion for unsupervised image retrieval.** In: Pattern Recognition Letters, v. 135, p. 82–89, 2020.

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[1]My citations from Google Scholar: https://scholar.google.com.br/citations?user=jnJ76JAAAAAJ

- PISANI, F.; VALEM, L. P. ; PEDRONETTE, D. C. G.; TORRES, R. da S.; BORIN, E.; BRETERNITZ JR.; M. . **A unified model for accelerating unsupervised iterative re-ranking algorithms.** In: Concurrency and Computation: Practice and Experience, v. 32 n. 14, p. e5702, 2020.

- VALEM, L. P. ; PEDRONETTE, D. C. G. . **Unsupervised Selective Rank Fusion for Image Retrieval Tasks.** In: Neurocomputing; v. 377, p. 182-199, 2019.

- PEDRONETTE, D. C. G. ; VALEM, L. P. ; ALMEIDA, J.; TORRES, R. S. . **Multimedia Retrieval Through Unsupervised Hypergraph-Based Manifold Ranking.** In: IEEE Transactions on Image Processing (TIP); v. 28, p. 5824–5838, 2019.

- VALEM, L. P. ; DE OLIVEIRA C. R. ; PEDRONETTE, D. C. G. ; ALMEIDA, J. . **Unsupervised Similarity Learning through Rank Correlation and kNN Sets.** In: The ACM Transactions on Multimedia Computing, Communications, and Applications (TOMM); 2018.

- VALEM, L. P. ; PEDRONETTE, D. C. G. ; ALMEIDA, J. . **Unsupervised Similarity Learning through Cartesian Product of Ranking References for Image Retrieval Tasks.** In: Pattern Recognition Letters (PRL); 2018.

- **Conference Papers:**

  - VALEM, L. P. ; PEDRONETTE, D. C. G. . **A Denoising Convolutional Neural Network for Self-Supervised Rank Effectiveness Estimation on Image Retrieval.** In: ACM International Conference on Multimedia Retrieval (ICMR), 2021, Taipei - Taiwan.

  - PRESOTTO, J. G. C.; VALEM, L. P. ; DE SÁ N. G. ; PEDRONETTE, D. C. G. ; PAPA, J. P. ; **Weakly Supervised Learning through Rank-based Contextual Measures.** In: 2020 25th International Conference on Pattern Recognition (ICPR), 5752-5759, 2021.

  - DE SÁ N. G. ; VALEM, L. P. ; PEDRONETTE, D. C. G. . **A Multi-level Rank Correlation Measure for Image Retrieval.** In: Proceedings of the VISIGRAPP 2021, v. 5, p. 370-378.

  - LOPES, L. T. ; VALEM, L. P. ; PEDRONETTE, D. C. G. ; GUILHERME, I. R. ; PAPA, J. P. ; SANTANA, M. C. S. ; COLOMBO, D. . **Manifold Learning-based Clustering Approach Applied to Anomaly Detection in Surveillance Videos.** In: 15th International Conference on Computer Vision Theory and Applications (VISAPP), 2020, Valleta - Malta.

  - DE FERNANDO, F. A. ; PEDRONETTE, D. C. G. ; DE SOUSA, G. J. ; VALEM, L. P. ; GUILHERME, I. R. . **RaDE: A Rank-based Graph Embedding Approach.** In: 15th International Conference on Computer Vision Theory and Applications (VISAPP), 2020, Valleta - Malta.

  - VALEM, L. P. ; PEDRONETTE, D. C. G. . **An Unsupervised Genetic Algorithm Framework for Rank Selection and Fusion on Image Retrieval.** In: ACM International Conference on Multimedia Retrieval (ICMR), 2019, Ottawa - Canada.

  - VALEM, L. P. ; PEDRONETTE, D. C. G. ; BREVE, F. ; GUILHERME, I. R. . **Manifold Correlation Graph for Semi-Supervised Learning.** In: IJCNN IEEE WCCI, 2018, Rio de Janeiro - Brazil.

  - ALMEIDA, J. ; VALEM, L. P. ; PEDRONETTE, D. C. G. . **A Rank Aggregation Framework for Video Interestingness Prediction.** In: 9th International Conference on Image Analysis and Processing (ICIAP), 2017, Catania - Italy.

  - VALEM, L. P. ; PEDRONETTE, D. C. G. . **Selection and Combination of Unsupervised Learning Methods for Image Retrieval.** In: 15th International Workshop on Content-Based Multimedia Indexing (CBMI' 17), 2017, Florence - Italy.

  - VALEM, L P. ; PEDRONETTE, D. C. G. . **An Unsupervised Distance Learning Framework for Multimedia Retrieval.** In: ACM International Conference on Multimedia Retrieval (ICMR), 2017, Bucharest - Romania.

  - VALEM, L. P. ; PEDRONETTE, D. C. G. . **Unsupervised Similarity Learning through Cartesian Product of Ranking References for Image Retrieval Tasks.** In: SIBGRAPI Conference on Graphics, Patterns and Images, 2016, São José dos Campos - Brazil.

- VALEM, L. P.; PEDRONETTE, D. C. G.; TORRES, R. da S.; EDSON BORIN; ALMEIDA, J. . **Effective, Efficient, and Scalable Unsupervised Distance Learning in Image Retrieval Tasks.** In: ACM International Conference on Multimedia Retrieval (ICMR), 2015, Shangai - China.

5.) Awards

- **2020: Second Best Dissertation, 33rd Contest of Thesis and Dissertations (CTD)**; "Unsupervised Selective Rank Fusion on Content-based Image Retrieval"; Congress of the Brazilian Computer Society (CSBC 2020).

- **2019 Best Master's Thesis Award; Workshop of Theses and Dissertations (WTD)**; Conference on Graphics, Patterns and Images (SIBGRAPI 2019); "Unsupervised Selective Rank Fusion on Content-based Image Retrieval"; Rio de Janeiro - Brazil.

- **2017: First Place, 36th Contest of Undergraduate Research Projects (CTIC)**, "Unsupervised Similarity Learning through Cartesian Product of Ranking References for Image Retrieval Task.", Congress of the Brazilian Computer Society (CSBC 2017).

- **2017: Honor Student in Undergraduate Research Award**, São Paulo State University (UNESP); Rio Claro, São Paulo, Brazil.

- **2016: First Place, XXVIII Congress of Undergraduate Research Projects (CIC)**, "Unsupervised Similarity Learning through Cartesian Product of Ranking References for Image Retrieval Task.", São Paulo State University (UNESP).

- **2016: Best Paper Award**; Conference on Graphics, Patterns and Images (SIBGRAPI 2016); "Unsupervised Similarity Learning through Cartesian Product of Ranking References for Image Retrieval Task."; São José dos Campos - Brasil.

- **2015: Fourth Place, XXVII Congress of Undergraduate Research Projects (CIC)**, "Effective, Efficient, and Scalable Unsupervised Distance Learning in Image Retrieval Tasks.", São Paulo State University (UNESP).

- **2015: Classified Among the Top 10, 34th Contest of Undergraduate Research Projects (CTIC)**, "Effective, Efficient, and Scalable Unsupervised Distance Learning in Image Retrieval Tasks.", Congress of the Brazilian Computer Society (CSBC 2015).

6.) Additional Information

- **Published Softwares:**

    - **2020: Unsupervised Selective Rank Fusion (USRF)**: The USRF is an open source software (developed in Python), which consists in a framework for ranked lists selection and fusion, completely unsupervised. Available at github.com/UDLF/USRF.
    - **2016: Unsupervised Distance Learning Framework (USRF)**: An open-source framework (developed in C/C++) of unsupervised distance learning methods for image and multimedia retrieval tasks. Available at github.com/UDLF/UDLF.

- **Teaching Experience:**

    - **Teaching Internship in the Computer Organization classes** of the Computer Science Program (August/2018 to December/2018) at São Paulo State University (UNESP). Description: I have taught part of the classes of the Computer Organization sessions of the Computer Science BSc course.

- **Reviewer of International Journals:**

    - Journal of Visual Communication and Image Representation (JVCI)
    - INFOCOMP Journal of Computer Science

- **Language Skills:**

    - English (Advanced), Portuguese (Native), Spanish (Basic), Japanese (Basic)