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Academic and Professional Positions

2025	📌 Visiting Professor - Youth Teacher International Exchange Program - University of Science and Technology Beijing (USTB), China
2014-present	📌 Visiting Professor - New York University (NYU), US
2017-2020	📌 Visiting Professor - University of Surrey, UK
2015-present	📌 Full Member - São Paulo State Academy of Sciences (ACIESP)
2013 – 2017	📌 Director eScience Research Center - USP
2010 – 2014	📌 Head Computer Science Department - IME - USP
2007 – 2023	📌 Special Advisor - São Paulo Research Foundation - FAPESP
2005-2008	📌 Visiting Professor - University of California Santa Barbara (UCSB), US
2001-2024	📌 Visiting Professor - Télécom Paris, Institut Polytechnique de Paris, France
2002 – present	📌 CNPq Researcher 1A
1998 – present	📌 Full Professor - Computer Science Department - IME - USP

Selected Publications

Publications

- 1 H. Morimitsu, X. Zhu, R. M. Cesar, X. Ji, and X.-C. Yin, “Dpflow: Adaptive optical flow estimation with a dual-pyramid framework,” in *Proceedings of the Computer Vision and Pattern Recognition Conference (CVPR)*, 2025, pp. 17 810–17 820.
- 2 N. Hamidishad and R. M. Cesar Jr, “Man-made object segmentation around reservoirs by an end-to-end two-phase deep learning-based workflow,” *Journal of Applied Remote Sensing*, vol. 18, no. 1, pp. 018 502–018 502, 2024.
- 3 H. Morimitsu, X. Zhu, R. M. Cesar-Jr, X. Ji, and X.-C. Yin, “Rapidflow: Recurrent adaptable pyramids with iterative decoding for efficient optical flow estimation,” in *IEEE International Conference on Robotics and Automation (ICRA)*, 2024.
- 4 H. Oliveira, P. H. Gama, I. Bloch, and R. M. Cesar Jr, “Meta-learners for few-shot weakly-supervised medical image segmentation,” *Pattern Recognition*, vol. 153, p. 110 471, 2024.
- 5 M. Hosseini, A. Sevtsuk, F. Miranda, R. M. Cesar Jr, and C. T. Silva, “Mapping the walk: A scalable computer vision approach for generating sidewalk network datasets from aerial imagery,” *Computers, Environment and Urban Systems*, vol. 101, p. 101 950, 2023.
- 6 E. K. Tokuda, H. F. de Arruda, G. S. Domingues, *et al.*, “Estimating the effects of urban green regions in terms of diffusion,” *Environment and Planning B: Urban Analytics and City Science*, 2022.
- 7 S. Li, W. Ren, F. Wang, *et al.*, “A comprehensive benchmark analysis of single image deraining: Current challenges and future perspectives,” *International Journal of Computer Vision*, vol. 129, pp. 1301–1322, 2021.

- 8 I. B. Araujo, E. K. Tokuda, and R. M. Cesar, "The impact of real rain in a vision task," in *Computer Vision—ECCV 2020 Workshops: Glasgow, UK, August 23–28, 2020, Proceedings, Part V 16*, Springer International Publishing, 2020, pp. 291–298.
- 9 E. K. Tokuda, Y. Lockerman, G. B. Ferreira, *et al.*, "A new approach for pedestrian density estimation using moving sensors and computer vision," *ACM Transactions on Spatial Algorithms and Systems (TSAS)*, vol. 6, no. 4, pp. 1–20, 2020.
- 10 L. W. X. Cejnog, R. M. Cesar, T. E. de Campos, and V. M. C. Elui, "Hand range of motion evaluation for rheumatoid arthritis patients," in *2019 14th IEEE International Conference on Automatic Face & Gesture Recognition (FG 2019)*, IEEE, 2019, pp. 1–5.
- 11 S. Li, I. B. Araujo, W. Ren, *et al.*, "Single image deraining: A comprehensive benchmark analysis," in *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition*, 2019, pp. 3838–3847.
- 12 E. Dazzi, T. de Campos, A. Hilton, and R. M. Cesar-Jr, "Scalable object instance recognition based on keygraph matching," *Pattern Recognition Letters*, vol. 114, pp. 53–62, 2018.
- 13 H. Morimitsu, I. Bloch, and R. M. Cesar-Jr, "Exploring structure for long-term tracking of multiple objects in sports videos," *Computer Vision and Image Understanding*, vol. 159, pp. 89–104, 2017.
- 14 T. Perciano, F. Tupin, R. Hirata Jr, and R. M. Cesar Jr, "A two-level markov random field for road network extraction and its application with optical, sar, and multitemporal data," *International Journal of Remote Sensing*, vol. 37, no. 16, pp. 3584–3610, 2016.
- 15 S. C. Pinto, P. Urbanová, and R. M. Cesar-Jr, "Two-dimensional wavelet analysis of supraorbital margins of the human skull for characterizing sexual dimorphism," *IEEE Transactions on Information Forensics and Security*, vol. 11, no. 7, pp. 1542–1548, 2016.
- 16 H. Morimitsu, R. M. Cesar-Jr, and I. Bloch, "Attributed graphs for tracking multiple objects in structured sports videos," in *Proceedings of the IEEE International Conference on Computer Vision Workshops (ICCV)*, 2015, pp. 34–42.
- 17 A. Noma, A. B. Graciano, R. M. Cesar Jr, L. A. Consularo, and I. Bloch, "Interactive image segmentation by matching attributed relational graphs," *Pattern Recognition*, vol. 45, no. 3, pp. 1159–1179, 2012.
- 18 L. da Fontoura Costa and R. M. Cesar, *Shape classification and analysis: theory and practice*. CRC, 2009.
- 19 J. P. Mena-Chalco and R. M. C. Junior, "Scriptlattes: An open-source knowledge extraction system from the lattes platform," *Journal of the Brazilian Computer Society*, vol. 15, pp. 31–39, 2009.
- 20 I. Bloch, O. Colliot, and R. M. Cesar, "On the ternary spatial relation" between," *IEEE Transactions on Systems, Man, and Cybernetics, Part B (Cybernetics)*, vol. 36, no. 2, pp. 312–327, 2006.
- 21 J. V. Soares, J. J. Leandro, R. M. Cesar, H. F. Jelinek, and M. J. Cree, "Retinal vessel segmentation using the 2-d gabor wavelet and supervised classification," *IEEE Transactions on Medical Imaging*, vol. 25, no. 9, pp. 1214–1222, 2006.
- 22 R. M. Cesar, E. Bengoetxea, I. Bloch, P. Larrañaga, *et al.*, "Inexact graph matching for model-based recognition: Evaluation and comparison of optimization algorithms," *Pattern Recognition*, vol. 38, no. 11, pp. 2099–2113, 2005.

Supervised students and researchers (concluded)

- 📖 **Post-docs:** 12
- 📖 **PhDs:** 19
- 📖 **MScs:** 23