Fernanda Alcântara Andaló, Ph.D.

updated on March 13, 2026

I am a scientist and AI leader working at the intersection of rigorous research and real-world deployment. At the LEGO Group, I lead AI research initiatives for digital products, defining technical direction and translating scientific advances into production-ready systems. Among several initiatives, I most recently served as AI Lead for the LEGO DUPLO Train, where I was responsible for the color tag detection system enabling real-time interaction. This work integrated machine learning algorithms with hardware constraints and product engineering to power a product launched worldwide. As Co-Founder and Chief Scientist at SciPet, I have coordinated scientific research in animal biometrics and applied AI for social good. We launched CrowdPet, an AI-powered platform that helps identify lost pets and generate public data to support animal welfare initiatives across multiple Brazilian cities. I remain connected to academia as a researcher affiliated with the Institute of Computing at Unicamp, where I have co-supervised Ph.D. candidates and contributed to research in biometrics and forensic science. I hold a Ph.D. in Computer Science from Unicamp, including a visiting research fellowship at Brown University. My background includes research positions at VISGRAF/IMPA, Samsung Research Institute Brazil, and postdoctoral collaboration with Motorola. I was an elected member of the IEEE Information Forensics and Security Technical Committee (2023-2025) and served as Chair of the IEEE Women in Engineering South Brazil Section (2016-2017).

Personal information

fernanda@andalo.net.br
fernanda.andalo.net.br
www.linkedin.com/in/feandalo
scholar.google.com/citations?user=yRP_ggoAAAAJ

Research Interests

Research Areas
Machine Learning and Visual Computing

Topics
pattern recognition, biometrics, deep learning, self-supervised learning, metric learning, multi-task learning, content-based image retrieval, multiview stereo, generative AI

Professional Experience

The LEGO Group — *Aug 2019 – Present*
Lead AI Engineer at Play Intelligence — *Billund, Denmark*
Lead AI projects, and R&D of Machine Learning methods for digital products (e.g., LEGO DUPLO Trains, LEGO VIDIYO, and LEGO Hidden Side).

University of Campinas (Unicamp) — *Mar 2019 – Present*
Accredited Researcher at the Institute of Computing — *Campinas, Brazil*
Research on machine learning and co-supervision of Ph.D. candidates.

SciPet Innovative Technology Solutions — *Campinas, Brazil*
Co-founder and CSO — *Sep 2016 – Present*
Coordination of research projects and research on applied machine learning methods for animal biometrics (e.g., CrowdPet).

University of Campinas (Unicamp) | Motorola Mobility — *Sep 2015 – Dec 2018*
Postdoctoral Researcher in partnership with Motorola Mobility — *Campinas, Brazil*
R&D of biometric methods for mobile devices.
- "BioLive: Multi-feature and open-set authentication techniques for mobile devices";
- "BioLive-360: open-set face recognition in 360° images".

University of Campinas (Unicamp) — *Mar 2017 – Jul 2017*
Lecturer in undergraduate courses at the Institute of Computing — *Campinas, Brazil*
Teaching "Algorithms and Computer Programming".

SAMSUNG Research Institute Brazil (SRBR) — *Apr 2014 – Sep 2015*
Researcher in Visual Computing — *Campinas, Brazil*
R&D of methods to generate highly compressible videos for computer vision tasks.

National Institute for Pure and Applied Mathematics (IMPA) *Dec 2012 – Apr 2014*
Postdoctoral Researcher at the VISGRAF Lab *Rio de Janeiro, Brazil*
Research on texture synthesis for 3D surfaces.

Higher Education Institute of Brasília (IESB) *Aug 2012 – Dec 2012*
Lecturer in undergraduate courses *Brasília, Brazil*
Teaching "Programming Logic" and "Topics in Computer Science: Image Processing".

University of Campinas (Unicamp) *Aug 2005 – Jul 2009*
Teaching Assistant in undergraduate courses at Institute of Computing *Campinas, Brazil*
Teaching "Data Structures".

University of Brasília (UnB) *Feb 2003 – May 2005*
Undergraduate researcher and System analyst *Brasília, Brazil*
- Research on 3D interfaces for controlling robots over the Internet;
- Development of a system for remote art education.

Education

Ph.D. in Computer Science *Mar 2007 – Nov 2012*
University of Campinas (Unicamp), Institute of Computing *Campinas, Brazil*
Project: "Computer Vision methods applicable to Forensic Science"
Advisor: Prof. Siome K. Goldenstein
My thesis presents three Computer Vision methods that can be applied in forensic investigations: one for photogrammetry, which allows measurement of objects heights in single images; a multiview stereo framework for the recovery of 3D footwear impressions; and a method for image reconstruction from a collection of small unordered fragments using a quadratic programming formulation.

Visiting Research Fellow *Dec 2010 – Dec 2011*
Brown University, School of Engineering *Providence, RI, USA*
Internship as part of my Ph.D. studies, supervised by Prof. Gabriel Taubin.

Master of Computer Science *Mar 2005 – Mar 2007*
University of Campinas (Unicamp), Institute of Computing *Campinas, Brazil*
Project: "Image descriptors based on Tensor Scale"
Advisors: Prof. Ricardo da S. Torres and Prof. Alexandre X. Falcão
My dissertation presents shape descriptors based on the Tensor Scale morphometric parameter for content-based image retrieval. We also introduce efficient algorithms for the computation of Tensor Scale based on the Image Foresting Transform (IFT).

Bachelor of Computer Science *Aug 1999 – Jun 2004*
University of Brasília (UnB), Computer Science Department *Brasília, Brazil*
Project: "Water simulation in a virtual world based on a Pieter Brüegel's painting"
Advisor: Prof. Aluizio Arcela

Publications

Journal articles

- G. Bertocco, F.A. Andaló, T.E. Boult, A. Rocha, "Large-Scale Fully-Unsupervised Re-Identification", *IEEE Transactions on Biometrics, Behavior, and Identity Science (TBIOM)*, 7(2), 156–169, 2025. doi:10.1109/TBIOM.2024.3446964
- J.P. Cardenuto, J. Yang, R. Padilha, R. Wan, D. Moreira, H. Li, S. Wang, F.A. Andaló, S. Marcel, A. Rocha, "The Age of Synthetic Realities: Challenges and Opportunities", *APSIPA Transactions on Signal and Information Processing*, 12(1), e44, 2023. doi:10.1561/116.00000138
- G. Bertocco, A. Theófilo, F.A. Andaló, A. Rocha, N. Jacobs, "Leveraging Ensembles and Self-Supervised Learning for Fully-Unsupervised Person Re-Identification and Text Authorship Attribution", *IEEE Transactions on Information Forensics and Security (TIFS)*, 18, 3876–3890, 2023. doi:10.1109/TIFS.2023.3289448
- R. Padilha, T. Salem, S. Workman, F.A. Andaló, A. Rocha, N. Jacobs, "Content-Aware Detection of Temporal Metadata Manipulation", *IEEE Transactions on Information Forensics and Security (TIFS)*, 17, 1316–1327, 2022. doi:10.1109/TIFS.2022.3159154
- W. Dias, F.A. Andaló, R. Padilha, G. Bertocco, W. Almeida, P. Costa, A. Rocha, "Cross-dataset emotion recognition from facial expressions through convolutional neural networks", *Journal of Visual Communication and Image Representation (JVCI)*, 82, 103395, 2022. doi:10.1016/j.jvcir.2021.103395
- G. Bertocco, F.A. Andaló, A. Rocha, "Unsupervised and self-adaptative techniques for cross-domain person re-identification", *IEEE Transactions on Information Forensics and Security (TIFS)*, 16, 4419–4434, 2021. doi:10.1109/TIFS.2021.3107157

- R. Padilha, F.A. Andaló, B. Lavi, L.A.M. Pereira, A. Rocha, "Temporally Sorting Images from Real-World Events", *Pattern Recognition Letters (PRL)*, 147, 212–219, 2021. doi:10.1016/j.patrec.2021.04.027
- R. Padilha, A. Theófilo, F.A. Andaló, D.A. Vega-Oliveros, J.P. Cardenuto, G. Bertocco, J. Nascimento, J. Yang, A. Rocha, "Artificial Intelligence and the challenges of Digital Forensic Science in the 21st century", *Estudos Avançados*, 35(101), 113–138, 2021 (In Portuguese). doi:10.1590/s0103-4014.2021.35101.009
- W.R. Almeida, F.A. Andaló, R. Padilha, G. Bertocco, W. Dias, R. da S. Torres, J. Wainer, A. Rocha, "Detecting face presentation attacks in mobile devices with a patch-based CNN and a sensor-aware loss function", *PLoS ONE*, 15(9), e0238058, 2020. doi:10.1371/journal.pone.0238058
- R. Padilha, F.A. Andaló, G. Bertocco, W.R. Almeida, W. Dias, T. Resek, R. da S. Torres, J. Wainer, A. Rocha, "Two-tiered face verification with low-memory footprint for mobile devices", *IET Biometrics*, 9(5), pp. 205–215, 2020. doi:10.1049/iet-bmt.2020.0031
- R. Padilha, C.M. Rodrigues, F.A. Andaló, G. Bertocco, Z. Dias, A. Rocha, "Forensic event analysis: from seemingly unrelated data to understanding", *IEEE Security & Privacy*, 18(6), pp. 23–32, 2020. doi:10.1109/MSEC.2020.3000446
- A. Ferreira, T. Carvalho, F.A. Andaló, A. Rocha, "Counteracting the contemporaneous proliferation of digital forgeries and fake news", *Anais da Academia Brasileira de Ciências (AABC)* 91(1), e20180149, 2019. doi:10.1590/0001-3765201820180149
- F.A. Andaló, V. Testoni, O.A.B. Penatti, "TWM: a framework for creating highly compressible videos targeted to computer vision tasks", *Pattern Recognition Letters (PRL)* 114(15), pp. 63–72, 2018. doi:10.1016/j.patrec.2017.08.025
- F.A. Andaló, G. Taubin, S. Goldenstein, "PSQP: Puzzle Solving by Quadratic Programming", *IEEE Transactions on Pattern Analysis and Machine Intelligence (PAMI)* 39(2), pp. 385–396, 2017. doi:10.1109/TPAMI.2016.2547394
- F.A. Andaló, G. Taubin, S. Goldenstein, "Efficient height measurements in single images based on the detection of vanishing points", *Computer Vision and Image Understanding (CVIU)* 138, pp. 51–60, 2015. doi:10.1016/j.cviu.2015.03.017
- F.A. Andaló, P.A.V. Miranda, R. da S. Torres, A.X. Falcão, "Shape feature extraction and description based on Tensor Scale", *Pattern Recognition (PR)* 43(1), pp. 26–36, 2010. doi:10.1016/j.patcog.2009.06.012
- D.B. Catani, L.M.A. Tenuta, F.A. Andaló, J.A. Cury, "Fluorosis in rats exposed to oscillating chronic fluoride doses", *Brazilian Dental Journal (BDJ)* 21(1), pp. 32–37, 2010. doi:10.1590/S0103-64402010000100005

Book chapters

- J. Yang, J. Nascimento, G. Bertocco, A. Theóphilo, R. Padilha, A. Soriano-Vargas, F.A. Andaló, A. Rocha., "AI Knows What You Did Last Summer: Applications in Digital Forensics", *Computer Vision: Challenges, Trends, and Opportunities*, pp. 82–108, Chapman and Hall/CRC, 2024. doi:10.1201/9781003328957
- R. Padilha, F.A. Andaló, L.A.M. Pereira, A. Rocha., "Unraveling the Notre Dame Cathedral fire in space and time: an X-coherence approach", *Crime Science and Digital Forensics: A Holistic View*, pp. 3–19, CRC Press, 2021. doi:10.1201/9780429322877
- L.A.M. Pereira, A. Pinto, F.A. Andaló, A. Ferreira, B. Lavi, A. Soriano-Vargas, M. Cirne, A. Rocha., "The rise of data-driven models in presentation attack detection", *Deep Biometrics*, pp. 289–311, Springer, 2020. doi:10.1007/978-3-030-32583-1_13

Refereed Conference and Workshop papers

- G. Bertocco, F.A. Andaló, T.E. Boult, A. Rocha, "Vision through distortions: Atmospheric Turbulence-and Clothing-invariant long-range recognition", In *IEEE International Workshop on Information Forensics and Security (WIFS)*, pp. 1–6, Rome, Italy, 2023. doi:10.1109/WIFS61860.2024.10810723
- K. Nguyen,..., G. Bertocco, F.A. Andaló, T.E. Boult, A. Rocha, et al., "AG-ReID 2023: Aerial-Ground Person Re-identification Challenge Results", In *International Joint Conference on Biometrics (IJCB)*, pp. 1–10, Ljubljana, Slovenia, 2023. doi:10.1109/IJCB57857.2023.10448780
- A. Guimarães, L. Neumann, F.A. Andaló, D.F. Aranha, E. Borin, "Homomorphic evaluation of large look-up tables for inference on human genome data in the cloud", In *International Symposium on Computer Architecture and High Performance Computing Workshops (SBAC-PADW)*, pp. 33–38, Bordeaux, France, 2022. doi:10.1109/SBAC-PADW56527.2022.00015
- A. Theófilo, R. Padilha, F.A. Andaló, A. Rocha, "Explainable Artificial Intelligence for Authorship Attribution on Social Media", In *IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, pp. 2909–2913, Singapore, 2022. doi:10.1109/ICASSP43922.2022.9746262
- R. Padilha, F.A. Andaló, A. Rocha, "Improving the chronological sorting of images through occlusion: A study on the Notre-Dame cathedral fire", In *IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, pp. 2972–2976, Barcelona, Spain, 2020. doi:10.1109/ICASSP40776.2020.9054120
- M. Cirne, F.A. Andaló, R. Dias, T. Resek, G. Bertocco, R. da S. Torres, A. Rocha, "Deep face verification for spherical images", In *IEEE International Conference on Image Processing (ICIP)*, pp. 3292–3296, Taipei, Taiwan, 2019. doi:10.1109/ICIP.2019.8803538
- R. Padilha, F.A. Andaló, R. da S. Torres, A. Rocha, J. Wainer, "Two-tiered facial verification for mobile devices", In *Workshop of Theses and Dissertations, Conference on Graphics, Patterns and Images (WTD/SIBGRAPI)*, Foz do Iguaçu, PR, Brazil, 2018.
- Z. Boulkenafet,..., W.R. Almeida, F.A. Andaló, R. Padilha, G. Bertocco, W. Dias, J. Wainer, R. da S. Torres, A. Rocha, et al., "A Competition on generalized software-based face presentation attack detection in mobile scenarios". In *International Joint Conference on Biometrics (IJCB)*, pp.688–696, Denver, CO, USA, 2017. doi:10.1109/btas.2017.8272758

- F.A. Andaló, O.A.B. Penatti, V. Testoni, "Transmitting what matters: task-oriented video composition and compression", In *Conference on Graphics, Patterns and Images (SIBGRAPI)*, pp. 72–79, São José dos Campos, SP, Brazil, 2016. doi:10.1109/SIBGRAPI.2016.019
- F.A. Andaló, S. Goldenstein, "Computer vision methods applicable to forensic science", In *VII Workshop of Theses and Dissertations, Conference on Graphics, Patterns, and Images (WTD/SIBGRAPI)*, pp. 136–144, Arequipa, Peru, 2013.
- F.A. Andaló, G. Taubin, S. Goldenstein, "Solving image puzzles with a simple Quadratic Programming formulation", In *Conference on Graphics, Patterns and Images (SIBGRAPI)*, pp. 63–70, Ouro Preto, MG, Brazil, 2012. doi:10.1109/SIBGRAPI.2012.18
- F.A. Andaló, F. Calakli, G. Taubin, S. Goldenstein, "Accurate 3D footwear impression recovery from photographs", In *International Conference on Imaging for Crime Detection and Prevention (ICDP)*, pp. 1–6, Kingston Upon Thames, UK, 2011. doi:10.1049/ic.2011.0121
- F.A. Andaló, G. Taubin, S. Goldenstein, "Detecting vanishing points by segment clustering on the projective plane for single-view photogrammetry", In *IEEE Workshop on Information Forensics and Security (WIFS)*, pp. 1–6, Seattle, WA, USA, 2010. doi:10.1109/WIFS.2010.5711453
- F.A. Andaló, G. Taubin, S. Goldenstein, "Vanishing point detection by segment clustering on the projective space", In *Workshop on Reconstruction and Modeling of Large-scale 3D Virtual Environments, European Conference on Computer Vision (RMLE/ECCV)*, Hersonissos, Greece, 2010. *Trends and Topics in Computer Vision: ECCV 2010 Workshops, Revised Selected Papers, Part II*, pp. 324–337, 2012. doi:10.1007/978-3-642-35740-4_25
- R. da S. Torres, J.A. Montoya-Zegarra, J.A. dos Santos, C.D. Ferreira, O.A.B. Penatti, F.A. Andaló, J.G.A. Almeida, "Image retrieval: challenges and new directions", In *Seminário de Software e Hardware (SEMISH)*, pp. 223–237, Belém, PA, Brazil, 2008 (In Portuguese).
- F.A. Andaló, R. da S. Torres, A.X. Falcão, "Shape descriptors based on Tensor Scale", In *Workshop of Theses and Dissertations, Brazilian Symposium on Computer Graphics and Image Processing (WTDCGPI/SIBGRAPI)*, pp. 136–144, Campo Grande, MS, Brazil, 2008.
- F.A. Andaló, P.A.V. Miranda, R. da S. Torres, A.X. Falcão, "A new shape descriptor based on Tensor Scale", In *International Symposium on Mathematical Morphology (ISMM)*, pp. 141–152, Rio de Janeiro, RJ, Brazil, 2007.
- F.A. Andaló, P.A.V. Miranda, R. da S. Torres, A.X. Falcão, "Detecting contour saliences using Tensor Scale", In *IEEE International Conference on Image Processing (ICIP)*, vol. 6, pp. 349–352, San Antonio, TX, USA, 2007. doi:10.1109/ICIP.2007.4379593

Patents

- F.A. Andaló, O.A.B. Penatti, V. Testoni, F.L. Koch, "System and method for context-based video composition and compression from objects with normalized spatial resolution", BR102015005929B1, 2021. Patent granted, filed by Samsung.
- F.A. Andaló, R. Padilha, W.R. Almeida, G. Bertocco, J. Wainer, R. da S. Torres, A. Rocha, "Multiple-tiered facial recognition", US10733279B2, 2020. Patent granted, filed by Motorola.
- F.A. Andaló, O.A.B. Penatti, V. Testoni, F.L. Koch, "System and method for video context-based composition and compression from normalized spatial resolution objects", US9699476B2, 2017. Patent granted, filed by Samsung.
- O. Volpato Filho, F.R. Piva, F.A. Andaló, A.F.M. de Oliveira, E.A. do Valle Jr., "Animal management system and identification method", WO2020047626A1, 2020. Patent pending, filed by SciPet.
- F.A. Andaló, O.A.B. Penatti, F.L. Koch, "System and method for analyzing multivariate data extracted from images captured in different views", BR102015005930A2, 2016. Patent pending, filed by Samsung.

Preprints and Technical reports

- J.P. Cardenuto, J. Yang, R. Padilha, R. Wan, D. Moreira, H. Li, S. Wang, F.A. Andaló, S. Marcel, A. Rocha, "The Age of Synthetic Realities: Challenges and Opportunities", *arXiv*, 2306.11503, 2023. arXiv.2306.11503
- G. Bertocco, A. Theófilo, F.A. Andaló, A. Rocha, "Leveraging Ensembles and Self-Supervised Learning for Fully-Unsupervised Person Re-Identification and Text Authorship Attribution", *arXiv*, 2202.03126, 2022. arXiv:2202.03126
- G. Bertocco, F.A. Andaló, A. Rocha, "Unsupervised and self-adaptative techniques for cross-domain person re-identification", *arXiv*, 2103.11520, 2021. arXiv:2103.11520
- R. Padilha, T. Salem, S. Workman, F.A. Andaló, A. Rocha, N. Jacobs, "Content-Based Detection of Temporal Metadata Manipulation", *arXiv*, 2103.04736, 2021. arXiv:2103.04736
- F.A. Andaló, G. Carneiro, G. Taubin, S. Goldenstein, L. Velho, "Automatic reconstruction of ancient Portuguese tile panels", A773/2016, *IMPA*, 2016.
- F.A. Andaló, L. Velho, "A graph cut approach to texture synthesis on 3D surfaces", TR-02-2014, *VISGRAF, IMPA*, 2014.

Public datasets

- R. Padilha, F.A. Andaló, B. Lavi, L.A.M. Pereira, A. Rocha, "Notre-Dame Cathedral Fire Dataset", 2020. doi:10.6084/m9.figshare.11787333.v2
- W.R. Almeida, F.A. Andaló, R. Padilha, G. Bertocco, W. Dias, R. da S. Torres, J. Wainer, A. Rocha, "RECOD Mobile Presentation-Attack Dataset (RECOD-MPAD)", 2020. doi:10.5281/zenodo.3749309
- M. Cirne, F.A. Andaló, R. Dias, "MOT-360 Face", 2019. doi:10.6084/m9.figshare.8120747.v3
- R. Padilha, F.A. Andaló, A. Rocha, "RECOD Selfie Dataset (RCD-Selfie)", 2017. doi:10.6084/m9.figshare.5427142.v3

Honors & Awards

- 3RD PLACE in the Aerial-Ground Person ReID Challenge, International Joint Conference on Biometrics (IJCB), 2023.
- Elected Member of the IEEE Information Forensics and Security Technical Committee (IFS-TC), 2023-2025.
- Unicamp Inventors Award, "Licensed Technology" category, 2019.
- 1ST PLACE in the Unicamp Ventures Entrepreneur Award, "Social Impact case" category (awarded to SciPet), 2018.
- 1ST PLACE in the INOVA Unicamp Award for Innovation Initiation, as Gabriel Bertocco's co-advisor, 2017.
- FINALIST in the INOVA Unicamp Award for Innovation Initiation, as Victor Capone's advisor, 2017.
- 4TH PLACE in the Competition on generalized face presentation attack detection in mobile authentication scenarios, International Joint Conference on Biometrics (IJCB), 2017.
- TOP REVIEWER for Computer Science (top 1%), University of Campinas (1st place), and Brazil (5th place), Publons Peer Review Awards, 2017.
- Elected Chair of the IEEE Women in Engineering (WIE) South Brazil Section, 2016-2017.
- 2ND PLACE in the Face Recognition Challenge, 13th IAPR/IEEE/Eurasip Int.l Summer school for advanced studies on biometrics: Biometrics, Forensic Science and the Quest for Identity, 2016.
- BEST POSTER AWARD in the 4th International Conference on Imaging for Crime Detection and Prevention (ICDP), 2011.
- HONORABLE MENTION for work published at the 27th Annual Meeting of the SBPqO, 2010.
- 1ST PLACE in the Workshop of Thesis and Dissertations in Computer Graphics, Image Processing and Computer Vision. XXI Brazilian Symposium on Computer Graphics and Image Processing (SIBGRAPI), 2008.
- Motorola Mobility Post-doctoral Scholarship, 2015-2018.
- Coordination for the Improvement of Higher Education Personnel (CAPES) Post-doctoral Scholarship, 2012-2014.
- National Counsel of Technological and Scientific Development (CNPq) Visiting Ph.D. Scholarship, 2010-2011.
- National Counsel of Technological and Scientific Development (CNPq) Ph.D. Scholarship, 2008-2010.

Teaching Experience

Unicamp — *Campinas, Brazil*
Corporate course for Motorola Mobility: Complex Data Mining, Deep Learning module. — *2018*
Extension course: Complex Data Mining, Deep Learning module. — *2018*
Undergraduate course: Algorithms and Computer Programming. — *2017*
Undergraduate course: Data Structures, as a teaching assistant. — *2009*

IESB — *Brasília, Brazil*
Undergraduate courses: Programming Logic and Image Processing. — *2012*

Talks, Presentations & Interviews

Hipsters: Fora de Controle — *Online*
Hipsters: Fora de Controle # 60 (in Portuguese) — *2024*

Let's Data Podcast — *Online*
Lets Data Podcast # 003 Fernanda Andaló (in Portuguese) — *2021*

LEGO Tech Summit — *Billund, Denmark*
- The Open Set problem in Machine Learning and a case study in image classification for Hidden Side — *2020*
- QA using Image Recognition (with Renan Chagas and Teofilo Monteiro) — *2019*

GDG DataFest — *Campinas, Brazil*
Computer Vision with Deep Learning: from academia to industry — *2018*

IC, Unicamp — *Campinas, Brazil*
Image Puzzle: Methods, Applications, and Challenges — *2018*

Motorola Mobility — *Jaguariúna, Brazil*
Emerging Technologies Series in Deep Learning: fundamentals of Deep Learning — *2017*

Motorola Research Summit — *Campinas, Brazil*
BioLive: Authentication for mobile devices — *2015~2018*

SIBGRAPI — *Arequipa, Peru*
Computer Vision methods applicable to Forensic Science (poster) — *2013*

SIBGRAPI — *Ouro Preto, Brazil*
Solving image puzzles with a simple Quadratic Programming formulation — *2012*

ICDP — *London, UK*
Accurate 3D footwear impression recovery from photographs (poster) — *2012*

ECCV *Heraklion, Greece*
Vanishing Point detection by segment clustering on the projective space *2010*

SIBGRAPI *Campo Grande, Brazil*
Shape descriptors based on Tensor Scale *2008*

ICIP *San Antonio, TX, USA*
Detecting contour saliences using Tensor Scale (poster) *2007*

ISMM *Rio de Janeiro, Brazil*
A new shape descriptor based on Tensor Scale *2007*

Academic Service

Journal reviewer

IEEE
Transactions on Image Processing (TIP), Transactions on Information Forensics and Security (T-IFS), Transactions on Multimedia (MM), Signal Processing Letters (SPL), Transactions on Pattern Analysis and Machine Intelligence (PAMI), IEEE Systems, Security & Privacy

Elsevier
Computer Vision and Image Understanding (CVIU), Graphical Models (GMOD), Neurocomputing, Pattern Recognition (PR), Digital Investigation, Pattern Recognition Letters (PRL), Journal of Visual Communication and Image Representation (JVCI), Computers & Graphics

Others
Computer Graphics Forum, Journal of Communications and Information Systems (JCIS), Revista Brasileira de Criminalística (RBC)

Conference committee and reviewer

CVPR, ECCV, IWBF, ICASSP (Area Chair)	*2026*
ICCV, ICIP, BMVC, IJCB, ICASSP	*2025*
ECCV, WACV, ICASSP, IJCB, WIFS	*2024*
ICASSP, BMVC, SIBGRAPI, CAI, IJCB (Meta-reviewer)	*2023*
WACV, ICPR, BMVC	*2022*
CVPR, ICCV, BMVC, SIBGRAPI	*2021*
BMVC, ICPR, SIBGRAPI	*2020*
ICASSP, GlobalSIP, SIBGRAPI	*2019*
ICASSP, GlobalSIP, SIBGRAPI, SBSeg	*2018*
ICASSP, MFSec Workshop@ICMR, SIBGRAPI, SBrT, ACNS, ERI-MT	*2017*
ICASSP, COMPSULMT, ERI-MT	*2016*
SIBGRAPI	*2015*
VHAR Workshop@SIBGRAPI (Organizer)	*2014*
COMPSULMT	*2013*

Supervisions

- Emilie Leonora Wenner and Benedicte Maul Vilhjálmsson. "Multi-Modal Representation Learning with LEGO Minifigures: Constructing a Shared Embedding Space for Segmented Human-to-Component Mapping", 2026–2026. Master in Computer Science and Engineering - Technical University of Denmark (DTU), as external supervisor. Collaboration with the LEGO Group.
- Luis Miguel Ferreira Freire. "Exploring different approaches to customize LLMs for text-to-code generation", 2025–2025. Master in Computer Science and Engineering - Technical University of Denmark (DTU), as external supervisor. Collaboration with the LEGO Group.
- Gabriel Bertocco. "Self-supervised Learning for Fully Unsupervised Re-identification in Real-World Applications", 2021–2024. Ph.D. in Computer Science - University of Campinas (Unicamp), as co-supervisor. Scholarship: FAPESP.
- Rafael Soares Padilha. "Learning visual clues of the passage of time", 2019–2022. Ph.D. in Computer Science - Unicamp, as co-supervisor. Scholarship: FAPESP.
- Camila Moura. "CrowdPet: Automatic identification of animals in images", 2019–2020. Technical training in Computer Science - SciPet, as supervisor. Scholarship: SciPet/FAPESP .
- Felipe Capiteli. "CrowdPet: Automatic identification of animals in images", 2019–2020. Technical training in Computer Science - SciPet, as supervisor. Scholarship: SciPet/FAPESP.

- Giulianna Bosco. “CrowdPet: Automatic identification of animals in images”, 2018–2020. Technical training in Computer Science - SciPet, as supervisor. Scholarship: SciPet/FAPESP.
- Gabriel Bertocco. “CrowdPet: Automatic identification of animals in images”, 2019–2019. Undergraduate research in Computer Science - Unicamp, as supervisor. Scholarship: SciPet.
- Eduardo Rocha de Andrade. “CrowdPet: Automatic identification of animals in images”, 2018–2019. Technical training in Computer Science - SciPet, as supervisor. Scholarship: SciPet/FAPESP.
- Gabriel Bertocco. “Automatic age range estimation on mobile devices”, 2015–2018. Undergraduate research in Computer Science - Unicamp, as co-supervisor. Scholarship: Motorola.
- Waldir Rodrigues de Almeida. “Data-driven face presentation-attack detection in mobile devices”, 2015–2018. Master in Computer Science - Unicamp, as co-supervisor. Scholarship: Motorola.
- Rafael Soares Padilha. “Two-tiered facial verification for mobile devices”, 2015–2017. Master in Computer Science - Unicamp, as co-supervisor. Scholarship: Motorola.
- Victor Gasparotto Capone. “CrowdPet: Computer Vision applied to the identification of lost animals”, 2017–2017. Undergraduate research in Computer Science - Unicamp, as supervisor. Scholarship: SciPet/FAPESP.
- Carlos Figueiredo. “CrowdPet: Computer Vision applied to the identification of lost animals”, 2017–2017. Undergraduate research in Computer Science - Unicamp, as supervisor. Scholarship: SciPet/FAPESP.
- João Gabriel Vasconcelos. “DESC - A tool for comparing image descriptors”, 2012–2012. Undergraduate research in Computer Engineering - Higher Education Institute of Brasília (IESB), as supervisor.

Examining committee

- Rafael Soares Padilha. “Learning visual clues of the passage of time”, 2022. Ph.D. in Computer Science - Unicamp.
- Giuliano Roberto Pinheiro. “Detection and alignment of video sequences for event reconstruction”, 2019. Qualifying exam - Master in Computer Science - Unicamp.
- Pedro Ribeiro Mendes Júnior. “Open-set recognition for different classifiers”, 2018. Ph.D. in Computer Science - Unicamp.
- Jose Luis Flores Campana. “Comparative study of techniques for the detection and recognition of texts in multimedia objects”, 2018. Qualifying exam - Master in Computer Science - Unicamp.
- Luís Gustavo Lorgus Decker. “Comparative study of recommendation systems based on Deep Learning”, 2018. Qualifying exam - Master in Computer Science - Unicamp.
- Helena de Almeida Maia. “Multiple stream deep neural network for human action recognition”, 2018. Qualifying Exam - Ph.D. in Computer Science - Unicamp.
- Javier Alvaro Vargas Muñoz. “Clustering-based graphs for large scale approximate nearest neighbor search”, 2017. Qualifying exam - Ph.D. in Computer Science - Unicamp.
- Hilário Seibel Júnior. “Super-resolution in low-quality videos for forensics, surveillance, and mobile applications”, 2017. Ph.D. in Computer Science - Unicamp.
- João Paulo Pereira Martin. “Localization of sensitive content using temporal information and Deep Learning techniques”, 2017. Qualifying exam - Master in Computer Science - Unicamp.
- Geise Kelly da Silva Santos. “Continuous gait authentication techniques for mobile devices”, 2017. Master in Computer Science - Unicamp.
- Lucas Oliveira David, “Connoisseur: provenance analysis in paintings”, 2016. Qualifying exam - Master in Computer Science - Unicamp.
- Allan da Silva Pinto, “ Spoofing detection in biometric systems ”, 2016. Qualifying exam - Ph.D. in Computer Science - Unicamp.
- Manuel Alberto Córdova Neira, “Data fusion techniques for open set recognition problems”, 2015. Master in Computer Science - Unicamp.
- Felipe Souza Barros Damasceno, “Detection of ferromagnetic materials using multilayer perceptron RNA”, 2012. Major in Electrical Engineering - IESB.

Technical skills

Programming, scripting and markup languages
Python, C, C++, Java, Matlab, Bash, LaTeX

Libraries and APIs
Tensorflow/Keras, PyTorch, Scikit-learn, OpenCV, Pandas

Tools
Docker, Git

Languages

Portuguese
Native

English
Professional proficiency