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Education


- 2005-2010 **Ph.D.** in Computer Science, University of Maryland, College Park (Advisor: Dr. Larry S. Davis)
- 2003-2005 **M.Sc.** in Computer Science, Federal University of Parana, Brazil (Advisor: Dr. Helio Pedrini)
- 1999-2003 **B.Sc.** in Computer Science, Federal University of Parana, Brazil

Research & Professional Experience


- 2012- **Associate Professor** at the Federal University of Minas Gerais in the Computer Science Department
- 2010-2011 **Postdoctoral Researcher** at the University of Campinas in the Institute of Computing (Supervisor: Prof. Helio Pedrini)
- 2005-2010 **Research Assistant** at the University of Maryland, Department of Computer Science (Supervisor: Prof. Larry S. Davis)




Publications

Book










- 2007 | Pedrini, H. and Schwartz, W. R. (2007). *Analise de Imagens Digitais: Principios, Algoritmos e Aplicacoes*. Editora Thomson Learning. **(selected among 10 finalists for the Jabuti Award 2008, category Exact Sciences, Technology and Informatics) (in Portuguese)** 

Book Chapters
















- 2014 | Schwartz, W. R. (2014). *Computer Vision: A Reference Guide*, chapter Appearance-Based Human Detection, pages 36–38. Springer US. 

- 2011 Gopalan, R., Schwartz, W. R., Chellappa, R., and Srivastava, A. (2011). *A Guide to Visual Analysis of Humans: Looking at People*, chapter Face Detection, pages 71–90. Springer. 
- 2005 Minetto, R., da Silva, R. D., Schwartz, W. R., and Pedrini, H. (2005a). *Séries em Ciências Geodésicas*, volume 5, chapter Abordagem Espectral para Segmentação de Imagens Baseada em Transformadas Wavelet e de Fourier, pages 204–218. Imprensa Universitária, Curitiba-PR (in Portuguese). 
- 2001 Schwartz, W. R. and Pedrini, H. (2001). *Séries em Ciências Geodésicas*, volume 1, chapter Análise de Visibilidade em Modelos Digitais de Terrenos, pages 333–345. Imprensa Universitária, Curitiba-PR (in Portuguese). 













Journals


- 2019 Prates, R. and Schwartz, W. R. (2019). Kernel cross-view collaborative representation based classification for person re-identification. *Journal of Visual Communication and Image Representation*, 58:304–315. 
- Caetano, C., Melo, V. H., Bremond, F., dos Santos, J. A., and Schwartz, W. R. (2019b). Magnitude-orientation stream network and depth information applied to activity recognition. *Journal of Visual Communication and Image Representation*, 63:1–12. 
- Laroca, R., Barroso, V., Diniz, M. A., Goncalves, G., Schwartz, W. R., and Menotti, D. (2019). Convolutional neural networks for automatic meter reading. *Journal of Electronic Imaging*, 28(1):1–14. 
- Nogueira, K., Mura, D. M., Chanussot, F. J., Schwartz, W. R., and dos Santos, J. (2019). Dynamic Multicontext Segmentation of Remote Sensing Images Based on Convolutional Networks. *IEEE Transactions on Geoscience and Remote Sensing*, 57(10):7503–7520. 
- 2018 da Silva Luz, E. J., Moreira, G. J. P., Oliveira, L. S., Schwartz, W. R., and Menotti, D. (2018). Learning Deep Off-the-Person Heart Biometrics Representations. *IEEE Transactions on Information Forensics and Security*, 13(5):1258–1270. 
- Jordao, A., Torres, L. A. B., and Schwartz, W. R. (2018b). Novel Approaches to Human Activity Recognition based on Accelerometer Data. *Signal, Image and Video Processing*, 12(7):1387–1394. 
- Prates, R. and Schwartz, W. R. (2018). Kernel Multiblock Partial Least Squares for a Scalable and Multicamera Person Reidentification System. *Journal of Electronic Imaging*, 27(3):1–33. 
- 2017 Colque, R. M., Caetano, C., Toledo, M., and Schwartz, W. R. (2017). Histograms of optical flow orientation and magnitude and entropy to detect anomalous events in videos. *IEEE Transactions on Circuits and Systems for Video Technology*, 27(3):673–682. 
- 2016 da S. Luz, E. J., Schwartz, W. R., Chavez, G. C., and Menotti, D. (2016). Ecg-based heart-beat classification for arrhythmia detection: A survey. *Computer Methods and Programs in Biomedicine*, 127:144–164. 


- Rodrigues, M. T. A. N., de Mesquita, D. B., Nascimento, E. R., and Schwartz, W. R. (2016). Change detection based on feature invariant to monotonic transforms and spatially constrained matching. *Journal of Electronic Imaging*, 25(1):1–10. [↗](#)
- Caetano, C., Avila, S., Schwartz, W. R., Guimaraes, S. J. F., and de A. Araujo, A. (2016a). A mid-level video representation based on binary descriptors: A case study for pornography detection. *Neurocomputing*, 213:102–114. [↗](#)
- dos Santos Jr., C. E., Kijak, E., Gravier, G., and Schwartz, W. R. (2016). Partial least squares for face hashing. *Neurocomputing*, 213:34–47. [↗](#)
- Jr., A. C. N. and Schwartz, W. R. (2016). A scalable and flexible framework for smart video surveillance. *Computer Vision and Image Understanding*, 144(C):258–275. [↗](#)
- Goncalves, G. R., da Silva, S. P. G., Menotti, D., and Schwartz, W. R. (2016a). Benchmark for license plate character segmentation. *Journal of Electronic Imaging*, 25(5):1–11. [↗](#)
- 2015 Paiva, J., Schwartz, W. R., Pedrini, H., and Minghim, R. (2015). An Approach to Supporting Incremental Visual Data Classification. *IEEE Transactions on Visualization and Computer Graphics*, 21(1):4–17. [↗](#)
- de Paulo Carlos, G., Pedrini, H., and Schwartz, W. R. (2015). Classification schemes based on partial least squares for face identification. *Journal of Visual Communication and Image Representation*, 32:170–179. [↗](#)
- Hu, S., Choi, J., Chan, A. L., and Schwartz, W. R. (2015). Thermal-to-visible Face Recognition using Partial Least Squares. *Journal of the Optical Society of America A*, 32(3):431–442. [↗](#)
- da Silva, R. D., Schwartz, W. R., Pedrini, H., Pulido, J., and Hamann, B. (2015). A Topology-Based Approach to Computing Neighborhood-of-Interest Points Using the Morse Complex. *Journal of Visual Communication and Image Representation*, 30:299–311. [↗](#)
- Pinto, A., Pedrini, H., Schwartz, W. R., and A, R. (2015a). Face spoofing detection through visual codebooks of spectral temporal cubes. *IEEE Transactions on Image Processing*, 24(12):4726–4740. [↗](#)
- Pinto, A., Schwartz, W. R., Pedrini, H., and Rocha, A. R. (2015b). Using Visual Rhythms for Detecting Video-Based Facial Spoof Attacks. *IEEE Transactions on Information Forensics and Security*, 10(5):1025–1038. [↗](#)
- Menotti, D., Chiachia, G., Pinto, A., Schwartz, W. R., Pedrini, H., Falcao, A. X., and Rocha, A. (2015). Deep Representations for Iris, Face, and Fingerprint Spoofing Detection. *IEEE Transactions on Information Forensics and Security*, 10(4):864–879. [↗](#)
- 2014 Luz, E. J., Menotti, D., and Schwartz, W. R. (2014). Evaluating the use of ECG Signal in Low Frequencies as a Biometry. *Expert Systems with Applications*, 31:2309–2315. [↗](#)
- Valenzuela, R. E. G., Schwartz, W. R., and Pedrini, H. (2014). Linear Dimensionality Reduction Applied to Scale Invariant Feature Transformation and Speeded up Robust Feature Descriptors. *Journal of Electronic Imaging*, 23(3):033017. [↗](#)


- 2013 Prates, R. F., Camara-Chavez, G., Schwartz, W. R., and Menotti, D. (2013). Brazilian License Plate Detection Using Histogram of Oriented Gradients and Sliding Windows. *International Journal of Computer Science and Information Technology*, 5:39–52. 
- Junior, C. S. and Schwartz, W. R. (2013). Detecção de Indivíduos não Registrados em Galerias de Faces. *Revista Eletrônica de Iniciação Científica*, 13:1–15 (in Portuguese). 
- Schwartz, W. R., de Melo, V. H. C., Pedrini, H., and Davis, L. S. (2013). A Data-Driven Detection Optimization Framework. *Neurocomputing*, 104:35–49. 
- de Siqueira, F. R., Schwartz, W. R., and Pedrini, H. (2013). Multi-Scale Gray Level Co-Occurrence Matrices for Texture Description. *Neurocomputing*, 120:336–345. 
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- de Lima, V., Schwartz, W. R., and Pedrini, H. (2013). 3D Searchless Fractal Video Encoding at Low Bit Rates. *Journal of Mathematical Imaging and Vision*, 45(3):239–250. 
- da Silva, R. D., Minetto, R., Schwartz, W. R., and Pedrini, H. (2013). Adaptive Edge-Preserving Image Denoising Using Wavelet Transforms. *Pattern Analysis and Applications*, 16(4):567–580. 
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- Schwartz, W. R. and Pedrini, H. (2012). Evaluation of Feature Descriptors for Texture Classification. *Journal of Electronic Imaging*, 21(2):023016–1–023016–17. 
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- da Silva, R. D., Schwartz, W. R., Minghim, R., and Pedrini, H. (2011a). Construction of Triangle Meshes from Images at Multiple Scales. *Chilean Journal of Statistics*, 2(2):61–68. 
- da Silva, R. D., Schwartz, W. R., and Pedrini, H. (2011b). Image Segmentation Based on Wavelet Feature Descriptor and Dimensionality Reduction Applied to Remote Sensing. *Chilean Journal of Statistics*, 2(2):51–60. 
- Schwartz, W. R. (2011). Human Detection Based on Large Feature Sets Using Graphics Processing Units. *Informatica*, 35(4):473–479. 
- 2001 Pedrini, H. and Schwartz, W. R. (2001a). Detection of Topographic Characteristics in Digital Images Approximated by Triangular Surfaces. *Image Processing and Communications Journal*, 7(3-4):25–34. 


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- 2019
- Goncalves, G. R., Diniz, M. A., Laroca, R., Menotti, D., and Schwartz, W. R. (2019). Multi-Task Learning for Low-Resolution License Plate Recognition. In *Iberoamerican Congress on Pattern Recognition (CIARP)*, pages 1–10. 
- Vareto, R. H., Diniz, M. A., and Schwartz, W. R. (2019). Face Spoofing Detection on Low-Power Devices using Embeddings with Spatial and Frequency-based Descriptors. In *Iberoamerican Congress on Pattern Recognition (CIARP)*, pages 1–10. 
- de Lima, V. C. and Schwartz, W. R. (2019). Gait Recognition using Pose Estimation and Signal Processing. In *Iberoamerican Congress on Pattern Recognition (CIARP)*, pages 1–10. 
- Jordao, A., Kloss, R., Yamada, F., and Schwartz, W. R. (2019). Pruning deep networks using partial least squares. In *British Machine Vision Conference (BMVC) Workshops*, pages 1–9. 
- Bastos, I., de Melo, V. H. C., and Schwartz, W. R. (2019). Multi-Loss Recurrent Residual Networks for Gesture Detection and Recognition. In *Conference on Graphic, Patterns and Images (SIBGRAPI)*, pages 1–8. 
- Mendes, G., Paiva, J. G., and Schwartz, W. R. (2019). Point-placement techniques and Temporal Self-similarity Maps for Visual Analysis of Surveillance Videos. In *International Conference Information Visualisation*, pages 1–8. 
- Caetano, C., Bremond, F., and Schwartz, W. R. (2019a). Skeleton Image Representation for 3D Action Recognition based on Tree Structure and Reference Joints. In *Conference on Graphic, Patterns and Images (SIBGRAPI)*, pages 1–8. 
- Caetano, C., Souza, J., Bremond, F., Santos, J., and Schwartz, W. R. (2019c). SkeleMotion: A New Representation of Skeleton Joint Sequences based on Motion Information for 3D Action Recognition. In *16th International Conference on Advanced Video and Signal-based Surveillance (AVSS)*, pages 1–6. 
- 2018
- Nazare, A. C., Costa, F., and Schwartz, W. R. (2018). Content-Based Multi-Camera Video Alignment using Accelerometer Data. In *Advanced Video and Signal Based Surveillance (AVSS), 2018 15th IEEE International Conference on*, pages 1–6. 
- Reis, R. O., Dias, I. H., and Schwartz, W. R. (2018). Neural Network Control for Active Cameras using Master-slave Setup. In *International Conference on Advanced Video and Signal-based Surveillance (AVSS)*, pages 1–6. 
- Bastos, I. L. O., Melo, V. H. C., Gonçalves, G. R., and Schwartz, W. R. (2018). MORA: A Generative Approach to Extract Spatiotemporal Information Applied to Gesture Recognition. In *15th International Conference on Advanced Video and Signal-based Surveillance (AVSS)*, pages 1–6. 
- Kloss, R. B., Jordao, A., and Schwartz, W. R. (2018). Face Verification: Strategies for Employing Deep Models. In *2018 13th IEEE International Conference on Automatic Face Gesture Recognition (FG 2018)*, pages 258–262. 


Sena, J., Santos, J. B., and Schwartz, W. R. (2018). Multiscale DCNN Ensemble Applied to Human Activity Recognition Based on Wearable Sensors. In *26th European Signal Processing Conference (EUSIPCO)*, pages 1202–1206. 


Sales, A. L. C., Vareto, R. H., Schwartz, W. R., and Chavez, G. C. (2018). Single-Shot Person Re-Identification Combining Similarity Metrics and Support Vectors. In *Conference on Graphic, Patterns and Images (SIBGRAPI)*, pages 1–8. 


de Melo, V. H. C., Santos, J. B., Caetano, C., Sena, J., Penatti, O. A. B., and Schwartz, W. R. (2018). Object-based Temporal Segment Relational Network for Activity Recognition. In *Conference on Graphic, Patterns and Images (SIBGRAPI)*, pages 1–8. 


Gonçalves, G. R., Diniz, M. A., Laroca, R., Menotti, D., and Schwartz, W. R. (2018). Real-time Automatic License Plate Recognition Through Deep Multi-Task Networks. In *Conference on Graphic, Patterns and Images (SIBGRAPI)*, pages 1–8. 


Laroca, R., Severo, E., Zanlorensi, L. A., Oliveira, L. S., Gonçalves, G. R., Schwartz, W. R., and Menotti, D. (2018). A Robust Real-Time Automatic License Plate Recognition Based on the YOLO Detector. In *2018 International Joint Conference on Neural Networks (IJCNN)*, pages 1–10. 


Caetano, C., dos Santos, J. A., and Schwartz, W. R. (2018). Statistical Measures from Co-occurrence of Codewords for Action Recognition. In *13th International Joint Conference on Computer Vision, Imaging and Computer Graphics Theory and Applications (VISAPP)*, pages 301–308. 














Colque, R. M., Caetano, C., de Melo, V. C., Chavez, G. C., and Schwartz, W. R. (2018). Novel Anomalous Event Detection based on Human-object Interactions. In *13th International Joint Conference on Computer Vision, Imaging and Computer Graphics Theory and Applications (VISAPP)*, pages 293–300. 














Jordao, A., Kloss, R., and Schwartz, W. R. (2018a). Latent HyperNet: Exploring the Layers of Convolutional Neural Networks. In *2018 International Joint Conference on Neural Networks (IJCNN)*, pages 1–7. 


Ferreira, G. S., Padua, F. L. C., Schwartz, W. R., and Rodrigues, M. T. A. N. (2018). Mapping Sports Interest with Social Network. In *XV Encontro Nacional de Inteligencia Artificial e Computacional (ENIAC)*, pages 1–12. 


2017 Vareto, R., Silva, S., Costa, F., and Schwartz, W. R. (2017a). Towards Open-Set Face Recognition using Hashing Functions. In *IEEE International Joint Conference on Biometrics (IJCB)*, pages 634–641. IAPR/IEEE Best Paper Runner-up Award. **(IAPR/IEEE Best Paper Runner-up Award)** 


Caetano, C., de Melo, V. H. C., dos Santos, J. A., and Schwartz, W. R. (2017). Activity Recognition based on a Magnitude-Orientation Stream Network. In *Conference on Graphics, Patterns and Images (SIBGRAPI)*, pages 47–54. Best Computer Vision/Image Processing/Pattern Recognition Main Track Paper Award. **(Best Computer Vision/Image Processing/Pattern Recognition Main Track Paper Award)** 


- Vareto, R. H., da Silva, S. S., de Oliveira Costa, F., and Schwartz, W. R. (2017b). Face Verification based on Relational Disparity Features and Partial Least Squares Models. In *Conference on Graphics, Patterns and Images (SIBGRAPI)*, pages 209–215. 
- Bastos, I. L. O. and Schwartz, W. R. (2017). Assigning Relative Importance to Scene Elements. In *Conference on Graphics, Patterns and Images (SIBGRAPI)*, pages 413–420. 
- Santos, A. B., d. A. Araujo, A., dos Santos, J. A., Schwartz, W. R., and Menotti, D. (2017). Combination techniques for hyperspectral image interpretation. In *IEEE International Geoscience and Remote Sensing Symposium (IGARSS)*, pages 3648–3651. 
- de Lima, V., Moreira¹, T. P., Pedrini¹, H., and Schwartz, W. R. (2017). Fast Scalable Coding Based on a 3D Low Bit Rate Fractal Video Encoder. In *12th International Conference on Computer Vision Theory and Applications (VISAPP)*, pages 24–33. 
- Bastos, I. L. O., Soares, L. R., and Schwartz, W. R. (2017). Pyramidal Zernike Over Time: A spatiotemporal feature descriptor based on Zernike Moments. In *Iberoamerican Congress on Pattern Recognition (CIARP 2017)*, pages 77–85. 
- Peixoto, S., Goncalves, G., Bianchi, A., Brito, A. D. S., Schwartz, W. R., and Menotti, D. (2017). Noisy Character Recognition using Deep Convolutional Neural Networks. In *Iberoamerican Congress on Pattern Recognition (CIARP 2017)*, pages 499–507. 
- Kloss, R. B., Jordão, A., and Schwartz, W. R. (2017). Boosted Projection: An Ensemble of Transformation Models. In *22nd Iberoamerican Congress on Pattern Recognition (CIARP)*, pages 331–338. 
- 2016 Prates, R., Oliveira, M., and Schwartz, W. R. (2016). Kernel Partial Least Squares for Person Re-Identification. In *13th International Conference on Advanced Video and Signal-Based Surveillance (AVSS)*, pages 249–255. 
- de C. Prates, R. F., Dutra, C. R. S., and Schwartz, W. R. (2016). Predominant Color Name Indexing Structure for Person Re-Identification. In *IEEE International Conference on Image Processing (ICIP)*, pages 779–783. 
- Correia, A. J. L. and Schwartz, W. R. (2016). Oblique Random Forest based on Partial Least Squares Applied to Pedestrian Detection. In *IEEE International Conference on Image Processing (ICIP)*, pages 2931–2935. 
- Correia, A. J. L., de Souza Sena, J., and Schwartz, W. R. (2016). A Late Fusion Approach to Combine Multiple Pedestrian Detectors. In *23rd International Conference on Pattern Recognition (ICPR)*, pages 4250–4255. 
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- Vareto, R. H., Costa, F., and Schwartz, W. R. (2016). Face identification in large galleries. In *Workshop on Face Processing Applications*, pages 1–4. 
- 2015 Jr., C. E. S., Kijak, E., Gravier, G., and Schwartz, W. R. (2015b). Learning to hash faces using large feature vectors. In *Content-Based Multimedia Indexing (CBMI), 13th International Workshop on*, pages 1–6. 
- Kloss, R. B., Silva, S., Cirne, M. V. M., Pedrini, H., and Schwartz, W. R. (2015). Partial least squares image clustering. In *Conference on Graphics, Patterns and Images (SIBGRAPI)*, pages 41–48. 
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- Peixoto, S., Gonçalves, G. R., Camara-Chavez, G., Schwartz, W. R., and Gomes, D. M. (2015). Brazilian License Plate Character Recognition using Deep Learning. In *Workshop em Visao Computacional (WVC)*, pages 1–5. 
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- Rodrigues, M. T. A., Balbino, D., Nascimento, E. R., and Schwartz, W. R. (2015). A Non-Parametric Approach to Detect Changes in Aerial Images. In *14th Iberoamerican Congress on Pattern Recognition (CIARP)*, pages 116–124. 
- de C. Prates, R. F. and Schwartz, W. R. (2015b). CBRA: Color-Based Ranking Aggregation for Person Re-Identification. In *IEEE International Conference on Image Processing (ICIP)*, pages 1975–1979. 

Santos, A. B., Araujo, A. A., Schwartz, W. R., and Menotti, D. (2015). Hyperspectral Image Interpretation based on Partial Least Squares. In *IEEE International Conference on Image Processing (ICIP)*, pages 1885–1889. 


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Schwartz, W. R., de Rezende, P. J., and Pedrini, H. (2015). Faster Approximations of Shortest Geodesic Paths on Polyhedra Through Adaptive Priority Queue. In *10th International Conference on Computer Vision Theory and Applications (VISAPP)*, pages 371–378. 


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Patents

- 2019 **BR 10 2019 024569 7** - Metodo de Reconhecimento de Video Capaz de Codificar Relacoes Temporais e Espaciais de Conceitos utilizando Informacoes Contextuais (pending). (in Portuguese) 
- 2018 **US 16/033,847** - Method and system for sensor data recognition using data enrichment for the learning process (pending).
- BR 10 2017 026251 0** - Metodo e Sistema de Reconhecimento de dados de sensor utilizando o enriquecimento de dados para o processo de aprendizagem (pending). (in Portuguese) 

Research Grants (Principal Investigator)

- 2019-2021 **Making Sense: Robust Approaches for Video Monitoring** - project sponsored by the Brazilian Research Agency (CNPq). This project mainly focus on developing and improving techniques for environment monitoring through visual data obtained from a surveillance cameras network.
- 2018-2021 **SMS: Surveillance Systems and Algorithms for Oil Extraction Platforms** - project developed in partnership with the Petroleo Brasileiro S/A (Brazilian oil company). This project aims at the development of smart surveillance algorithms to monitor workers in oil extraction platforms.
- 2017-2019 **ECV2: Knowledge Extraction on Visual Surveillance** - project sponsored by the Minas Gerais Research Agency (FAPEMIG) within the Minas Gerais State Researcher Program (PPM-XI).
- 2017-2019 **Video Analytics Solutions** - project developed in partnership with Maxtrack Inovation Company. This project aims at the development of algorithms based on computer vision and machine learning for video analytics considering Internet of Things (IoT) scenarios.

- 2016-2018 **HAR - Human Activity Recognition** - project developed in partnership with Samsung. This project focuses on the development of algorithms able to recognize human activities based on visual and sensor information.
- 2016-2016 **Keymaker - Human Activity Recognition based on Contextual Information** project developed in partnership with Hewlett-Packard. This project aims the development of new algorithms for activity recognition considering contextual information extracted from the environment.
- 2015-2019 **GigaFrames: Large Scale Approaches to Surveillance and Computer Forensics** - project sponsored by the Minas Gerais Research Agency (FAPEMIG). The goal of this project is the development of Computer Vision and Machine Learning techniques to monitor environments and analyze forensics data when vast amounts of data are captured through surveillance cameras.
- 2015-2017 **VER+: Robust and Efficient Methods for Surveillance** - project sponsored by the Minas Gerais Research Agency (FAPEMIG) within the Minas Gerais State Researcher Program (PPM-IX).
- 2014-2020 **DeepEyes: Visual Computing and Machine Learning Solutions for Computer Forensics and Electronic Surveillance** - project sponsored by the Brazilian Coordination for the Improvement of Higher Education Personnel (CAPES). This project aims at the development of visual computing and machine learning algorithms related to the computer forensics and surveillance.
- 2013-2015 **SmartView: Automatic Monitoring in Sport Competitions** - project sponsored by the Brazilian Research Agency (CNPq) and the Brazilian Ministry of Sports. This project's goal is help monitoring, and consequently, improve the safety of sports venues for sports fans.
- 2013-2016 **VER+: Robust and Efficient Methods for Surveillance** - project sponsored by the Brazilian Research Agency (CNPq). This project mainly focus on developing and improving techniques for environment monitoring through visual data obtained from a surveillance cameras network.
- 2013-2016 **DET: Efficient Pedestrian Detection Applied to Looking at People** - project sponsored by the Minas Gerais Research Agency (FAPEMIG). This project's goal is to propose methods for pedestrian detection with reduced computing cost but without trading off accuracy.
- 2012-2015 **ARDOP: Discriminative and Robust Approaches to Looking at People** - project sponsored by the Minas Gerais Research Agency (FAPEMIG). This project aims at solving problems related to people observation, focusing in robust and discriminative approaches to reduce inaccurate results so that high level problems can be solved.

Total in grants: BRL 7,640,642.00

Fellowships

2020-2024	Productivity Fellowship (level 1D) sponsored by the Brazilian National Research Council (CNPq)
2017-2019	Minas Gerais State Researcher sponsored by the the Minas Gerais Research Agency (FAPEMIG)
2017-2020	Productivity Fellowship (level 2) sponsored by the Brazilian National Research Council (CNPq)
2015-2017	Minas Gerais State Researcher sponsored by the the Minas Gerais Research Agency (FAPEMIG)
2014-2017	Productivity Fellowship (level 2) sponsored by the Brazilian National Research Council (CNPq)
2005-2009	Fulbright PhD. Fellowship at the University of Maryland, Department of Computer Science (Advisor: Prof. Larry S. Davis)
2005	CNPq Technical Fellowship at the Federal University of Parana, Department of Computer Science (Supervisor: Prof. Helio Pedrini)
2003-2005	CNPq MSc. Fellowship at the Federal University of Parana, Department of Computer Science (Advisor: Prof. Helio Pedrini)
2000-2002	CAPES Special Training Program Fellowship at the Federal University of Parana, Department of Computer Science

Professional Activities

Professional and Academic Membership

Member of the IEEE, IEEE Computer Society, IEEE Signal Processing Society, and Brazilian Computer Science Society

Academic Service

Program Chair, SIBGRAPI 2016
 Program Chair, Brazilian Workshop on Computer Forensics 2014
 Program Chair, Workshop on Theses and Dissertations 2014
 Tutorial Chair, IEEE ICB 2019
 Publicity Chair, IEEE IJCB 2017

Conference/Workshop Reviewing

Reviewer, IEEE CVPR 2016, 2017, 2019
 Reviewer, IEEE ICCV 2015, 2017
 Reviewer, IEEE ECCV 2016, 2018

Reviewer, IEEE AVSS 2017
Reviewer, IEEE FG 2015, 2017
Reviewer, IEEE ICASSP 2015-2017
Reviewer, IEEE ICIP 2013-2018
Reviewer, IEEE WACV 2017
Reviewer, IAPR ICB 2016, 2018
Reviewer, IJCB 2017
Reviewer, IROS 2016
Reviewer, ISBA 2017, 2018
Reviewer, SIBGRAPI 2013, 2014, 2015, 2017, 2018
Program Committee, ACCV 2012, 2014, 2016
Program Committee, IEEE FG 2013, 2018
Program Committee, IEEE BTAS 2015, 2016
Program Committee, Iberoamerican Congress on Pattern Recognition (CIARP) 2016, 2017, 2018
Program Committee, Brazilian Workshop on Computer Vision (WVC) 2013-2018

Journal Reviewing

Reviewer, IEEE Transactions on Information Forensics and Security
Reviewer, IEEE Transactions on Image Processing
Reviewer, IEEE Signal Processing Letters
Reviewer, IEEE Transactions on Circuits and Systems for Video Technology
Reviewer, Computer Vision and Image Understanding
Reviewer, Journal of Mathematical Imaging and Vision
Reviewer, Elsevier Pattern Recognition Letters
Reviewer, Elsevier Pattern Recognition
Reviewer, Elsevier Neurocomputing
Reviewer, Elsevier Journal of Visual Communication and Image Representation
Reviewer, EURASIP Journal on Image and Video Processing
Reviewer, IET Computer Vision
Reviewer, Journal of Computer Science and Technology

Editorships

Associate Editor of IEEE Transactions on Information Forensics and Security, 2019 -
Guest Editor, Elsevier Pattern Recognition Letters, Special Issue on Data Representation and Representation Learning for Video Analysis, 2018.

Proposal Review Panels

Reviewer, Israel Science Foundation, 2016
Reviewer, Brazilian National Research Council (CNPq) 2014-2018
Reviewer, Sao Paulo State Research Foundation (FAPESP) 2014-2018
Reviewer, Pernambuco State Research Foundation (FACEPE) 2015
Reviewer, University of Sao Paulo/COFECUB 2012