

April 2021, Buenos Aires, ARGENTINA

Curriculum Vitae

Name: Cesar F. Caiafa
Date of birth: August 13th 1970
Nationality: Argentinean, Italian

Address: Avenida Gral. San Martín 2649, 4C, Florencio Varela
CP 1888, Prov. de Buenos Aires – ARGENTINA



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Social Networks: [ResearchGate](#), [Linkedin](#), [Google Scholar](#), [ORCID](#)

TEACHING EXPERIENCE

2018 - present Models and Simulations, Computer Science Dept., Eng. Faculty, Univ. of Buenos Aires (ARGENTINA)
2011 – 2018 Numerical Analysis, Computer Science Dept., Eng. Faculty, Univ. of Buenos Aires (ARGENTINA)
2005 – 2008 Communication Theory, Computer Science Dept., Eng. Faculty, Univ. of Buenos Aires (ARGENTINA)
2004 – 2005 Statistics and Probability, Mathematics Dept., Eng. Faculty, Univ. of Buenos Aires (ARGENTINA)
1991 – 1995 Mathematical Analysis III, Mathematics Dept., Eng. Faculty, Univ. of Buenos Aires (ARGENTINA)

CURRENT POSITIONS

Nov 2010 ~ present **CONICET** Buenos Aires, ARGENTINA
Independent Researcher at IAR

Jun 2015 ~ present **Engineering Faculty, University of Buenos Aires (FIUBA)** Buenos Aires, ARGENTINA
Adjunct Professor

Apr 2018 ~ **RIKEN Artificial Intelligence Project** Tokyo, JAPAN
Visiting Scientist

FORMER POSITIONS

2016 – 2018 **Indiana University** Bloomington, IN, United States
Research Scientist at Department of Psychological and Brain Sciences

2010 - 2017 **RIKEN Brain Science Institute** Saitama, JAPAN
Visiting Scientist at Laboratory for Advanced Brain Signal Processing

2008 – 2010 **RIKEN Brain Science Institute** Saitama, JAPAN
Research Scientist at Laboratory for Advanced Brain Signal Processing

2004 – 2007 **Engineering Faculty, University of Buenos Aires (FIUBA)** Buenos Aires, ARGENTINA
Research Fellow (doctorate)

2004 – 2018 **Engineering Faculty, University of Buenos Aires (FIUBA)** Buenos Aires, ARGENTINA
Teacher / Chief of Assignments

2005 – 2005 **CNR (Consiglio Nazionale delle Ricerche)** Pisa, ITALY
Research Fellow

2000 – 2002 **Lucent Technologies** Buenos Aires, ARGENTINA
System Engineer in Optical Networking Group

1996 – 2000	TELECOM <i>Project Engineer</i>	Buenos Aires, ARGENTINA
1991 – 1995	Engineering Faculty, University of Buenos Aires (FIUBA) <i>Teaching Assistant</i>	Buenos Aires, ARGENTINA

EDUCATION

2004 - 2007	Engineering Faculty, University of Buenos Aires PhD. In Engineering (December 2007) Dissertation: “Mathematical Models and New Algorithms for Image Processing” (Advisor: Dr. Araceli Proto)	Buenos Aires, ARGENTINA
1990 - 1996	Engineering Faculty, University of Buenos Aires Electronic Engineer (May 1996) Dissertation: “Two-dimensional Random Processes. Their application to Image Processing” (Advisor: Dr. Bruno Cernuschi)	Buenos Aires, ARGENTINA

RESEARCH INTERESTS

Machine learning and signal processing algorithms for Engineering, Astronomy and Neuroscience. Main topics of research include: machine learning, tensor decompositions, tensor networks, sparse representations and compressed sensing, independent component analysis (ICA).

REVIEWING ACTIVITIES

Editorial Board: Associate Editor-in-Chief in *Signals* (ISSN 2624-6120) - 2018.

Journals: Machine Learning, IEEE Transactions on Cybernetics, MIT Neural Computation, IEEE Transactions on Signal Processing; IEEE Transaction on Image Processing; EURASIP Journal on Advances in Signal Processing, Signal Processing Journal, Elsevier; Digital Signal Processing Journal, Elsevier; SIAM Journal on Matrix Analysis and Applications (SIMAX); Neurocomputing.

Agencies: CONSEJO NACIONAL DE INVESTIGACIONES CIENTIFICAS Y TECNICAS (CONICET), ARGENTINA; THE EUROSTARS PROGRAMME – EUREKA, EUROPEAN COMMUNITY; INNOWWIDE, EUROPEAN COMMUNITY.

Conferences: NeurIPS 2019 – 2020 (Workshop co-organizer), NIPS 2018, IJCAI 2020 – 2021 (Workshop co-organizer), ICLR 2019 – 2021, AAAI 2020 – 2021, ICLM 2019 - 2021, SSP 2018, ICASSP 2006 – 2013 – 2014 – 2015 – 2016, MSLP 2013 – 2015 (Workshop PC member), LVA/ICA 2012 (Technical Committee Member), ICONIP 2009, EUSIPCO 2006 – 2011, Biosignals 2012 (TC member), NOLISP 2011, NOLTA 2009, RPIC 2007, KES 2007, IGARSS 2007.

ORGANIZATION OF WORKSHOPS

Co-organization of the NeurIPS 2020 First Workshop on Quantum Tensor Networks in Machine Learning and the IJCAI 2020 Workshop on Tensor Networks Representations in Machine Learning, served as PC member in IEEE International Workshop on Machine Learning for Signal Processing 2013 and 2015 editions, and BIOSIGNALS 2012; and as TC member in LVA/ICA 2012 and ICONIP 2009.

COMPLETE LIST OF PUBLICATIONS

Peer Review Journals

2021

- [1] “On the Robustness of EEG Tensor Completion Methods”, F Duan, H Jia, Z Zhang, F Feng, Y Tan, Y Dai, A Cichocki, Z Yang, **CF Caiafa**, S Zhe, J Solé-Casals. SCIENCE CHINA Technological Sciences, 2021 (accepted). [doi:10.1007/s11431-020-1839-5](https://doi.org/10.1007/s11431-020-1839-5)

2020

- [2] "WLnet: Towards an Approach for Robust Workload Estimation Based on Shallow Neural Networks", S Zhe, B Li, F Duan, H Jia, S Wang, Y Liu, A Cichocki, **CF Caiafa**, J Solé-Casals. *IEEE Access*, 9, 2020. [doi:10.1109/ACCESS.2020.3044732](https://doi.org/10.1109/ACCESS.2020.3044732)
- [3] "Decomposition Methods for Machine Learning with Small, Incomplete or Noisy Datasets", **CF Caiafa**, J Solé-Casals, P Marti-Puig, S Zhe, T Tanaka. *Applied Sciences*, 10 (23), 2020. [doi:10.3390/app10238481](https://doi.org/10.3390/app10238481)

2019

- [4] "Associative white matter connecting the dorsal and ventral posterior human cortex", D Bullock, H Takemura, **CF Caiafa**, L Kitchell, B McPherson, B Caron, F Pestilli. *Brain Structure and Function*, 2019. [doi:10.1007/s00429-019-01907-8](https://doi.org/10.1007/s00429-019-01907-8)
- [5] Derivatives as data: An open repository of repeated-measures structural connectomes and white matter tracts anatomy", P Avesani, **CF Caiafa**, B McPherson, S Hayashi, R Henschel, E Garyfallidis, A Patterson, O Sporns, A Saykin and F Pestilli, *Nature Scientific Data* 6, 69, 2019. [doi:10.1038/s41597-019-0073-y](https://doi.org/10.1038/s41597-019-0073-y)
- [6] "Galactic H I supershells: kinetic energies and possible origin", LA Suad, **CF Caiafa**, EM Arnal, S Cichowolski, *Astronomy & Astrophysics*, Vol. 624, Apr 2019. [doi:10.1051/0004-6361/201833850](https://doi.org/10.1051/0004-6361/201833850)

2018

- [7] "Dopamine neurons in the ventral tegmental area enhance information coding in the prefrontal cortex", CJ Mininni, **CF Caiafa**, BS Zanutto, KY Tseng., SE Lew, *Nature Scientific Reports* (2018). [doi:10.1038/s41598-018-29979-2](https://doi.org/10.1038/s41598-018-29979-2)
- [8] "Brain-Computer Interface with Corrupted EEG Data: A Tensor Completion Approach", J Solé-Casals, **CF Caiafa**, Q Zhao, A Cichocki, *Cognitive Computation* (2018). [doi:10.1007/s12559-018-9574-9](https://doi.org/10.1007/s12559-018-9574-9)
- [9] "Dynamical phase diagrams of a love capacity constrained prey-predator model", PT Simin, GR Jafari, M Ausloos, **CF Caiafa**, LF Caram, A Sonubi, A Arcagni, S Stefani, *European Physical Journal B* (2018) 91: 43. [doi:10.1140/epjb/e2017-80531-7](https://doi.org/10.1140/epjb/e2017-80531-7)

2017

- [10] "Efficient enhancement of information in the prefrontal cortex in the presence reward predicting stimuli", CJ Mininni, **CF Caiafa**, BS Zanutto, KY Tseng, SE Lew, *PLOS ONE* 12(12): e0188579 (2017). [doi:10.1371/journal.pone.0188579](https://doi.org/10.1371/journal.pone.0188579)
- [11] "Multidimensional Encoding of Brain Connectomes", **CF Caiafa**, F Pestilli, *Nature Scientific Reports*, Article number: 11491 (2017). [doi:10.1038/s41598-017-09250-w](https://doi.org/10.1038/s41598-017-09250-w)

2016

- [12] "Inverting Monotonic Nonlinearities by Entropy Maximization", J Solé-Casals, K López-de-Ipiña Pena, **CF Caiafa**, *PLOS ONE* 11(10): e0165288. [doi:10.1371/journal.pone.0165288](https://doi.org/10.1371/journal.pone.0165288)
- [13] "Ensemble Tractography", H Takemura, **CF Caiafa**, B Wandell and F Pestilli, *PLOS Computational Biology*, Feb. 2016. [doi:10.1371/journal.pcbi.1004692](https://doi.org/10.1371/journal.pcbi.1004692)

2015

- [14] "Cooperative peer-to-peer multiagent based systems", LF Caram, **CF Caiafa**, AN Proto, M Ausloos, *Phys. Rev. E* 92, 022805 – Published 10 August 2015. [doi:10.1103/PhysRevE.92.022805](https://doi.org/10.1103/PhysRevE.92.022805)
- [15] "Tensor Decompositions for Signal Processing Applications. From Two-way to Multiway Component Analysis", A Cichocki, D Mandic, **CF Caiafa**, A-H Phan, G Zhou, Q Zhao, and L De Lathauwer, *IEEE Signal Processing Magazine*, Vol. 32, No. 2, pp. 145 - 163, March 2015. [doi:10.1109/MSP.2013.2297439](https://doi.org/10.1109/MSP.2013.2297439)
- [16] "Stable, Robust and Super-Fast Reconstruction of Tensors Using Multi-Way Projections", **CF Caiafa**, A Cichocki, *IEEE Transactions on Signal Processing*, Vol. 63, No. 3, pp. 780 - 793, Jan. 2015. [doi:10.1109/TSP.2014.2385040](https://doi.org/10.1109/TSP.2014.2385040)

2014

- [17] "Complex Network Representation of Multiagent Systems with Cooperative and Competitive Interactions", LF Caram, **CF Caiafa**, AN Proto, *Atti della Accademia Peloritana dei Pericolanti*, April 2014. [doi:10.1478/AAPP.92S1B2](https://doi.org/10.1478/AAPP.92S1B2)
- [18] "A new catalogue of HI supershell candidates in the outer part of the Galaxy", LA Suad, **CF Caiafa**, EM Arnal, S Cichowolski, *Astronomy & Astrophysics*, Vol. 564, Apr 2014. [doi:10.1051/0004-6361/201323147](https://doi.org/10.1051/0004-6361/201323147)

2013

- [19] "Multidimensional Compressed Sensing and their Applications", **CF Caiafa**, A Cichocki, *WIREs Data Mining and Knowledge Discovery*, Vol. 3, No. 6, pp. 355-380, Sept 2013. [doi:10.1002/widm.1108](https://doi.org/10.1002/widm.1108)
- [20] "Higher-Order Partial Least Squares (HOPLS): A Generalized Multi-Linear Regression Method", Q Zhao, **CF Caiafa**, DP Mandic, ZC Chao, Y Nagasaka, N Fujii, L Zhang, A Cichocki, *IEEE Trans. on Pattern Analysis and Machine Intelligence (PAMI)*, Vol. 35, No. 7, 2013. [doi:10.1109/TPAMI.2012.254](https://doi.org/10.1109/TPAMI.2012.254).
- [21] "Computing Sparse Representations of Multidimensional Signals Using Kronecker Bases", **CF Caiafa**, A Cichocki, *Neural Computation*, Vol. 25, No. 1, pp. 186-220, 2013. [doi:10.1162/NECO_a_00385](https://doi.org/10.1162/NECO_a_00385).

2012

- [22] "On the Conditions for Valid Objective Functions in Blind Separation of Independent and Dependent Sources", **CF Caiafa**, *EURASIP Journal on Advances in Signal Processing*, Vol. 2012, pp. 255, 2012. [doi:10.1186/1687-6180-2012-255](https://doi.org/10.1186/1687-6180-2012-255).
- [23] "A Fast Gradient Approximation for Nonlinear Blind Signal Processing", J Solé-Casals, **CF Caiafa**, *Cognitive Computation*, Vol. 5, Iss. 4, pp 483-492, 2012. [doi:10.1007/s12559-012-9192-x](https://doi.org/10.1007/s12559-012-9192-x).

2011

- [24] "A Simple Approximation for Fast Nonlinear Deconvolution", J Solé-Casals, **CF Caiafa**, *Advances in Nonlinear Speech Processing*, LNCS, Volume 7015/2011, 55-62, 2011 (Springer). [doi:10.1007/978-3-642-25020-0_8](https://doi.org/10.1007/978-3-642-25020-0_8)

2010

- [25] "Generalizing the Column-Row Matrix Decomposition to Multi-way Arrays", **CF Caiafa**, A Cichocki, *Linear Algebra and its Applications*, Vol. 433, pp. 557–573, 2010 (Elsevier). [doi:10.1016/j.laa.2010.03.020](https://doi.org/10.1016/j.laa.2010.03.020)
- [26] "Dynamic Peer-to-Peer Competition", LF Caram, **CF Caiafa**, AN Proto, M Ausloos, *Physica A*, Vol. 389, pp. 2628–2636, 2010 (Elsevier). [doi:10.1016/j.physa.2010.02.032](https://doi.org/10.1016/j.physa.2010.02.032)

2009

- [27] "Estimation of Sparse Non-negative Sources from Noisy Overcomplete Mixtures using MAP", **CF Caiafa**, A Cichocki, *Neural Computation*, Vol. 21, Issue 12, pp. 3487-3518, Dec. 2009 (MIT Press). [doi:10.1162/neco.2009.08-08-846](https://doi.org/10.1162/neco.2009.08-08-846)

2008

- [28] "Blind spectral unmixing by local maximization of non-Gaussianity", **CF Caiafa**, E Salerno, AN Proto, L Fiumi, *Signal Processing (EURASIP)* Vol. 88, Issue 1, Jan. 2008, pp. 50-68 (Elsevier). [doi:10.1016/j.sigpro.2007.07.011](https://doi.org/10.1016/j.sigpro.2007.07.011)

2007

- [29] "Blind Source Separation Applied to Spectral Unmixing: Comparing Different Measures of Nongaussianity", **CF Caiafa**, E Salerno, AN Proto, *Lecture Notes of Computer Science (LNCS)*, 4694, pp. 1–8, 2007 (Springer). [doi:10.1007/978-3-540-74829-8_1](https://doi.org/10.1007/978-3-540-74829-8_1)
- [30] "Long Correlation Gaussian Random Fields: Parameter Estimation and Noise Reduction", **CF Caiafa**, AN Proto, EE Kuruoglu, *Digital Signal Processing*, Volume 17, pp. 819-835, 2007 (Elsevier). [doi:10.1016/j.dsp.2007.01.001](https://doi.org/10.1016/j.dsp.2007.01.001)

2006

- [31] "Separation of statistically dependent sources using an L²-distance non-Gaussianity measure". **CF Caiafa**, AN Proto, *Sig. Proc. (EURASIP)*, Vol. 86, Issue 11, Nov. 2006, pp 3404-3420 (Elsevier). [doi:10.1016/j.sigpro.2006.02.032](https://doi.org/10.1016/j.sigpro.2006.02.032)
- [32] "Dynamical Emergence of Contrarians in a 2-D Lotka –Volterra Lattice", **CF Caiafa**, AN Proto, *International Journal on Modern Physics C*, Vol. 17, No. 3, pp. 385-394, 2006 (World Scientific). [doi:10.1142/S0129183106008510](https://doi.org/10.1142/S0129183106008510)
- [33] "An Ising Model Simulation of Mobile Communication Networks", F Caram, **CF Caiafa**, AN Proto, *International Journal on Modern Physics C*, Vol. 17, No. 3, pp. 435-445, 2006 (World Scientific). [doi:10.1142/S0129183106008467](https://doi.org/10.1142/S0129183106008467)
- [34] "Temperature estimation in the two-dimensional Ising model", **CF Caiafa**, AN Proto, *International Journal on Modern Physics C*, Vol. 17, No. 1, pp. 29-38, Jan. 2006 (World Scientific). [doi:10.1142/S0129183106008856](https://doi.org/10.1142/S0129183106008856)

2005

- [35] “Wavelet and Karhunen Loeve transformations applied to SAR signals and images”, **CF Caiafa**, M. P. Sassano, AN Proto; *Physica A: Stat. Mech. and its App.*, Vol. 356, Issue 1, 1 Oct. 2005, pp 172-177 (Elsevier). [doi:10.1016/j.physa.2005.05.032](https://doi.org/10.1016/j.physa.2005.05.032)
- [36] “Individual recognition of female southern elephant seals, *Mirounga leonina*, applying principal components analysis”, **CF Caiafa**, AN Proto, D Verganic, Z Stanganelli, *Journal of Biogeography*, Vol. 32, Issue 7, 1257-1266 (2005) (Blackwell Synergy). [doi:10.1111/j.1365-2699.2004.01215.x](https://doi.org/10.1111/j.1365-2699.2004.01215.x)

Refereed Conference Papers with Proceedings

2021

- [1] “Learning from Incomplete Features by Simultaneous Training of Neural Networks and Sparse Coding”, **CF Caiafa**, Z Wang, J Solé-Casals, Q Zhao. LLID Workshop at CVPR 2021 (**Conference** on Computer Vision and Pattern Recognition), New York, USA, 19-25 June 2021.

2019

- [2] “Learning Macroscopic Brain Connectomes via Group-Sparse Factorization”, F Aminmansour, A Patterson, L Le, Y Peng, D Mitchell, Franco Pestilli, **CF Caiafa**, R Greiner, M White. NeurIPS 2019 (Annual Conference on Neural Information Processing Systems), Vancouver, Canada, 8-14 December 2019.

2017

- [3] “Unified representation of tractography and diffusion-weighted MRI data using sparse multidimensional arrays”, **CF Caiafa**, O Sporns, AJ Saykin, F Pestilli, Proc. NIPS 2017 (Annual Conference on Neural Information Processing Systems), Long Beach, USA, 4-7 December 2017.
- [4] “A Sparse Tensor Decomposition with Multi-Dictionary Learning Applied to Diffusion Brain Imaging”, **CF Caiafa**, A Cichocki, F Pestilli, Proc. SPARS 2017 (Signal Processing with Adaptive Sparse Structured Representations 2017), Lisbon, Portugal, 4-8 June 2017.

2014

- [5] “Fast and Stable Recovery of Approximately Low Multilinear Rank Tensors from Multiway Compressive Measurements”, **CF Caiafa**, A Cichocki, Proc. ICASSP 2014 (IEEE International Conference on Acoustics, Speech, and Signal Processing), Firenze, Italy, 4-9 May 2014.

2013

- [6] “A New Catalogue of HI Supershell Candidates in the Outer Part of the Milky Way”, L Suad, **CF Caiafa**, M Arnal, S Cichowolski, Proc. LARIM 2013 (XIV Latin American Regional IAU Meeting 2013), Florianopolis, Brazil, 24-29 Nov. 2013.
- [7] “Using Generic Order Moments for Separation of Dependent Sources with Linear Conditional Expectations”, **CF Caiafa**, E. Kuruoglu, Proc. EUSIPCO 2013 (European Signal Processing Conference 2013), Marrakech, Morocco, 9-13 Sept 2013.
- [8] “Tensor Decompositions Tools for Multidimensional CS”, **CF Caiafa**, A Cichocki, Proc. SPARS 2013 (Signal Processing with Adaptive Sparse Structured Representations 2013), Laussane, Switzerland, 8-11 July 2013.

2012

- [9] “Block Sparse Representations of Tensors Using Kronecker Bases”, **CF Caiafa**, A Cichocki, Proc. ICASSP 2012 (IEEE International Conference on Acoustic, Speech and Signal Processing 2012), Kyoto, Japan, 25-30 March 2012.

2011

- [10] “Large HI Shells Catalogue in the Second Galactic Quadrant.”, LA Suad, **CF Caiafa**, EM Arnal S Cichowolski, Boletín de la Asociación Argentina de Astronomía N54 (BAAA, Vol. 54, 2011), 54 Reunion de la AAA y IX Reunión Anual de la SOCHIAS, San Juan, Argentina, 03-07 October 2011.
- [11] “A Multilinear Subspace Regression Method Using Orthogonal Tensors Decompositions”, Q Zhao, **CF Caiafa**, DP Mandic, L. Zhang, T. Ball, A. Schulze-Bonhage, A. Cichocki, Proc. NIPS 2011 (Neural Information Processing Systems), Granada, Spain, 12-17 December 2011.

2009

- [12] "Methods for Factorization and Approximation of Tensors by Partial Fiber Sampling", **CF Caiafa**, A Cichocki, Proc. CAMSAP 2009 (3rd International Workshop on Computational Advances in Multi-Sensor Adaptive Processing), Aruba, Dutch Antilles, December 13-16, 2009.
- [13] "Slice Oriented Tensor Decomposition of EEG Data for Feature Extraction in Space, Frequency and Time Domains", Q Zhao, **CF Caiafa**, A Cichocki, L Zhang and A-H Phan, Lecture Notes in Computer Science, Vol. 5863, pp. 221-228, Dec. 2009 (Springer).
- [14] "Reconstructing matrices and tensors from few rows and columns", **CF Caiafa**, A Cichocki, NOLTA 2009 (International Symposium on Nonlinear Theory and its Applications), Sapporo, Japan, October 18-21, 2009.

2008

- [15] "Flexible HALS Algorithms for Sparse Non-Negative Matrix/Tensor Factorization", A Cichocki, A-H Phan, **CF Caiafa**, Proc. of IEEE Int. Workshop on Machine Learning for Signal Processing, pp. 73-78, October 16-19, 2008, Cancún, Mexico

2007

- [16] "Maximum Likelihood Decoding on a Communication Channel", **CF Caiafa**, N Barraza, AN Proto, Proc. of RPIC 2007 (Conferencia Procesamiento de la Información y Control), 16-18 Oct. 2007, Río Gallegos, Argentina.
- [17] "Blind source separation applied to spectral unmixing: comparing different measures of nongaussianity", **CF Caiafa**, E. Salerno, A. N. Proto, Proc. of Computational Learning Methods for Unsupervised Segmentation Conference, Vietri sul Mare, Salerno, Italy, 12-14 Septiembre 2007. KES 2007/ WIRN 2007, Part III, LNAI 4694, pp. 1-8, 2007 (Springer).

2006

- [18] "Dependent Component Analysis as a tool for blind Spectral Unmixing of remote sensed images". **CF Caiafa**, E Salerno, AN Proto and L Fiumi. Proc. of EUSIPCO 2006, Florence, Sept. 4-8, 2006.
- [19] "A Minimax Entropy Method for Blind Separation of Dependent Components in Astrophysical Images" **CF Caiafa**, EE Kuruoglu, AN Proto, AIP- Proc. of MaxEnt 2006 - Twenty sixth International Workshop on Bayesian Inference and Maximum Entropy Methods in Science and Engineering CNRS, Paris, France, July 8-13, 2006, pp. 81-88.
- [20] "Dynamical emergence of contrarians in a 2-D Lotka –Volterra lattice", **CF Caiafa**, AN Proto, International Journal on Modern Physics C, Dyses05 Proc., Vol. 17, No. 3 (2006) 385-394 (World Scientific).
- [21] "An Ising Model simulation of Mobile Communication Networks", F Caram, **CF Caiafa**, AN Proto International Journal on Modern Physics C, Proc. of Dyses 2005., Vol. 17, No. 3 (2006) 435-445 (World Scientific).

2005

- [22] "A non-Gaussianity measure for blind source separation", **C. F. Caiafa** and A. N. Proto, Proc. of SPARS05, Nov. 16-18, 2005 – IRISA - Rennes (France).

SCHOLASTIC AWARDS & HONORS

Dec. 2020	Awarded the JSPS Invitational Fellowship to visit Riken AIP	Tokyo, JAPAN
Dec. 2019	Awarded the JSPS Invitational Fellowship to visit Riken AIP	Tokyo, JAPAN
May. 2019	Best 2018 paper at IEEE Signal Processing Magazine	Brighton, UK
Mar. 2017	Awarded the Fulbright – CONICET Fellowship	Bloomington, IN, USA
May. 2014	Awarded the IEEE SPS Travel Grant for the International Conference for Acoustic and Speech Signal Processing.	Florence, ITALY
Aug. 2012	Awarded the ICTP (International Centre of Theoretical Physics) Fellowship for the School on "Large Scale Problems in Machine Learning".	Trieste, ITALY
July 2007	Awarded the ICTP (International Centre of Theoretical Physics) Fellowship for the Workshop "Common Concepts in Statistical Physics and Computer Science".	Trieste, ITALY
July 2006	Awarded the Jaynes Foundation Fellowship for the MAXENT06 Conference.	Paris, FRANCE
March 2006	Awarded the ICIAM/ICTP Fellowship for the ICAM06 Conference.	Santiago de Chile, CHILE

2004 – 2007	Nominated for the Peruhil Fellowship (doctorate), University of Buenos Aires.	Buenos Aires, ARGENTINA
2005	Nominated for the ASI-CONAE.	Pisa, ITALY

RESEARCH GRANTS

As director or co-director:

2014 – 2017: Co-Director of UBACyT “Modulación dopamina-dependiente del código neuronal en áreas corticales”, Secretaría de Ciencia y Técnica, Argentina.

2012 – 2014: Director of PIP CONICET “Representaciones “Sparse” y la Teoría del Sensado Comprimido aplicado al procesamiento de señales multidimensionales”, Argentina.

As member of a research team:

2017 – 2019: PICT-2017-3208: “Modulación dopaminérgica de la información cortical en el aprendizaje de reglas simples y complejas”, Agencia de Promoción Científica, Argentina.

2016 - 2017: SPOKE: MIDWEST: Collaborative: Advanced Computational Neuroscience Network (ACNN) (NSF IIS 1636893) and NIH ULTR001108, USA.

2013 – 2015: PICT2012: “Dinámica e interacción de circuitos neuronales involucrados en el aprendizaje de reglas: aplicación a máquinas inteligentes”, Argentina

2012 – 2015: 11/G113: “Supercáscaras de HI en la Parte Externa de la Vía Láctea y su Importancia en la Formación Estelar”, Universidad Nacional de La Plata, Argentina.

2011 – 2014: UBACyT 2011-2014 20020100- 100902 “Codificación de la memoria de trabajo en la corteza visuales y somatosensoriales”, Argentina

2009 – 2010: AR2009-0010: “Desarrollo de Herramientas de Procesado de Señales para el Analisis de Datos Bioinformaticos”. Argentina – Spain.

2008 – 2010: UBACyT 2008-2010 I027 (2008) “Teorías computacionales para explicar cooperación entre individuos con capacidad de aprender condicionamiento operante y clases de equivalencia”, Argentina.

2008 – 2010: UBACyT 2008-2010 I012 (2008) “Aplicaciones de Explotación de Información Basada en Sistemas Inteligentes”, Argentina.

Sept – Dic 2005: Satellite System for Emergency Management (SIASGE) Program. CONAE (Argentina) and Agenzia Spaziale Italiana (ASI) (Italia).

2005: CNR ICT.P03.009.006: “Industrial and medical diagnosis, management of cultural heritage, and management of states of emergency”. Signal & Images Laboratory of ISTI- CNR, Pisa, Italia.

2003 – 2007: PICT 2003 (02-13533) y UBACyT Proyecto 2003-2007 I050 (2004) “Explotación de Información basada en sistemas inteligentes”, Argentina.

2003 – 2004: PICTO 2002 CENPAT-CONAE. “Desarrollo de un Sistema de Información Geográfica y de Toma Automática de información para el estudio del Impacto del Cambio y la Variabilidad Climática en la Zona Oeste de la Península Antártica”, Argentina.

RESEARCH SUPERVISION

2019 ~: Final project, Andres Otero. Title: “Descomposiciones Tensoriales aplicadas a arquitecturas de Deep Learning”, University of Buenos Aires, Argentina.

2018 ~: Assistant Researcher, Laura Suad. Title: “Estudio multifrecuencia de supercáscaras de HI y chimeneas galácticas, y su rol en la dinámica del medio interestelar de la Vía Láctea”, CONICET, Buenos Aires, Argentina.

2016 ~: PhD Thesis, Romina Astrid Rebrij. Title: “Aprendizaje automático aplicado al análisis de datos genómicos y al cuidado de la salud”, University of Buenos Aires, Argentina.

2016 ~ 2017: Posdoctoral Fellowship, Augusto Maya. Title: “Problemas de Inferencia Estadística para Conjuntos Masivos de Datos”, CONICET, Argentina.

2014: Final project, Marcelo Gore. Title: “Modelo computacional de tránsito vehicular basado en el comportamiento de bandadas”, University of Buenos Aires, Argentina.

LANGUAGES

Spanish: native; **English:** TOEFL ITP score = 617/677; **Italian:** Intermediate; **Japanese:** Basic