

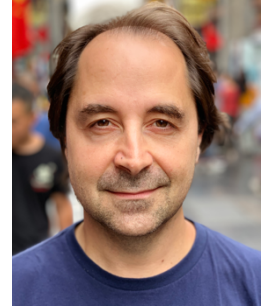
October 2023, Buenos Aires, ARGENTINA

CURRICULUM VITAE CESAR F. CAIAFA

Date of birth: August 13th, 1970
Nationality: Argentinean, Italian
Address: Avenida General. San Martín 2649, 4C, Florencio Varela
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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

2010 – present **CONICET** Buenos Aires, ARGENTINA
Independent Researcher at Radioastronomy Argentinean Institute
2018 – present **Engineering Faculty, University of Buenos Aires (FIUBA)** Buenos Aires, ARGENTINA
Adjunct Professor
2022 – present **RIKEN Center for Advanced Intelligence Project (AIP)** Tokyo, JAPAN
Visiting Scientist at the Tensor Learning Team

FORMER POSITIONS

2022 **RIKEN Center for Advanced Intelligence Project (AIP)** Tokyo, JAPAN
Visiting Researcher (JSPS Fellow) at the Tensor Learning Team
2018 – 2020 **RIKEN Center for Advanced Intelligence Project (AIP)** Tokyo, JAPAN
Visiting Scientist at the Tensor Learning Team
2016 – 2018 **Indiana University** Bloomington, IN, United States
Research Scientist at Department of Psychological and Brain Sciences
2010 – 2018 **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) <i>Research Fellow</i>	Pisa, ITALY
2000 – 2002	Lucent Technologies <i>System Engineer in Optical Networking Group</i>	Buenos Aires, ARGENTINA
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 inverse problems, machine learning algorithms, tensor and matrix factorizations, tensor networks, sparse representations, and compressed sensing.

SELECTED PUBLICATIONS (a complete list is provided at the end of the CV)

- “Alternating Local Enumeration (TnALE): Solving Tensor Network Structure Search with Fewer Evaluations”, C Li, J Zeng, C Li, **CF Caiafa**, Q Zhao, ICML 2023 (Fortieth International Conference on Machine Learning), Honolulu, USA, 23-29 July 2023.
- “Cerebral cortex layer segmentation using diffusion magnetic resonance imaging in vivo with applications to laminar connections and working memory analysis”, J Zhang, Z Sun, F Duan, L Shi, Y Zhang, J Solé-Casals, **CF Caiafa**, *Human Brain Mapping*, 43(17), 2022. [10.1002/hbm.25998](https://doi.org/10.1002/hbm.25998)
- “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.
- “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. [10.1038/s41597-019-0073-y](https://doi.org/10.1038/s41597-019-0073-y)
- “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.
- “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.
- “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. [10.1109/MSP.2013.2297439](https://doi.org/10.1109/MSP.2013.2297439)
- “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. [10.1109/TSP.2014.2385040](https://doi.org/10.1109/TSP.2014.2385040)
- “Computing Sparse Representations of Multidimensional Signals Using Kronecker Bases”, **CF Caiafa**, A Cichocki, *Neural Computation*, Vol. 25, No. 1, pp. 186-220, 2013. [10.1162/NECO_a_00385](https://doi.org/10.1162/NECO_a_00385).
- “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. [10.1051/0004-6361/201323147](https://doi.org/10.1051/0004-6361/201323147)

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: National Council for Scientific and Technical Research (CONICET), ARGENTINA; The Eurostars Programme – EUREKA and INNOWWIDE, EUROPEAN COMMUNITY; The European Science Foundation.

Conferences: AISTATS 2022, AAAI 2020 – 2022, ACML 2020 – 2021, NeurIPS 2019 – 2023, NIPS 2018, IJCAI 2020 – 2023, ICLR 2019 – 2024, AAAI 2020 – 2022, ICLM 2019 - 2023, 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.

SCHOLASTIC AWARDS & HONORS

Aug. 2023	JSPS Invitational Fellowship to visit Riken AIP	Tokyo, JAPAN
Dec. 2020	JSPS Invitational Fellowship to visit Riken AIP	Tokyo, JAPAN
Dec. 2019	JSPS Invitational Fellowship to visit Riken AIP	Tokyo, JAPAN
May. 2019	Best 2018 paper at IEEE Signal Processing Magazine	Brighton, UK
Mar. 2017	Fulbright – CONICET Fellowship	Bloomington, IN, USA
May. 2014	IEEE SPS Travel Grant for the International Conference for Acoustic and Speech Signal Processing.	Florence, ITALY
Aug. 2012	ICTP (International Centre of Theoretical Physics) Fellowship for the School on “Large Scale Problems in Machine Learning”.	Trieste, ITALY
July 2007	ICTP (International Centre of Theoretical Physics) Fellowship for the Workshop “Common Concepts in Statistical Physics and Computer Science”.	Trieste, ITALY
July 2006	Jaynes Foundation Fellowship for the MAXENT06 Conference.	Paris, FRANCE
March 2006	ICIAM/ICTP Fellowship for the ICAM06 Conference.	Santiago de Chile, CHILE
2004 – 2007	Peruilh Fellowship (doctorate), University of Buenos Aires.	Buenos Aires, ARGENTINA
2005	ASI-CONAE Fellowship.	Pisa, ITALY

RESEARCH GRANTS

As director or co-director:

2022 – 2024: (director) PIP CONICET “Solutions to Inverse Problems in Biomedical Engineering Based on Sparse Representations and Artificial Intelligence”, Argentina.

2022 – 2024: (codirector) PICT: “Microwave Tomography: Reconstruction Algorithms, Experimental Validation, and Applications”, Agency for Scientific Promotion.

2014 – 2017: (codirector) UBACyT “Dopamine-Dependent Modulation of Neuronal Coding in Cortical Areas”, Secretary of Science and Technology, Argentina.

2012 – 2014: (director) PIP CONICET “Sparse Representations and Compressed Sensing Theory Applied to Multidimensional Signal Processing”, Argentina.

As member of a research team:

2021 – 2024: MICINN PID2020-120314RB-I00 “Advanced Signal Processing for Wind Turbine Fault Prognosis”, Spain.

2020 – 2023: UBACyT 20020190-200305BA “Study and Analysis of Blockchain Technology using Mathematical Tools and Methods”, Argentina.
2017 – 2019: PICT-2017-3208: “Dopaminergic Modulation of Cortical Information in the Learning of Simple and Complex Rules”, Agency for Scientific Promotion, Argentina.
2016 – 2017: SPOKE: MIDWEST: Collaborative: Advanced Computational Neuroscience Network (ACNN) (NSF IIS 1636893) and NIH ULTTR001108, USA.
2013 – 2015: PICT2012: “Dynamics and Interaction of Neuronal Circuits Involved in Rule Learning: Application to Intelligent Machines”, Argentina
2012 – 2015: 11/G113: “HI Supershells in the Outer Part of the Milky Way and Their Importance in Star Formation”, National University of La Plata, Argentina.
2011 – 2014: UBACyT 20020100- 100902 “Encoding of Working Memory in Visual and Somatosensory Cortex”, Argentina
2009 – 2010: AR2009-0010: “Development of Signal Processing Tools for the Analysis of Bioinformatic Data”. Argentina – Spain.
2008 – 2010: UBACyT I027 (2008) “Computational Theories to Explain Cooperation Among Individuals with the Ability to Learn Operant Conditioning and Equivalence Classes”, Argentina.
2008 – 2010: UBACyT I012 (2008) “Applications of Information Exploitation Based on Intelligent Systems”, 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.

RESEARCH SUPERVISION

2021~: PhD Thesis, Shuning Han. Title: “Human Brain Network Analysis with Magnetic Resonance Imaging of Different Intellectual Levels”, University of Vic, Vic, Spain.
2021~: PhD Thesis, Hao Jia. Title: “Expanding the Potential of Non-Invasive Brain-Computer Interfaces: Advancements in Upper Limb Movement Classification and Data Augmentation Strategies”, University of Vic, Vic, Spain.
2021: Final Project, Estanislao Ledesma. Title: “Microwave Tomography Software”, University of Buenos Aires, Argentina.
2019 – 2021: Thesis, Andres Otero. Title: “Tensor Decompositions Applied to Deep Learning Architectures”, University of Buenos Aires, Argentina.
2018 ~: Assistant Researcher, Laura Suad. Title: “Multifrequency Study of HI Supershells and Galactic Chimneys, and Their Role in the Dynamics of the Interstellar Medium of the Milky Way”, CONICET, Buenos Aires, Argentina.
2016 ~: PhD Thesis, Romina Astrid Rebrij. Title: “Machine Learning Applied to Genomic Data Analysis and Healthcare”, University of Buenos Aires, Argentina.
2016 ~ 2017: Posdoctoral Fellowship, Augusto Maya. Title: “Statistical Inference Problems for Massive Data Sets”, CONICET, Argentina.
2014: Final Project, Marcelo Gore. Title: “Computational Model of Vehicle Traffic Based on Flocking Behavior”, University of Buenos Aires, Argentina.

LANGUAGES

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

COMPLETE LIST OF PUBLICATIONS

Peer Review Journals

- [1] "Towards improving motor imagery brain-computer interface using multimodal speech imagery", J Tong, Z Xing, X Wei, S Du, Z Sun, J Solé-Casals, **CF Caiafa**, *Journal of Medical and Biological Engineering*, 43, pages 216–226 (2023). [10.1038/nrneurol.2016.113](https://doi.org/10.1038/nrneurol.2016.113)
- [2] Brain Simulation and Spiking Neural Networks. Z Sun, V Cutsuridis, **CF Caiafa**, J Solé-Casals. *Cognitive Computation* 15, 1103–1105 (2023). [10.1007/s12559-023-10156-1](https://doi.org/10.1007/s12559-023-10156-1)
- [3] "Exploratory Analysis of SCADA Data from Wind Turbines Using the K-Means Clustering Algorithm for Predictive Maintenance Purposes", P Cosa Rodriguez, P Marti-Puig, **CF Caiafa**, M Serra-Serra, J Cusidó, J Solé-Casals, *Machine*, 11(2), 2023. [10.3390/machines11020270](https://doi.org/10.3390/machines11020270)
- [4] "Underwater sEMG-based recognition of hand gestures using tensor decomposition", J Xue, Z Sun, F Duan, **CF Caiafa**, J Solé-Casals, *Pattern Recognition Letters*, 165, 2023. [10.1016/j.patrec.2022.11.021](https://doi.org/10.1016/j.patrec.2022.11.021).
- [5] "Multi-class Classification of Upper Limb Movements with Filter Bank Task-related Component Analysis", H. Jia, F Feng, **CF Caiafa**, F Duan, Y Zhang, Z Sun, J Solé-Casals, *IEEE Journal of Biomedical and Health Informatics*. [10.1109/JBHI.2023.3278747](https://doi.org/10.1109/JBHI.2023.3278747).
- [6] Z Zhang, F Duan, **CF Caiafa**, J Solé-Casals, Z Yang, Z Sun. Domain classifier-based transfer learning for visual attention prediction. *World Wide Web*, 25, 2022. [10.1007/s11280-022-01027-0](https://doi.org/10.1007/s11280-022-01027-0)
- [7] "Graph Empirical Mode Decomposition-Based Data Augmentation Applied to Gifted Children MRI Analysis", C Xuning, L Binghua, J Hao, F Fan, F Duan, S Zhe, **CF Caiafa**, J Solé-Casals, *Frontiers in Neuroscience*, 16, 2022. [10.3389/fnins.2022.866735](https://doi.org/10.3389/fnins.2022.866735)
- [8] "A Brain-Controlled Vehicle System Based on Steady State Visual Evoked Potentials", Z Zhang, S Han, H Yi, F Duan, F Kang, Z Sun J Solé-Casals, **CF Caiafa**, *Cogn Comput* 15, 2023. [10.1007/s12559-022-10051-1](https://doi.org/10.1007/s12559-022-10051-1)
- [9] "A fast algorithm for spatiotemporal signals recovery using arbitrary dictionaries with application to electrocardiographic imaging", SF Caracciolo, **CF Caiafa**, FD Martínez Pería, PD Arini, *Biomedical Physics & Engineering Express*, 8 (6), 2022. [10.1088/2057-1976/ac835b](https://doi.org/10.1088/2057-1976/ac835b)
- [10] "Detection of Wind Turbine Failures through Cross-Information between Neighbouring Turbines", P Marti-Puig, J Cusidó, FJ Lozano, M Serra-Serra, **CF Caiafa**, J Solé-Casals, *Applied Sciences*, 12 (19) 2022. [10.3390/app12199491](https://doi.org/10.3390/app12199491)
- [11] "Improving pre-movement pattern detection with filter bank selection", H Jia, Z Sun, F Duan, Y Zhang, **CF Caiafa**, J Solé-Casals, *Journal of Neural Engineering*, 19 (6), 2022. [10.1088/1741-2552/ac9e75](https://doi.org/10.1088/1741-2552/ac9e75).
- [12] "Cerebral cortex layer segmentation using diffusion magnetic resonance imaging in vivo with applications to laminar connections and working memory analysis", J Zhang. Z Sun, F Duan, L Shi, Y Zhang, J Solé-Casals, **CF Caiafa**, *Human Brain Mapping*, 43(17), 2022. [10.1002/hbm.25998](https://doi.org/10.1002/hbm.25998)
- [13] "Tensor completion algorithms for estimating missing values in multi-channel audio signals", W Ding, Z Sun, X Wu, Z Yang, J Solé-Casals, **CF Caiafa**, *Computers & Electrical Engineering*, 97, 2022. [10.1016/j.compeleceng.2021.107561](https://doi.org/10.1016/j.compeleceng.2021.107561).
- [14] "Machine Learning Methods with Noisy, Incomplete or Small Datasets", **CF Caiafa**, Z Sun, T Tanaka, P Marti-Puig, J Solé-Casals. 2021. *Applied Sciences* 11, 9, 2021. [10.3390/app11094132](https://doi.org/10.3390/app11094132).
- [15] "Preface to Tensor methods in machine learning", Q Zhao, G Zhou, Y Zhang, **CF Caiafa**, J Cao, *Sci. China Technol. Sci.* 64, 1827, 2021. [10.1007/s11431-021-1909-4](https://doi.org/10.1007/s11431-021-1909-4).
- [16] "Cross Tensor Approximation Methods for Compression and Dimensionality Reduction", S Ahmadi-Asl, **CF Caiafa**, A Cichocki, AH Phan, T Tanaka, I Oseledets, J Wang, *IEEE Access*, 9, 2021. [10.1109/ACCESS.2021.3125069](https://doi.org/10.1109/ACCESS.2021.3125069).
- [17] "Serial-EMD: Fast Empirical Mode Decomposition Method for Multi-dimensional Signals Based on Serialization", J Zhang, F Feng, P Marti-Puig, **CF Caiafa**, Z Sun, F Duan, J Solé-Casals, *Information Sciences*, 2021. [10.1016/j.ins.2021.09.033](https://doi.org/10.1016/j.ins.2021.09.033).
- [18] "A Fast Approach to Removing Muscle Artifacts for EEG with Signal Serialization Based Ensemble Empirical Mode Decomposition", Y Dai, F Duan, A Sun, Y Zhang, **CF Caiafa**, P Marti-Puig, J Solé-Casals, *Entropy*, 2021, 23, 1170. [10.3390/e23091170](https://doi.org/10.3390/e23091170).
- [19] "A multimodal emotion recognition method based on facial expressions and electroencephalography", Y Tan, Z Sun, F Duan, J Solé-Casals, **CF Caiafa**, *Biomedical Signal Processing and Control*, 70, 2021. [10.1016/j.bspc.2021.103029](https://doi.org/10.1016/j.bspc.2021.103029).
- [20] "A hybrid method to select morphometric features using tensor completion and F-score rank for gifted children identification", J Zhang, F Feng, H Tianyi, F Duan, S Zhe, **CF Caiafa**, J Solé-Casals, *SCIENCE CHINA Technological Sciences*, 2021. [10.1007/s11431-020-1876-3](https://doi.org/10.1007/s11431-020-1876-3)
- [21] "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, 64. [10.1007/s11431-020-1839-5](https://doi.org/10.1007/s11431-020-1839-5)

- [22] "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. [10.1109/ACCESS.2020.3044732](https://doi.org/10.1109/ACCESS.2020.3044732)
- [23] "Decomposition Methods for Machine Learning with Small, Incomplete or Noisy Datasets", **CF Caiafa**, J Solé-Casals, P Martí-Puig, S Zhe, T Tanaka. *Applied Sciences*, 10 (23), 2020. [10.3390/app10238481](https://doi.org/10.3390/app10238481)
- [24] "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*, 224, 2631–2660 (2019). [10.1007/s00429-019-01907-8](https://doi.org/10.1007/s00429-019-01907-8)
- [25] "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. [10.1038/s41597-019-0073-y](https://doi.org/10.1038/s41597-019-0073-y)
- [26] "Galactic HI supershells: kinetic energies and possible origin", LA Suad, **CF Caiafa**, EM Arnal, S Cichowolski, *Astronomy & Astrophysics*, Vol. 624, Apr 2019. [10.1051/0004-6361/201833850](https://doi.org/10.1051/0004-6361/201833850)
- [27] "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). [10.1038/s41598-018-29979-2](https://doi.org/10.1038/s41598-018-29979-2)
- [28] "Brain-Computer Interface with Corrupted EEG Data: A Tensor Completion Approach", J Solé-Casals, **CF Caiafa**, Q Zhao, A Cichocki, *Cognitive Computation* (2018). [10.1007/s12559-018-9574-9](https://doi.org/10.1007/s12559-018-9574-9)
- [29] "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. [10.1140/epjb/e2017-80531-7](https://doi.org/10.1140/epjb/e2017-80531-7)
- [30] "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). [10.1371/journal.pone.0188579](https://doi.org/10.1371/journal.pone.0188579)
- [31] "Encoding of Brain Connectomes", **CF Caiafa**, F Pestilli, *Nature Scientific Reports*, Article number: 11491 (2017). [10.1038/s41598-017-09250-w](https://doi.org/10.1038/s41598-017-09250-w)
- [32] "Inverting Monotonic Nonlinearities by Entropy Maximization", J Solé-Casals, K López-de-Ipiña Pena, **CF Caiafa**, *PLOS ONE* 11(10): e0165288. [10.1371/journal.pone.0165288](https://doi.org/10.1371/journal.pone.0165288)
- [33] "Ensemble Tractography", H Takemura, **CF Caiafa**, B Wandell and F Pestilli, *PLOS Computational Biology*, Feb. 2016. [10.1371/journal.pcbi.1004692](https://doi.org/10.1371/journal.pcbi.1004692)
- [34] "Cooperative peer-to-peer multiagent based systems", LF Caram, **CF Caiafa**, AN Proto, M Ausloos, *Phys. Rev. E* 92, 022805 – Published 10 August 2015. [10.1103/PhysRevE.92.022805](https://doi.org/10.1103/PhysRevE.92.022805)
- [35] "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. [10.1109/MSP.2013.2297439](https://doi.org/10.1109/MSP.2013.2297439)
- [36] "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. [10.1109/TSP.2014.2385040](https://doi.org/10.1109/TSP.2014.2385040)
- [37] "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. [10.1478/AAPP.92S1B2](https://doi.org/10.1478/AAPP.92S1B2)
- [38] "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. [10.1051/0004-6361/201323147](https://doi.org/10.1051/0004-6361/201323147)
- [39] "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. [10.1002/widm.1108](https://doi.org/10.1002/widm.1108)
- [40] "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. [10.1109/TPAMI.2012.254](https://doi.org/10.1109/TPAMI.2012.254).
- [41] "Computing Sparse Representations of Multidimensional Signals Using Kronecker Bases", **CF Caiafa**, A Cichocki, *Neural Computation*, Vol. 25, No. 1, pp. 186-220, 2013. [10.1162/NECO_a_00385](https://doi.org/10.1162/NECO_a_00385).
- [42] "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. [10.1186/1687-6180-2012-255](https://doi.org/10.1186/1687-6180-2012-255).
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