JAIME GOMEZ-RAMIREZ, PhD
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WORK EXPERIENCE

Research & Development Policy

2015 - Expert for the European Commission in Horizon 2020
H2020-SC1-DTH-2018-1, H2020-SC1-PM-15, H2020-PHC-25-2015

Research & Academia

2021 *Research Associate at Institute of Research and Innovation in Biomedical Sciences of the University of Cadiz*
Artificial intelligence (AI) in healthcare and biomedical research

2017- 2020 *Research Associate at Instituto de Salud Carlos III (Madrid)*
Machine Learning, Predictive and Personalized medicine

2015-2016 Research Associate at The Hospital for Sick Children (Toronto, Canada)
Neural dynamics intracranial EEG and MEG

Visiting Professor at the *University of Turin* (Italy)

2014-15 Postdoctoral Research Fellow at the University of Wisconsin- Madison (US)
Mathematical and computational modeling of neural mechanisms involved in sleep and consciousness.

2012-13 Postdoctoral Research Fellow at Okayama University (Japan)
Researcher on functional and network brain connectivity

2006-2011 Professor at Universidad Pontificia de Comillas, Madrid
Lecturer 800 hours, undergraduate and graduate level in Robotics and computer programming courses

2005-2011 Research Scientist at Universidad Politécnica de Madrid

Private Sector IT

2000-2004 Consultant and Manager

Solutions architect at Hewlett-Packard, France.
Network lifecycle management through network, network security design, system performance characterization and testing.

Project Manager at Accenture, Spain.
Interfacing with the stakeholders and clients. Provide technical evaluation and strategic recommendations.

EDUCATION and TRAINING

- PhD with 3 postdoctoral periods in Okayama University (Japan), University of Madison-Wisconsin (US) and The Hospital for Sick Children- University of Toronto (Canada).
- Experience in both Academia as a Professor and Researcher and in the private sector in consulting firms (Hewlett-Packard, Accenture).

2010 PhD Universidad Politécnica de Madrid

2009Visiting Scientist at University of Palermo

2008 Visiting Scientist at Humboldt University of Berlin

2007 Visiting Scientist at University of California Berkeley

2000 BSc, MSc in Computer Engineering at Universidad Politécnica Madrid

LANGUAGES

- Proficient in English, French, Italian and Spanish

PROJECT LEADER

- Grand Challenge 30 KAIST –The Physical Basis of knowledge (Korea Advanced Institute of Science and Technology (KAIST)). 01/06/2017-01/01/2021.

  Funding: 420.000 €.

- Study of the anatomo-functional connectome of AD-relatives: an early intervention on cognitive al lifestyles (Spanish National Plan, cod. RTI2018-098762-B-C31). 01/09/2019-01/09/2021.

  Funding: 115.000 euros

- PILEP+90: Spain-Portugal longevity research program +90. "Application of data mining techniques for the identification of factors of healthy and pathological ageing (ImageH)", 01/01/2019-01/01/2021.

  Funding: 96.000 €

- Imaging Excessive Hippocampal Excitability in aMCI (University of Toronto). 08/01/2016-08/01/2019.

  Funding: 930.000 €.

- Patient-Specific Adaptive Closed-Loop Neurostimulation for Optimum Treatment of Intractable Epilepsy Roman Genov. (Canadian Institutes of Health Research). 08/01/2016-08/01/2019.

  Funding: 260.000 €.

PUBLICATIONS

1. Books as single author

- Gomez-Ramirez,J. A New Foundation for Representation in Cognitive and Brain Science: Category Theory and the Hippocampus, Springer, 2014.

2. Journal Publications

- Gomez-Ramirez J.; et al. Intra- and interhemispheric symmetry of subcortical brain structures: a volumetric analysis in the aging human brain. Brain Structure and Function (2021), Impact Factor=3.3.
- Gomez-Ramirez J.; et al. A Comparative Analysis of MRI Automated Segmentation of Subcortical Brain Volumes in a Large Dataset of Elderly Subjects. Neuroinformatics. (2021), Impact Factor=3.3.
- Mateos D, Gomez-Ramirez J, Rosso A. Using time causal quantifiers to characterize sleep stages. Chaos, Solitons & Fractals (2021), Impact Factor=3.76.
- Fernandez-Blazquez M. and Gomez-Ramirez J.; Impact of individual and neighborhood dimensions of socioeconomic status on the prevalence of mild cognitive impairment over seven-year follow-up, Aging & Mental Health (2020), Impact Factor=2.95.
- Gomez-Ramirez J; et al Selecting the most important self-assessed features for predicting conversion to Mild Cognitive Impairment with Random Forest and Permutation-based methods. Scientific Reports (2020). Impact Factor=4.
- Gomez-Ramirez J.; et al Exploring the alpha desynchronization hypothesis in resting state networks with intracranial electroencephalography and wiring cost estimate Scientific Reports. Nature. 7-15670. (2017), Impact Factor=4.2.
- Gomez-Ramirez J. and Costa T. Boredom begets creativity: a solution to the exploitation-exploration trade-off in predictive coding Biosystems 162-12, Pages 168-176 (2017).
- Gomez-Ramirez J., Li Y, Wu Q. and Wu J. A quantitative study of network robustness in resting state fMRI in young and elder conditions. 3;7:256 Neurobiol Aging. (2015) Impact Factor= 5.013.
- Marshall, W., Gomez-Ramírez J., Tononi, G. 2016. Integrated Information and State Differentiation 2016; 7: 926 Frontiers in Psychology , Impact Factor=2.13.
- Eheresmann A. and Gomez-Ramirez J. Conciliating neuroscience and phenomenology via category theory. Prog Biophys Mol Bio. 119, Issue 3, 2015, Pages 347-359, Impact Factor=3.377.
- Gomez-Ramirez J. and Wu J. Network-Based Biomarkers in Alzheimer's Disease: Review and Future Directions, Front Aging Neurosci.; 6: 12 (2014) Impact Factor=2.9.
- Simeonov P, Gomez-Ramirez J, Siregar P. On some recent insights in Integral Biomathics, Prog Biophys Mol Bio. 113:1, 216–228 (2013) Impact Factor=3.377.
- Gomez-Ramirez J.and Sanz, R. On the limitations of standard statistical modeling in biological systems: A full bayesian approach for biology. Prog Biophys Mol Bio. 113:1, 80-91 (2013) Impact Factor=3.377.

- Gomez-Ramirez J, Sanz, R., Hippocampal Categories: A Mathematical Foundation for Navigation and Memory. Adv Exp Med Biol., 718, pp 149- 64 (2011) Impact Factor= 2.012.
- Sanz R, Hernández C, Gómez-Ramirez J. Introduction: from brains to the machines of the future., Adv Exp Med Biol. 2011;718:1-6. doi: 10.1007/978- 1-4614-0164-3_1. (2011) Impact Factor=2.012.
- Sanz R, Hernandez C, Gomez J, Hernando A., A Functional Approach to Emotion in Autonomous Systems. Adv. Exp. Med. Biol. 2010;657, pp 249- 65 (2010) Impact Factor=2.012.
- Gomez-Ramirez J. Don't blame the economists. It is an inverse problem! Eur J Futures Res 15:13 (2013).
- Gomez-Ramirez J, Comments on Aur's From Neuroelectrodynamics To Thinking Machines. Cogn. Comput. 4, 4: pp563-565 (2012) Impact Factor=1.1.
- Sanz R, Hernández C, Gomez J et al., Systems, Models And Self- Awareness: Towards Architectural Models of Consciousness; International Journal of Machine Consciousness; 1:2, 255-279 (2009).
- Sanz, R, Gomez J, Vindication of a Rigorous Cognitive Science, Journal of Mind Theory,0:2, vii.xii (2009).

3. Book chapters

- Gomez-Ramirez J, Sanz R, What the Escherichia coli tells neurons about Learning, Integral Biomathics: Tracing the Road to Reality, Simeonov,P. Smith L, Eheresmann A. (Eds.), Springer- Verlag, Heidelberg, 2012, pp 41- 55.
- Simeonov P, Gomez-Ramirez, J. et al., Stepping Beyond the Newtonian Paradigm in Biology. Towards an Integrable Computational Model of Life: Accelerating Discovery in the Biological Foundations of Science, Integral Biomathics: Tracing the Road to Reality, Simeonov,P. Smith L, Eheresmann A. (Eds.), Springer-Verlag, Heidelberg, 2012, pp 319-417.
- Simeonov PL, Ehresmann AC, Smith LS, Gomez-Ramirez J, Repa V; A., New Biology: A Modern Perspective on the Challenge of Closing the Gap between the Islands of Knowledge, Towards a Servive-Based Internet, Cezon M., Wolfsthal Y. (Eds.), Springer-Verlag, Heidelberg, 2011, pp 188-195.
- Sanz R, Hernandez C, Hernando A, Gomez-Ramirez J., Bermejo J., Grounding Robot Autonomy, Emotion and Self-awareness, Advances in Robotics, Jong-Hwan Kim et al. (Eds.) Springer-Verlag, Heidelberg, 2009, pp: 23-43.
- Sanz R, Gomez Ramirez J. et al., Thinking with the body, Handbook of Cognitive Science: An Embodied Approach, Calvo P. and Gomila T. (Eds.), Elsevier Science, 2008, pp 395-419.
- Sanz R, Bermejo J, López I, Gomez J, A Real-Time Agent System Perspective of Meaning and Sapience, Toward Artificial Sapience: Principles and Methods for Wise Systems. Rene V. Mayorga y Leonid Perlovsky (Eds.), Springer-Verlag, London, 2008, pp 61-75.