Javier Sánchez Monedero

Curriculum Vitae

✉ *javism at posteo dot net*
javism.github.io
javism

Education

2013 **PhD Computer Science. Information and Communication Technologies**, *University of Granada*.

Thesis Dissertation: "Challenges in ordinal classification: artificial neural networks and projection-based methods". Evaluation: Cum Laude. Available at http://www.uco.es/ayrna/publications/thesis/ThesisDissertationJSM.pdf

2007–2009 **Master's degree on Multimedia Technologies**, *Escuela Técnica Superior de Ingenierías Informática y de Telecomunicación*, University of Granada.

Master Thesis: "Bloom Filter Based Discovery Protocol for DDS Middleware". Evaluation: Distinction.

2005–2008 **MSc, Computer Engineer (equivalent to BSc+MSc)**, *Escuela Técnica Superior de Ingenierías Informática y de Telecomunicación*, University of Granada.

MSc project: "An XML-Based Approach to the Configuration and Deployment of DDS Applications". Evaluation: Distinction.

2000–2004 **BsC, Computer Engineer**, *Polytechnic School*, University of Córdoba.

BSc project: "Implementation of LDAP as authentication system for the University of Córdoba". Evaluation: Distinction.

Credentials and Other Qualifications

2014 *Profesor Contratado Doctor* (**Associate Professor**) and **Private University Associate Professor**. National Agency for Quality Assessment and Accreditation of Spain (ANECA)

2011–2013 **University Teaching Expert degree**, *University of Córdoba*.

2008–2009 **Teaching Certificate**, *Universidad de Granada*.

Research Experience

2021–2025 **Reseach Fellow**, *University of Córdoba.*, Córdoba, Spain, Postdoctoral fellow "Beatriz Galindo".

2018–2020 **Researcher Associate**, *Cardiff University. Cardiff University's Data Innovation Research Institute and the Data Justice Lab.*, Cardiff, Wales, Postdoctoral researcher at ERC-funded project 'DATAJUSTICE'. https://datajusticeproject.net/ .

2018 **Associate Professor**, *University of Córdoba*, Córdoba, Spain, Research and teaching activities..

2017 **Visiting Researcher**, *Department of Meteorology. University of Reading. Supervisor Jonathan Ian Robson*, Reading, UK, Public funding. 1 week.

2016 **Visiting Researcher**, *University of Birmingham. School of Computer Science. Supervisor Professor Peter Tiňo*, Birmingham, UK, Public funding. 6 weeks.

2015-2017 **Associate Professor**, *Universidad Loyola Andalucía*, Córdoba/Seville, Spain, Research and teaching activities..

2014–2015 **Postdoc fellow**, *Universidad de Córdoba*, Córdoba, Spain, Teaching and research at University of Córdoba. Public funding. 1 year.

2014 **Researcher**, *Universidad de Córdoba*, Córdoba, Spain, Develop time-series segmentation algorithms. Public funding. 3 months.

2010–2014 **Researcher**, *Universidad de Córdoba*, Córdoba, Spain, PhD. student in the field of machine learning. Public funding. 4 years.

2011 **Visiting Researcher**, *University of Birmingham. School of Computer Science. Supervisor Professor Peter Tiňo*, Birmingham, UK, Public funding. 3 months.

2008–2009 **Research Student**, *Universidad de Granada*, Granada, Spain, Private funding.

2007–2008 **Research Student**, *Universidad de Granada*, Granada, Spain, Public funding.

2007–2008 **Research Intern**, *Real-Time Innovations*, Sunnyvale, California (USA), Private funding. 6 months.

2007 **Research Student**, *Universidad de Granada*, Granada, Spain, Private funding.

Publications

Journal papers

[1] P. Rodriguez, S. Graña, E.E. Alvarez-León, M. Battaglini, F.J. Darias, R. Lopez M. Hernan, P. Llaneza, M.C. Martin, O. Ramirez-Rubio, A. Romaní, B. Suárez-Rodriguez, J. Sánchez-Monedero, A. Arenas, and L. Lacasa. A population-based controlled experiment assessing the epidemiological impact of digital contact tracing. *Nature Communications*, (12):587, 2021. JCR (2019): 12.121 Position: 6/71 (Q1) Category: MULTIDISCIPLINARY SCIENCES. doi:10.1038/s41467-020-20817-6.

[2] A. Valdivia, **J. Sánchez-Monedero**, and J. Casillas. How fair can we go in machine learning? Assessing the boundaries of fairness in decision trees. *International Journal of Intelligent Systems*, (In Press), June 2021. JCR(2019): 10.312 Position: 6/137 (Q1) Category: COMPUTER SCIENCE, ARTIFICIAL INTELLIGENCE. URL: https://doi.org/10.1002/int.22354.

[3] **J. Sánchez-Monedero** and L. Dencik. The politics of deceptive borders: 'biomarkers of deceit' and the case of iBorderCtrl. *Information, Communication and Society*, Accepted, 2020. JCR(2019): 4.559 Position: 7/92 (Q1) Category: COMMUNICATION. URL: https://doi.org/10.1080/1369118X.2020.1792530.

[4] **J. Sánchez-Monedero**, P. A. Gutiérrez, and M. Pérez-Ortiz. ORCA: A Matlab/Octave Toolbox for Ordinal Regression. *Journal of Machine Learning Research*, (20):1–5, 2019. JCR(2019): 3.484 Position: 40/136 (Q2) Category: COMPUTER SCIENCE, ARTIFICIAL INTELLIGENCE; ESI TOTAL CITATIONS 7/419 (Q1) COMPUTER SCIENCE. URL: http://jmlr.org/papers/v20/18-349.html.

[5] **J. Sánchez-Monedero**, M. Pérez-Ortiz, A. Saez, P.A. Gutiérrez, and C. Hervás-Martínez. Partial order label decomposition approaches for melanoma diagnosis. *Applied Soft Computing*, 64:341–355, March 2018. JCR(2018): 4.873 Position: 11/106 (Q1) Category: COMPUTER SCIENCE, INTERDISCIPLINARY APPLICATIONS. URL: https://doi.org/10.1016/j.asoc.2017.11.042.

[6] M. Pérez-Ortiz, A. Durán-Rosal, P.A. Gutiérrez, **J. Sánchez-Monedero**, A. Nikolaou, F. Fernández-Navarro, and C. Hervás-Martínez. On the use of evolutionary time series analysis for segmenting paleoclimate data. *Neurocomputing*, 326–327:3–14, 2019. JCR(2018): 4.072 Position: 28/133 (Q1) Category: COMPUTER SCIENCE, ARTIFICIAL INTELLIGENCE. URL: https://doi.org/10.1016/j.neucom.2016.11.101.

[7] A. Saez, **J. Sánchez-Monedero**, P.A. Gutiérrez, and C. Hervás-Martínez. Machine learning methods for binary and multiclass classification of melanoma thickness from dermoscopic images.

Medical Imaging, IEEE Transactions on, 35(4):1036–1045, 2016. JCR(2016): 3.942 Position: 9/105 (Q1) Category: COMPUTER SCIENCE, INTERDISCIPLINARY APPLICATIONS. doi:10.1109/TMI.2015.2506270.

[8] Mercedes Torres-Jiménez, Carlos R. García-Alonso, **J. Sánchez-Monedero**, Salud Millán-Lara, and César Hervás-Martínez. Logistic evolutionary product-unit neural network classifier: the case of agrarian efficiency. *Progress in Artificial Intelligence*, 4(3):59–67, 2015. URL: http://dx.doi.org/10.1007/s13748-015-0068-7, doi:10.1007/s13748-015-0068-7.

[9] M. Pérez-Ortiz, P. A. Gutiérrez, **J. Sánchez-Monedero**, and C. Hervás-Martínez. A study on multi-scale kernel optimisation via centered kernel-target alignment. *Neural Processing Letters*, 44(2):491–517, 2015. JCR(2016): 1.620 Position: 74/133 (Q3) Category: COMPUTER SCIENCE, ARTIFICIAL INTELLIGENCE. URL: http://dx.doi.org/10.1007/s11063-015-9471-0.

[10] P.A. Gutiérrez, M. Pérez-Ortiz, **J. Sánchez-Monedero**, F. Fernandez-Navarro, and C. Hervás-Martínez. Ordinal regression methods: survey and experimental study. *IEEE Transactions on Knowledge and Data Engineering*, 28(1):127 – 146, 2016. JCR(2016): 3.438 Position: 21/146 (Q1) Category: COMPUTER SCIENCE, INFORMATION SYSTEMS. URL: http://dx.doi.org/10.1109/TKDE.2015.2457911.

[11] M. Pérez-Ortiz, P. A. Gutiérrez, M. Cruz-Ramírez, **J. Sánchez-Monedero**, and C. Hervás-Martínez. Kernelising the Proportional Odds Model through Kernel Learning techniques. *Neurocomputing*, 164:23–33, 2015. JCR(2015): 2.392 Position: 31/130 (Q1) Category: COMPUTER SCIENCE, ARTIFICIAL INTELLIGENCE. URL: http://10.1016/j.neucom.2014.09.085.

[12] **J. Sánchez-Monedero**, S. Salcedo-Sanz, P. A. Gutiérrez, C. Casanova-Mateo, and C. Hervás-Martínez. Simultaneous modelling of rainfall occurrence and amount using a hierarchical nominal-ordinal support vector classifier. *Engineering Applications of Artificial Intelligence*, 34:199–207, September 2014. JCR(2014): 2.207 Position: 12/83 (Q1) Category: ENGINEERING, MULTIDISCIPLINARY. URL: http://dx.doi.org/10.1016/j.engappai.2014.05.016.

[13] **J. Sánchez-Monedero**, P. Campoy-Muñoz, P. A. Gutiérrez, and C. Hervás-Martínez. A guided data projection technique for classification of sovereign ratings: the case of European Union 27. *Applied Soft Computing*, 22:339–350, September 2014. JCR(2014): 2.810 Position: 17/123 (Q1) Category: COMPUTER SCIENCE, ARTIFICIAL INTELLIGENCE. URL: http://dx.doi.org/10.1016/j.asoc.2014.05.008.

[14] M. Cruz-Ramírez, C. Hervás-Martínez, **J. Sánchez-Monedero**, and P.A. Gutiérrez. Metrics to guide a multi-objective evolutionary algorithm for ordinal classification. *Neurocomputing*, 135:21–31, July 2014. JCR(2014): 2.083 Position: 36/123 (Q2) Category: COMPUTER SCIENCE, ARTIFICIAL INTELLIGENCE. URL: http://dx.doi.org/10.1016/j.neucom.2013.05.058.

[15] **J. Sánchez-Monedero**, P. A. Gutiérrez, P. Tiňo, and C. Hervás-Martínez. Exploitation of pairwise class distances for ordinal classification. *Neural Computation*, 25(9):2450–2485, 2013. JCR (2013): 1.694 Position: 43/121 (Q2) Category COMPUTER SCIENCE, ARTIFICIAL INTELLIGENCE. URL: http://dx.doi.org/10.1162/NECO_a_00478.

[16] P.A. Gutiérrez, S. Salcedo-Sanz, C. Hervás-Martínez, L. Carro-Calvo, **J. Sánchez-Monedero**, and L. Prieto. Ordinal and nominal classification of wind speed from synoptic pressure patterns. *Engineering Applications of Artificial Intelligence*, 26(3):1008–1015, 2013. JCR (2013): 1.962 Position: 15/87 (Q1) Category ENGINEERING, MULTIDISCIPLINARY. URL: http://dx.doi.org/10.1016/j.engappai.2012.10.018.

[17] **J. Sánchez-Monedero**, P.A. Gutiérrez, F. Fernández-Navarro, and C. Hervás-Martínez. Weighting efficient accuracy and minimum sensitivity for evolving multi-class classifiers. *Neural Processing Letters*, 34(2):101–116, 2011. JCR (2011): 0.750 Position: 76/111 (Q3) Category COMPUTER SCIENCE, ARTIFICIAL INTELLIGENCE. URL: http://dx.doi.org/10.1007/s11063-011-9186-9.

[18] **J. Sánchez-Monedero**, J. Povedano-Molina, J. M. López-Vega, and J. M. López-Soler. Bloom filter-based discovery protocol for DDS middleware. *Journal of Parallel and Distributed Computing*,

71(10):1305–1317, 2011. JCR (2011): 1.135 Position: 40/99 (Q2) Category COMPUTER SCIENCE, THEORY & METHODS. URL: http://dx.doi.org/10.1016/j.jpdc.2011.05.001.

[19] F. Fernandez-Navarro, C. Hervás-Martínez, **J. Sánchez-Monedero**, and P.A. Gutiérrez. MELM-GRBF: A modified version of the Extreme Learning Machine for Generalized Radial Basis Function Neural Networks. *Neurocomputing*, 74:2502–2510, 2011. JCR (2011): 1.580 Position: 39/111 (Q2) Category COMPUTER SCIENCE, ARTIFICIAL INTELLIGENCE. URL: http://dx.doi.org/10.1016/j.neucom.2010.11.032.

[20] **J. Sánchez-Monedero**, C. Hervás-Martínez, P.A. Gutiérrez, M. Carbonero-Ruz, M. C. Ramírez-Moreno, and M. Cruz-Ramírez. Evaluating the Performance of Evolutionary Extreme Learning Machines by a Combination of Sensitivity and Accuracy Measures. *Neural Network World*, 20:899–912, 2010. JCR (2010): 0.511 Position: 94/108 (Q4) Category COMPUTER SCIENCE, ARTIFICIAL INTELLIGENCE. URL: http://www.nnw.cz/obsahy10.html.

[21] M. Cruz-Ramírez, **J. Sánchez-Monedero**, F. Fernandez-Navarro, J.C. Fernandez-Caballero, and C. Hervás-Martínez. Memetic Pareto differential evolutionary artificial neural networks to determine growth multi-classes in predictive microbiology. *Evolutionary Intelligence*, 3(3-4):187–199, 2010. URL: http://dx.doi.org/10.1007/s12065-010-0045-9.

Drafts and Preprints

Reports of EU funded Research projects

[22] **J. Sánchez-Monedero** and L. Dencik. The datafication of the workplace. Technical report, Data Justice Project. Cardiff University, May 2019. URL: http://orca.cf.ac.uk/125552/.

[23] **J. Sánchez-Monedero** and L. Dencik. How to (partially) evaluate automated decision systems. Technical report, Data Justice Project. Cardiff University, December 2018. URL: http://orca.cf.ac.uk/118783/.

[24] **J. Sánchez-Monedero**. The datafication of borders and management of refugees in the context of Europe. Technical report, Data Justice Project. Cardiff University, November 2018. URL: http://orca.cf.ac.uk/128361.

International conference publications

[25] **J. Sánchez-Monedero** L. Dencik and L. Edwards. What does it mean to "solve" the problem of discrimination in hiring? social, technical and legal perspectives from the uk on automated hiring systems. In *Proceedings of the 2020 Conference on Fairness, Accountability, and Transparency*. ***Best non-CS paper award***, FAT* '20, pages 458–468, New York, NY, USA, 2020. Association for Computing Machinery. URL: https://doi.org/10.1145/3351095.3372849.

[26] **J. Sánchez-Monedero**. Data-driven hiring, labour relations, and social justice. In *Data Power 2019*, 2019. URL: https://data-power.smart-abstract.com/sessionplanner/#/event/12323.

[27] **J. Sánchez-Monedero**, M. Pérez-Ortiz, A. Sáez, P. A. Gutiérrez, and C. Hervás-Martínez. Advanced feature extraction and machine learning models to melanoma and breslow index detection. In *8th IMIBIC Younh Investigators Meeting*, 2017.

[28] P. A. Gutiérrez, M. Pérez-Ortiz, **J. Sánchez-Monedero**, and C. Hervás-Martínez. Representing ordinal input variables in the context of ordinal classification. In *International Joint Conference on Neural Networks (IJCNN)*, pages 2174–2181, Jul 2016.

[29] M. Pérez-Ortiz, **J. Sánchez-Monedero**, A. A. Sáez, P. A. Gutiérrez, and C. Hervás-Martínez. Tackling the ordinal and imbalance nature of a melanoma image classification problem. In *International Joint Conference on Neural Networks (IJCNN)*, pages 2156–2163, Jul 2016. URL: https://doi.org/10.1109/IJCNN.2016.7727466.

[30] **J. Sánchez-Monedero**, A. Sáez, M. Pérez-Ortiz, P. A. Gutiérrez, and C. Hervás-Martínez. *Hybrid Artificial Intelligent Systems: 11th International Conference, HAIS 2016, Seville, Spain, April 18-20, 2016, Proceedings*, chapter Classification of Melanoma Presence and Thickness Based on Computational Image Analysis, pages 427–438. Springer International Publishing, 2016. URL: http://dx.doi.org/10.1007/978-3-319-32034-2_36.

[31] M. Pérez-Ortiz, M. Torres-Jiménez, P. A. Gutiérrez, **J. Sánchez-Monedero**, and C. Hervás-Martínez. *Hybrid Artificial Intelligent Systems: 11th International Conference, HAIS 2016, Seville, Spain, April 18-20, 2016, Proceedings*, chapter Fisher Score-Based Feature Selection for Ordinal Classification: A Social Survey on Subjective Well-being, pages 597–608. Springer International Publishing, 2016. URL: http://dx.doi.org/10.1007/978-3-319-32034-2_50.

[32] Manuel Dorado-Moreno, Pedro Antonio Gutiérrez, **Sánchez-Monedero, Javier**, and César Hervás-Martínez. Overcoming the linearity of ordinal logistic regression adding non-linear covariates from evolutionary hybrid neural network models. In José M. Puerta, José A. Gámez, Bernabe Dorronsoro, Edurne Barrenechea, Alicia Troncoso, Bruno Baruque, and Mikel Galar, editors, *Advances in Artificial Intelligence - 16th Conference of the Spanish Association for Artificial Intelligence, CAEPIA 2015, Albacete, Spain, November 9-12, 2015, Proceedings*, volume 9422 of *Lecture Notes in Computer Science*, pages 301–311. Springer International Publishing, 2015. URL: http://dx.doi.org/10.1007/978-3-319-24598-0_27.

[33] Manuel Dorado-Moreno, P.A. Gutiérrez, **J. Sánchez-Monedero**, and César Hervás-Martínez. Nonlinear ordinal logistic regression using covariates obtained by radial basis function neural networks models. In Ignacio Rojas, Gonzalo Joya, and Andreu Catala, editors, *Advances in Computational Intelligence. 13th International Work-Conference on Artificial Neural Networks, IWANN 2015*, volume 9095 of *Lecture Notes in Computer Science*, pages 80–91. Springer International Publishing, 2015. URL: http://dx.doi.org/10.1007/978-3-319-19222-2_7, doi:10.1007/978-3-319-19222-2_7.

[34] M. Pérez-Ortiz, P.A. Gutiérrez, **J. Sánchez-Monedero**, C. Hervás-Martínez, Athanasia Nikolaou, Isabelle Dicaire, and Francisco Fernández-Navarro. Time series segmentation of paleoclimate tipping points by an evolutionary algorithm. In Marios Polycarpou, AndréC.P.L.F. Carvalho, Jeng-Shyang Pan, Michał Woźniak, Héctor Quintian, and Emilio Corchado, editors, *Hybrid Artificial Intelligence Systems*, volume 8480 of *Lecture Notes in Computer Science*, pages 318–329. Springer International Publishing, 2014. URL: http://dx.doi.org/10.1007/978-3-319-07617-1_29.

[35] **J. Sánchez-Monedero**, P.A. Gutiérrez, and C. Hervás-Martínez. Evolutionary ordinal extreme learning machine. In Jeng-Shyang Pan, MariosM. Polycarpou, Michał Woźniak, AndréC.P.L.F. Carvalho, Héctor Quintián, and Emilio Corchado, editors, *International Conference on Hybrid Artificial Intelligence Systems (HAIS2013)*, volume 8073 of *Lecture Notes in Computer Science*, pages 500–509. Springer Berlin Heidelberg, 2013. URL: http://dx.doi.org/10.1007/978-3-642-40846-5_50.

[36] **J. Sánchez-Monedero**, P.A. Gutiérrez, M. Pérez-Ortiz, and C. Hervás-Martínez. An *n*-spheres based synthetic data generator for supervised classification. In Ignacio Rojas, Gonzalo Joya, and Joan Gabestany, editors, *Advances in Computational Intelligence. 12th International Work-Conference on Artificial Neural Networks, IWANN 2013*, volume 7902 of *Lecture Notes in Computer Science*, pages 613–621. Springer, 2013. URL: http://dx.doi.org/10.1007/978-3-642-38679-4_62.

[37] M. Pérez-Ortiz, P.A. Gutiérrez, M. Cruz-Ramírez, **J. Sánchez-Monedero**, and C. Hervás-Martínez. Kernelising the Proportional Odds Model through kernel learning techniques. In Ignacio Rojas, Gonzalo Joya, and Joan Gabestany, editors, *Advances in Computational Intelligence. 12th International Work-Conference on Artificial Neural Networks, IWANN 2013*, volume 7902 of *Lecture Notes in Computer Science*, pages 270–279. Springer, 2013. URL: http://dx.doi.org/10.1007/978-3-642-38679-4_26.

[38] M. Pérez-Ortiz, P.A. Gutiérrez, **J. Sánchez-Monedero**, and C. Hervás-Martínez. Multi-scale Support Vector Machine Optimization by Kernel Target-Alignment. In *European Symposium on Artificial Neural Networks, Computational Intelligence and Machine Learning (ESANN)*, pages 391–396, 2013. URL: http://www.i6doc.com/en/livre/?GCOI=28001100131010.

[39] P.A. Gutiérrez, **J. Sánchez-Monedero**, C. Hervás-Martínez, M. Cruz-Ramírez, J.C. Fernandez-Caballero, and F. Fernandez-Navarro. Approaching system administration as a group project in computer engineering higher education. In *Proceedings on the International Conference on EUropean Transnational Education (ICEUTE'12)*, 2012. URL: http://dx.doi.org/10.1007/978-3-642-33018-6_34.

[40] P.A. Gutiérrez, M. Pérez-Ortiz, F. Fernández-Navarro, **J. Sánchez-Monedero**, and C. Hervás-Martínez. An Experimental Study of Different Ordinal Regression Methods and Measures. In Emilio Corchado, Václav Snášel, Ajith Abraham, Michał Woźniak, Manuel Graña, and Sung-Bae Cho, editors, *Hybrid Artificial Intelligent Systems*, volume 7209 of *Lecture Notes in Computer Science*, pages 296–307. Springer Berlin Heidelberg, 2012. URL: http://dx.doi.org/10.1007/978-3-642-28931-6_29.

[41] **J. Sánchez-Monedero**, M. Carbonero-Ruz, D. Becerra-Alonso, F. Martínez-Estudillo, P.A. Gutiérrez, and C. Hervás-Martínez. Numerical variable reconstruction from ordinal categories based on probability distributions. In *Proceedings of the 11th International Conference on Intelligent Systems Design and Applications (ISDA 2011)*, pages 1182–1187, Cordoba, Spain, nov 2011. URL: http://dx.doi.org/10.1109/ISDA.2011.6121819.

[42] M. Cruz-Ramírez, C. Hervás-Martínez, **J. Sánchez-Monedero**, and P.A. Gutiérrez. A Preliminary Study of Ordinal Metrics to Guide a Multi-Objective Evolutionary Algorithm. In *Proceedings of the 11th International Conference on Intelligent Systems Design and Applications (ISDA 2011)*, pages 1176–1181, Cordoba, Spain, nov 2011. URL: http://dx.doi.org/10.1109/ISDA.2011.6121818.

[43] Pedro A. Gutiérrez, S. Salcedo-Sanz, C. Hervás-Martínez, L. Carro-Calvo, **J. Sánchez-Monedero**, and Luis Prieto. Evaluating nominal and ordinal classifiers for wind speed prediction from synoptic pressure patterns. In *11th International Conference on Intelligent Systems Design and Applications (ISDA 2011)*, pages 1265–1270, nov 2011. URL: http://dx.doi.org/10.1109/ISDA.2011.6121833.

[44] M. Cruz-Ramirez, J. C. Fernandez, F. Fernandez-Navarro, **J. Sánchez-Monedero**, and C. Hervas-Martinez. Selecting the best artificial neural network model from a multi-objective Differential Evolution Pareto front. In *2011 IEEE Symposium on Differential Evolution (SDE)*, pages 1–8, April 2011. URL: http://dx.doi.org/10.1109/SDE.2011.5952067.

[45] F. García-Aranda, **J. Sánchez-Monedero**, and J. M. López-Soler. An extensible DDS-based monitoring and intrusion detection system. In *Workshop on Real-time, Embedded and Enterprise-Scale Time-Critical Systems*, Washington (DC, USA), March 2011. Object Management Group (OMG). URL: http://www.omg.org/news/meetings/realtime2011/program.htm.

[46] Alejandro de Campos Ruiz, Gerardo Pardo-Castellote, GianPiero Napoli, Fernando Crespo-Sanchez, and **J. Sánchez-Monedero**. High-level programming of DDS systems. In *Workshop on Real-time, Embedded and Enterprise-Scale Time-Critical Systems*, Washington (DC, USA), March 2011. Object Management Group (OMG). URL: http://www.omg.org/news/meetings/realtime2011/program.htm.

[47] **J. Sánchez-Monedero**, P.A. Gutiérrez, C. Hervás-Martínez, M. Cruz-Ramírez, J.C. Fernández, and F. Fernández-Navarro. Methodology for the recognition and diagnosis of students performance by discriminant analisys and artificial neural networks. In *1st International Conference on EUropean Transnational Education (ICEUTE2010)*, pages 111–119, Burgos (Spain), 2010.

[48] **J. Sánchez-Monedero**, M. Cruz-Ramirez, F. Fernandez-Navarro, J.C. Fernandez, P.A. Gutierrez, and C. Hervas-Martinez. On the suitability of Extreme Learning Machine for gene classification using feature selection. In *2010 10th International Conference on Intelligent Systems Design and Applications (ISDA)*, pages 507 –512, December 2010. URL: http://dx.doi.org/10.1109/ISDA.2010.5687215.

[49] M. Cruz-Ramírez, J.C. Fernández, **J. Sánchez-Monedero**, F. Fernández-Navarro, C. Hervás-Martínez, P.A. Gutiérrez, and M.T. Lamata. Ensemble determination using the TOPSIS decision support system in multi-objective evolutionary neural network classifiers. In *2010 10th International Conference on Intelligent Systems Design and Applications (ISDA)*, pages 513–518, 2010. URL: http://dx.doi.org/10.1109/ISDA.2010.5687212.

[50] M. Cruz-Ramírez, C. Hervás-Martínez, J.C. Fernández, and **J. Sánchez-Monedero**. Learning Artificial Neural Networks Multiclassifiers by Evolutionary Multiobjective Differential Evolution Guided by Statistical Distributions. In *International Joint Conference on Neural Networks (IJCNN2010)*,

pages 2540–2547, Barcelona (Spain), 2010. URL: http://dx.doi.org/10.1109/IJCNN.2010.5596452.

[51] M. Cruz-Ramírez, **J. Sánchez-Monedero**, F. Fernández-Navarro, J.C. Fernández, and C. Hervás-Martínez. Hybrid Pareto Differential Evolutionary Artificial Neural Networks to determined growth multi-classes in Predictive Microbiology. In Nicolás García-Pedrajas, Francisco Herrera, Colin Fyfe, José Manuel Benítez, and Moonis Ali, editors, *Trends in Applied Intelligent Systems. 23rd International Conference on Industrial and Engineering and Other Applications of Applied Intelligent Systems(IEA-AIE2010)*, volume 6098 of *Lecture Notes in Computer Science*, pages 646–655, June 2010. URL: http://dx.doi.org/10.1007/978-3-642-13033-5_66.

[52] **J. Sánchez-Monedero**, C. Hervás-Martínez, F.J. Martínez-Estudillo, M. Carbonero Ruz, M. C. Ramírez Moreno, and M. Cruz-Ramírez. Evolutionary learning using a sensitivity-accuracy approach for classification. In *5th International Conference on Hybrid Artificial Intelligence Systems (HAIS2010)*, pages 288–295, 2010. URL: http://dx.doi.org/10.1007/978-3-642-13803-4_36.

[53] **J. Sánchez-Monedero**, J.M. Lopez-Soler, J. Povedano-Molina, and J.M. Lopez-Vega. An XML-Based Approach to the Configuration and Deployment of DDS Applications. In *Workshop on Distributed Object Computing for Real-time and Embedded Systems, Washington, DC, USA*. Object Management Group (OMG), 2008. URL: http://www.omg.org/news/meetings/workshops/Real-time_WS_Final_Presentations_2008/Session%202/02-03_Monedero_et_al.pdf.

[54] J. M. López-Vega, **J. Sánchez-Monedero**, J. Povedano-Molina, and J. M. López-Soler. QoS Policies for Audio/Video Distribution Over DDS Middleware. In *Workshop on Distributed Object Computing for Real-time and Embedded Systems, Washington, DC, USA*. Object Management Group (OMG), July 2008. URL: http://www.omg.org/news/meetings/workshops/rt_embedded_2008.htm.

[55] **J. Sánchez-Monedero**, J.M. López-Soler, and J. Povedano-Molina. Scalable DDS Discovery Protocols Based on Bloom Filters. In *Real-time and Embedded Systems Workshop, Arlington VA, USA*. Object Management Group (OMG), 2007. URL: http://www.omg.org/news/meetings/workshops/rt_2007.htm.

National conference publications

[56] P.A.. Gutiérrez, M. Pérez-Ortiz, **J. Sánchez-Monedero**, and C. Hervás-Martínez. Estudio comparativo de distintos métodos de umbral en regresión ordinal. In *IX Congreso Español de Metaheurísticas, Algoritmos Evolutivos y Bioinspirados (MAEB 2013)*, 2013.

[57] F. Fernández-Navarro, C. Hervás-Martínez, P.A. Gutiérrez, M. Cruz-Ramírez, and **J. Sánchez-Monedero**. Aprendizaje híbrido de redes neuronales q-gaussianas en clasificación binaria. In *VII Congreso Español sobre Metaheurísticas, Algoritmos Evolutivos y Bioinspirados (MAEB2010)*, Valencia (Spain), 2010.

[58] J. Povedano-Molina, J. M. López-Vega, **J. Sánchez-Monedero**, and J. M. López-Soler. Instant Messaging Based Interface for Data Distribution Service. In *XIII Jornadas de Tiempo Real*, 2010.

[59] J. M. López-Vega, J. Povedano-Molina, **J. Sánchez-Monedero**, and J. M. López-Soler. Políticas de QoS en una Plataforma de Trabajo Colaborativo sobre Middleware DDS. In *XIII Jornadas de Tiempo Real*, February 2010.

[60] **J. Sánchez-Monedero**, L. Meléndez Aganzo, and S. Ventura Soto. Implantación de LDAP como sistema de autenticación centralizada. In *Actas de las III Jornadas de Software Libre de la Universidad de Cádiz*, pages 31–42, April 2006. URL: http://www.uca.es/softwarelibre/publicaciones/actas_josluca_III.

Other Conference, Seminars and Workshops contributions

2013 **"Classifying sovereign debt with ordinal regression techniques: the European Union case", III Congreso Científico de Investigadores en Formación**, *Universidad de Córdoba*, Córdoba, 2013.

2013 **"Distributed Systems Laboratory", IV Jornadas de Innovación en Docencia Universitaria**, *Universidad de Córdoba*, Córdoba, 2013.

2012 **"Ordinal classification algorithms based on guided projections", SEMATICA 2012: Oportunidades para TIC en Entornos Tecnológicos Avanzados**, *Universidad de Granada*, Granada, 2012.

Research projects and scientific networks

2018–2020 **Data Justice: Understanding datafication in relation to social justice (DATAJUSTICE).**, *Reference: ERC Starting Grant 2018-2023* , European Research Council, Principal Investigator: Dr Lina Dencik.

2018–2021 **Hybrid Algorithms combining Machine-Learning and meta-hEurisTics for ordinal classification and prediction (HAMLET)**, *Reference: TIN2017-85887-C2-2-P* , Ministry of Economy and Competitiveness, Principal Investigators: César Hervás-Martínez, Pedro Antonio Gutiérrez, Sancho Salcedo. Local coordinator: Pedro Antonio Gutiérrez. .

2016–2017 **Advanced Diversification for Learning Machines**, *Reference: TIN2015-70308-REDT* , Ministry of Economy and Competitiveness, Principal Investigator: Aníbal Ramón Figueiras Vidal. Local coordinator: Pedro Antonio Gutiérrez. 2016 to 2017.

2015–2017 **Prediction and ordinal classification algorithms applied to renewable energies**, *Reference: TIN2014-54583-C2-1-R*, Ministry of Economy and Competitiveness, Principal Investigator: César Hervás-Martínez. 17/04/2015 to 17/04/2017.

2013–2014 **Climate Tipping Points: detection and analysis of patterns using an ordinal regression approach**, *Reference: ARIADNA Study 13-9202*, European Space Agency, Principal Investigators: César Hervás-Martínez y Pedro Antonio Gutiérrez Peña. 01/09/2013 to 01/02/2014.

2012 **Spanish Network for Progress and Transference of Applied Computational Intelligence**, *Reference TIN2011-14083-E*, Ministry of Economy and Competitiveness, Principal Investigator: Miquel Sánchez Marre. 01/01/2012 to 31/12/2012.

2012–2014 **Advanced Neuromodelling for nominal and ordinal classification with hybrid learning algorithms. Application to remote sensing in agriculture and transplantation in biomedicine**, *Reference P11-TIC-7508*, Junta de Andalucía, Consejería de Innovación, Ciencia y Empresa, Principal Investigator: César Hervás Martínez (Dpto. Informática y Análisis Numérico, Universidad de Córdoba). 01/01/2012 to 31/12/2014.

2012–2014 **NEMOTECH: Neuromodelling techniques with hybrid learning algorithms. Applications to biomedicine, transplantation, agronomy and predictive microbiology**, *Reference TIN2011-22794*, Ministry of Research, Development and Innovation, Principal Investigator: César Hervás Martínez (Dpto. Informática y Análisis Numérico, Universidad de Córdoba). 01/01/2012 to 31/12/2014.

2010–2012 **Data Mining and Machine Learning Spanish Network**, *Reference TIN2010-09163-E*, Ministry of Education and Science, Principal Investigator: José Cristóbal Riquelme Santos (Área de Lenguajes y Sistemas Informáticos, Universidad de Sevilla). 01/10/2010 to 01/10/2012.

2009–2012 **Reglog-Neuronal: logistic regression with covariates obtained by means of hybrid learning of product unit neural networks. Applications to analysis of Andalusian agriculture.**, *Reference P08-TIC-3745*, Junta de Andalucía, Consejería de Innovación y Ciencia, Principal Investigator: César Hervás Martínez (Dpto. Informática y Análisis Numérico, Universidad de Córdoba). 01/01/2009 to 01/01/2012.

2009–2011 **Spanish model for donor-recipient decision on liver transplantation.**, *Reference Contrato art. 11/45 LRU - 68/83 LOU*, OTRI-UCO and Astellas Pharma S.A., Principal Investigator: César Hervás Martínez (Dpto. Informática y Análisis Numérico, Universidad de Córdoba). 01/01/2009 to 29/09/2011.

2008–2009 **Audio and video transmission with Data-Distribution Services. Wide Area Network deployments and evaluation**, Real-Time Innovations, Inc. (USA), Principal Investigator: Juan Manuel López Soler (University of Granada). 01/04/2008 to 31/01/2009.

2007–2008 **Extensions to the Real-Time Data Distribution Service for Scalable Collaboration**, Real-Time Innovations, Inc. (USA), Principal Investigator: Juan Manuel López Soler (University of Granada). 01/01/2007 to 01/01/2008.

Journal reviewer, program committee and scientific events organization

2011– **International journal reviewer:**, *IEEE Transactions on Neural Networks and Learning Systems, IEEE Transactions on Cybernetics, Neurocomputing, Pattern Analysis and Applications, Soft Computing, Neural Network World, Journal of Parallel and Distributed Computing, IEEE Transactions on Industrial Informatics*.

2010– **Program committee**, *International Work-Conference on Artificial Neural Networks (IWANN); International Conference on Intelligent System Design and Applications (ISDA); International Conference on Hybrid Artificial Intelligence Systems (HAIS); International Conference on Information Assurance and Security (IAS); International Conference on Next Generation Web Services Practices (NWeSP); International Conference on European Transnational Education (ICEUTE); Computational Intelligence in Security for Information Systems (CISIS); International Conference on Computational Aspects of Social Networks (CASoN); World Congress on Nature and Biologically Inspired Computing (NaBIC)*.

2010 **Chairman**, *International Workshop on Extreme Learning Machines (ELM 2010)*, Dec 7 2010, Adelaida, Australia.

2010 **Organizer of special session**, *"Redes Neuronales y Optimización por Enjambre de Partículas" en el VII Congreso Español De Metaheurísticas, Algoritmos Evolutivos Y Bioinspirados (MAEB'10)*, Sep 7-10 2010, Valencia, España.

Teaching Experience

2018 **Programming Methodology**, *Computer Engineering degree*, University of Córdoba.

2016-2017 **Neural Networks, Regression and Clustering (Seminar)**, *Doctorate in Data Science*, Universidad Loyola Andalucía.

2016-2017 **Statistical and computational intelligence methods for Classification (Seminar)**, *Doctorate in Data Science*, Universidad Loyola Andalucía.

2016-2017 **Informatics**, *Electromechanical Engineering*, Universidad Loyola Andalucía.

2016-2017 **Statistical inference**, *Business Administration*, Universidad Loyola Andalucía.

2015-2016 **Data Science Process and Classification**, *Doctorate in Data Science*, Universidad Loyola Andalucía.

2015-2016 **Java programming**, *Doctorate in Data Science*, Universidad Loyola Andalucía.

2015-2016 **Introduction to Data Science**, *Doctorate in Data Science*, Universidad Loyola Andalucía.

2014-2015 **Software Engineering**, *Computer Engineering degree*, Universidad de Córdoba.

2014-2015 **Free Software and Social Commitment**, *Computer Engineering degree*, Universidad de Córdoba.

2014-2015 **Introduction to Programming**, *Electrical Engineering degree*, Universidad de Córdoba.

2014-2015 **Introduction to Programming**, *Industrial Electrical Engineering degree*, Universidad de Córdoba.

2013-2014 **Introduction to Programming**, *Computer Engineering degree*, Universidad de Córdoba.

2013-2014 **Introduction to Programming**, *Mechanical Engineering degree*, Universidad de Córdoba.

2012-2013 **Advanced Programming**, *Computer Engineering degree*, Universidad de Córdoba.

2012-2013 **Introduction to Programming**, *Electronic Engineering degree*, Universidad de Córdoba.

2011-2012 **POSIX Systems Programming and Administration**, *Computer Engineering degree*, Universidad de Córdoba.

2010-2011 **Professional Computer Tools**, *Translation and Interpreting degree*, Universidad de Córdoba.

2010-2011 **Introduction to Programming**, *Electric Engineering degree*, Universidad de Córdoba.

Final project tutoring

2019 **Melanoma classification with deep residual networks**, *Juan José Méndez Torrero*, Escuela Politécnica Superior. Universidad de Córdoba.

2018 **Framework en Python para problemas de clasificación ordinal**, *Iván Bonaque Muñoz*, Escuela Politécnica Superior. Universidad de Córdoba.

2016 **Experimental framework for ordinal classification methods**, *Student: Pedro José Piquero Plaza*, Escuela Politécnica Superior. Universidad de Córdoba.

2015 ***Get in time*: University of Córdoba's time bank**, *Student: Felipe Alcaide López*, Escuela Politécnica Superior. Universidad de Córdoba.

2014 **Moodle plugin for plagiarism detection**, *Student: Pablo Candela Andrade y Juan Carlos Sánchez Casares*, Escuela Politécnica Superior. Universidad de Córdoba.

2014 **Website for pattern recognition algorithms usage on a grid computing cluster**, *Student: José María Pérez Puentes*, Polytechnic School. University of Córdoba.

2014 **Web interface for algorithms execution on a grid computing environment**, *Student: Fernando José Valle Camacho*, Polytechnic School. University of Córdoba.

2010 **Cave Canem: an extensible monitoring and intrusion detection system based on the Data Distribution Service (DDS).**, *Student: Fernando García Aranda*, E.T.S. Ingenierías Informática y de Telecomunicación. University of Granada.

Languages

English **Cambridge Certificate in Advanced English (CAE), equivalent to C1**.

Spanish **Native**.

Interest Areas

- Machine learning algorithms and computational intelligence
- Social issues and ethics related to computational intelligence
- Distributed systems
- Computer security and privacy

- Free (as in Freedom) Software

Personal Information

- Leadership and team working capabilities. Good communication skills.
- Honorary of the Spanish national association of computer students (RITSI)
- Music studies at conservatory and jazz school
- Amateur photographer
- Co-founder of https://cordoba.cc/
- Interest in politics and social movements
- Personal website: http://javism.github.io