

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

- 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 Tiño*, 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 Tiño*, 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] **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>.
- [2] **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>.
- [3] **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>.
- [4] 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>.
- [5] 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](https://doi.org/10.1109/TMI.2015.2506270).
- [6] 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](https://doi.org/10.1007/s13748-015-0068-7).
- [7] 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>.

- [8] 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>.
- [9] 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>.
- [10] **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>.
- [11] **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>.
- [12] 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>.
- [13] **J. Sánchez-Monedero**, P. A. Gutiérrez, P. Tiño, 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.
- [14] 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>.
- [15] **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>.
- [16] **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>.
- [17] 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>.
- [18] **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>.

- [19] 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

- [20] A. Valdivia, **J. Sánchez-Monedero**, and J. Casillas. How fair can we go in machine learning? Assessing the boundaries of fairness in decision trees. *Preprint. arXiv:2006.12399 [cs, stat]*, June 2020. arXiv: 2006.12399. URL: <http://arxiv.org/abs/2006.12399>.

Reports of EU funded Research projects

- [21] **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/>.
- [22] **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/>.
- [23] **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

- [24] **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>.
- [25] **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>.
- [26] **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.
- [27] 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.
- [28] 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>.
- [29] **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.
- [30] 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.
- [31] 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 Dorransoro, Eudurne 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.
- [32] 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.
 - [33] 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.
 - [34] **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.
 - [35] **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.
 - [36] 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.
 - [37] 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>.
 - [38] 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.
 - [39] 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.
 - [40] **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>.

- [41] 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>.
- [42] 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>.
- [43] M. Cruz-Ramirez, J. C. Fernandez, F. Fernandez-Navarro, **J. Sánchez-Monedero**, and C. Hervás-Martínez. 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>.
- [44] 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>.
- [45] 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>.
- [46] **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 analysis and artificial neural networks. In *1st International Conference on European Transnational Education (ICEUTE2010)*, pages 111–119, Burgos (Spain), 2010.
- [47] **J. Sánchez-Monedero**, M. Cruz-Ramirez, F. Fernandez-Navarro, J.C. Fernandez, P.A. Gutierrez, and C. Hervás-Martínez. 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>.
- [48] 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>.
- [49] 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>.
- [50] 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.

- [51] **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.
- [52] **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.
- [53] 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.
- [54] **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

- [55] 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.
- [56] 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.
- [57] 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.
- [58] 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.
- [59] **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”, *SEMÁTICA 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, Adelaide, 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>