CURRICULUM VITAE ABREVIADO (CVA)

IMPORTANT – The Curriculum Vitae cannot exceed 4 pages.
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Part A. PERSONAL INFORMATION

First name	María José		
Family name	del Jesus Díaz		
Gender (*)	Female	Birth date (dd/mm/yyyy)	
Social Security, Passport, ID number			
e-mail		URL Web	
Open Researcher and Contributor ID (ORCID) (*)		0000-0002-7891-3059	

(*) Mandatory

A.1. Current position

Position	Full Professor			
Initial date	13/10/2017			
Institution	University of Jaen			
Department/Center	Computer Science	Higher Polytechnic School of Jaen		
Country	Spain		Teleph. number	953212444
Key words	Deep Learning, Trustworthy Artificial Intelligence			

A.3. Education

PhD, Licensed, Graduate	University/Country	Year
PhD Computer Science	University of Granada	1999
Licensed Computer Science	University of Granada	1994

Part B. CV SUMMARY *(max. 5000 characters, including spaces)*

I started my career in 1994 at the Computer Science Dept of the University of Cádiz teaching at the School of Naval Engineering. In 1995 I joined the Dept of Computer Science at the University of Jaen, where I obtained my position of Full Professor in the area of Computer Science and Artificial Intelligence (AI) in 2017. Currently, I have been the head of the research group "Intelligent Systems and Data Mining" since its creation in 2001.

I started my research in the area of data mining, in the field of learning from data from interpretable models such as fuzzy rules. My doctoral thesis dealt with the design of evolutionary fuzzy systems applied to classification problems. At this stage of my training, I proposed a methodology for the design of fuzzy rule-based classification systems and reasoning methods (10.1016/S0888-613X(00)88942- 2, 99th percentile 1999) that have become references in the field.

I consolidated my research career by tackling new research lines: artificial neural networks, subgroup discovery, interpretability-accuracy balance in models, and preprocessing data techniques, not only for classification but also for regression and time series problems. Different proposals were obtained to achieve explainable and accurate models, and to work with imbalanced data (10.1016/j.knosys.2013.01.018, 99th percentile 2013), one of the most frequent data quality problems.

In the last years, I have opened new lines of research, multi-label classification [5,10], scalability and big data [C2], deep learning for representation learning [3,4,7,C1,C3],

descriptive rule extraction [2,6,8,9,C4], with excellent algorithmic proposals that were transferred to medicine [1], e-learning, marketing, economy and renewable energies. I co-authored a Springer book reflecting the expertise in multilabel classification (ISBN 978-3-319-411101).

I currently focus my research in Data Science and, specially, on eXplainable Artificial Intelligence, Deep Learning and Trustworthy Artificial Intelligence [1-10][C1-C4].

I have authored 74 articles published in journals within the JCR, 1 book, 10 book chapters and more than 140 contributions to conferences, with an important international collaboration. It is important to highlight that 67% of the JCR articles were published in Q1, and 15% in Q2. With respect to the citability, I have more than 11,500 citations in GScholar, more than 7,200 in Scopus and more than 5,700 in WoS. Nowadays, I hold 4 research stretches by CNAI.

I am editor in Chief of the Progress in Artificial Intelligence journal, Springer (2019-now). I have organized 5 special sessions at international conferences; 3 special issues of international journals; and I am a regular reviewer of multiple international indexed journals. I have participated in the organizing committee of 3 conferences and in the programme committee of several international and national conferences, and I act as an expert for National Evaluation and Prospective Agency in the evaluation of research projects.

Throughout these years, I have leaded multiple research projects [P1-P6, as examples] with a total funding close to 1M euros, and I have recently led the transfer contract with the Ministry of Defense close to 0.5M euros [T1] and contributed in several contracts [T2-T5]. In addition, I have been responsible for the node of the University of Jaen in 6 research networks. I have supervised 8 doctoral theses (2 with European mention) and 15 research grants, with graduates working in research, teaching and business organizations.

Alongside my research and teaching, my contribution to society and research dissemination is another of the fundamental pillars of my curriculum. I have worked on developing intelligent systems to solve problems in Marketing (Fundación del Olivar and University of Mondragón), in Medicine (San Cecilio Hospital Granada, Doce de Octubre Hospital Madrid, Complejo Hospitalario Jaen), in Bioinformatics in collaboration with researchers from De Montford University (Leicester, UK), in e-commerce (OrOlivesur) or in the characterisation of concentrating, bifacial and monofacial photovoltaic modules with researchers from the IDEA research group. I have participated in the development of the KEEL tool, an international reference for evolutionary data mining (the article in which it was presented, 10.1007/s00500-008-0323-y, is in the 100th percentile of its field in 2009) and other software developments available in the GitHub repository of the research group (https://github.com/simidat).

In summary, a professional career focused on quality teaching work since 1995 in the field of AI, and on research and transfer, leading a research group since 2001, which has allowed the development of multiple lines of research of interest to the community and the transfer of a large number of AI Systems to our society. In particular, AI in health, education, renewable energies, sustainability and industry, which appear in the UN Sustainable Development Goals (SDG3,4,7,9,13).

Part C. RELEVANT MERITS *(sorted by typology)*

C.1. Publications (citation percentile in the same area and year)

1. A.J. Rivera, J. Cobo, M.D. Pérez-Godoy,…, M.J. del Jesus (2023) XAIRE: An ensemble-based methodology for determining the relative importance of variables in regression tasks. Application to a hospital emergency department. Artificial Intelligence in Medicine, 137, 102494. Number of authors: 10. Position: 10/10.
2. A.M. García-Vico, C.J. Carmona, P. González, M.J. del Jesus (2023) A distributed evolutionary fuzzy system-based method for the fusion of descriptive emerging patterns in data streams. Information Fusion, vol. 91, pp. 412-423 (**58th percentile in 2022)**.
3. F. Pulgar, F. Charte, A.J. Rivera-Rivas, M.J. Del Jesus (2020) Choosing the proper autoencoder for feature fusion based on data complexity and classifiers: Analysis, tips and guidelines. Information Fusion 54, 44-60. (**91th percentile in 2020).**

4. D. Charte, F. Charte, M. J. Del Jesus, F. Herrera (2020) An analysis on the use of autoencoders for representation learning: Fundamentals, learning task case studies, explainability and challenges. Neurocomputing 404, 93-107. (**85th percentile in 2020).**
5. F. Charte, A.J. Rivera-Rivas, M.J. Del Jesus, F. Herrera (2019) Dealing with Difficult Minority Labels in Imbalanced Multilabel Data Sets. Neurocomputing 326-327, 39-53. (**84th percentile in 2019).**
6. A. Fernández, M.J. Del Jesus, O. Cordón, F. Marcelloni, F. Herrera (2019) Evolutionary Fuzzy Systems for Explainable Artificial Intelligence: Why, When, What for, and Where to? IEEE Computational Intelligence Magazine 14 (1) 69-81. (**98th percentile in 2019).**
7. D. Charte, F. Charte, S. García, M.J. Del Jesus, F. Herrera. (2018) A practical tutorial on autoencoders for nonlinear feature fusion: Taxonomy, models, software and guidelines. Information Fusion 44, 78-96 (**99th percentile in 2018).**
8. J.M. Luna, M. Pechenizkiy, M.J. Del Jesus, S. Ventura. Mining Context-Aware Association Rules Using Grammar-Based Genetic Programming. IEEE Transactions on Cybernetics 48(11) 3030-3044. (2018). (**72th percentile in 2018).**
9. C.J. Carmona, M.J. Del Jesus, F. (2018) Herrera. A unifying analysis for the supervised descriptive rule discovery via the weighted relative accuracy. Knowledge-Based Systems 139, 89-100 (**60th percentile in 2018).**
10. F. Charte, A.J. Rivera, M.J. Del Jesus, F. Herrera (2015) Addressing imbalance in multilabel classification: Measures and random resampling algorithms. Neurocomputing 163, 3-16 (**98th percentile in 2015).**

C.2. Congress (oral presentations)

[C1] D. de la Rosa, A. Alvarez, R. Pérez, G. Garrote, A.J. Rivera, M.J. del Jesus, F. Charte (2023). NOSpcimen: A First Approach to Unsupervised Discarding of Empty Photo Trap Images. International Work-Conference on Artificial Neural Networks (IWANN'23) LNCS 14135.

[C2] F. Puentes, M.D. Pérez, P. González, M.J. del Jesus. Implementation of Data Stream Classification Neural Network Models Over Big Data Platforms. International Work-Conference on Artificial Neural Networks (IWANN'21)

[C3] D. Charte, F. Charte, A.J. Rivera, M.J. Del Jesus, F. Herrera. A Showcase of the Use of Autoencoders in Feature Learning Applications. 8th International Work-Conference on Interplay Between Natural and Artificial Computation (IWINAC 2019) LNCS 11487, pp. 412-421, 2019

[C4] A.M. García, C.J. Carmona, P. González, M.J. Del Jesus, A First Approach to Handle Fuzzy Emerging Patterns Mining on Big Data Problems: The EvAEFP-Spark Algorithm. IEEE International Conference on Fuzzy Systems 2017 (FUZZ-IEEE 2017)

C.3. Research projects as PI

[P1] Advances in the development of trustworthy AI models to contribute to the adoption and use of responsible AI in healthcare (TAIH). Ministerio de Ciencia, Innovación y Universidades. Proyectos de Generación de Conocimiento 2023. PID2023-1495110B-I00. 01/9/24 - 31/08/27. Total: 240.625,00 €. Principal researcher.

[P2] Modelado del comportamiento de módulos fotovoltaicos bifaciales integrados en Smart-Trees usando técnicas Deep Learning (MOBILETE). Ministerio de Ciencia e Innovación. Proyectos de Transición Ecológica y Transición Digital. TED2021-131983B-I00. From 01/12/22 to 01/12/24. Total 310.500 €. Principal researcher.

[P3] Hacia la extracción inteligente, explicable y precisa de conocimiento en problemas complejos. Ministerio de Ciencia e Innovación. Código PID2019-107793GB-I00. From 01/06/20 to 29/02/24. Total: 123.904 €. Principal researcher.

[P4] Modelos de Ciencias de Datos para la resolución de problemas complejos. Aplicaciones en Biomedicina, Biotecnología, Energías Renovables y Empresa. Ministerio de Economía y Competitividad. Código TIN2015-68454-R. From 01/01/16 to 31/12/19. Total: 125.400 €. Principal researcher.

[P5] Nuevos problemas en Minería de Datos: soluciones con técnicas Soft Computing. Ministerio de Economía y Competitividad. Código TIN2012-33856. From 01/02/13 to 31/01/16. Total 55844 €. Principal researcher.

[P6] KEEL-CTNC: Descubrimiento de subgrupos evolutivo. Redes neuronales evolutivas de función de base radial. Sistemas difusos genéticos. Aprendizaje basado en programación genética para problemas de alta dimensionalidad. Comisión Interministerial de Ciencia y Tecnología. Código TIN 2008-06681-C06-02.From 01/01/09 to 31/12/12. Total: 110110 €. Principal researcher.

C.4. Contracts, technological or transfer

[T1] Sistemas inteligentes para procesamiento de imágenes y detección de amenazas en escenarios de conflicto. Contrato art. 11/45 LRU – 68/83 LOU. Ministerio de Defensa. From 5/12/2019 to 15/10/2021. Founding: 485.142,78 €. PI: M.J. del Jesus.

[T2] Controlador lógico inteligente para detección de piezas en fabricación aditiva (CLIFA). Proyectos de colaboración público-privada del Plan estatal de investigación científica, técnica y de innovación 2021-2023. From 1/10/24 to 30/9/27. Founding: 619.411,00€. PI: C.J. Carmona.

[T3] Detección en tiempo real de armas fabricadas en impresoras 3D mediante aprendizaje profundo ARMIA3D. SICNOVA Soluciones. Founding: 108.900,00€. From 1/7/24 to 31/12/26. PI: A.M. García-Vico, M.D. Pérez.

[T4] SmartPhotolive: Aplicación de la Inteligencia Artificial en Cooperativas Oleícolas Energéticas. Type: Contract. Funding: Grupo Operativo con empresas y entidades de la Consejería de Agricultura, Pesca, Agua y Desarrollo Rural de la Junta de Andalucía. PI: Rivera, A.J.; de la Casa, J. (UJA). 1/04/2024 - 1/06/2025. Founding: 271.359,85 €.

[T5] Smart-O-Live: agricultura, almazara y consumo inteligente de aceites de oliva sostenibles y más saludables en la nueva agroindustria del futuro. Contrato art. 11/45 LRU – 68/83 LOU. Accesur (MISIONES 2021). Founding: 90.750 €. Octubre 2022- Octubre 2024. IP: A.J. Rivera. Co-IP: M.D. Pérez

C.5. Organization of events

- Member of the organizing committee of the II edition of Andaluz.IA
- Member of the organizing committee of the XIV Spanish Congress on Fuzzy Logic and Applications and the I International Workshop in Genetic Fuzzy Systems.
- Organization and direction of the autumn and summer courses at the University of Jaen and International University of Andalusian (UNIA): a)Security and progress in the network; b) Working in ICT; c) Telematic Crimes; d) Practical approach to Data Science and Big Data.

C.6. Evaluation tasks

- Evaluator for the National Evaluation and Foresight Agency (National Plan, CDTI, Andalusian Research Agency).
- “Ramón y Cajal” and “Juan de la Cierva” evaluation commissions. Area of Computer Science and Information Technology.
- National Plan project evaluation committees.

C.7. Management (unipersonal positions)

- Member of the Governing Council of the Agency for Scientific and University Quality of Andalusia since April 2023.
- Vice-Rector for Information and Communication Technologies and Infrastructures from 24 April 2015 to 1 December 2017.
- Vice-Rector for Information and Communication Technologies and Digital University from 1 December 2017 to 29 April 2019.
- Director of the ICT Innovation and Development Secretariat from April 2007 to May 2011.
- Director of the "Intelligent Systems and Data Mining" research group since 2001.

C.8. Publishing activity

- Editor-in-Chief of the journal "Progress in Artificial Intelligence", Springer (2019-now).
- Co-editor of 2 international and 1 national book/proceedings.