

## CURRICULUM VITAE

CV date

1/05/2024

### Part A. PERSONAL INFORMATION

First name	Sebastián Emilio	Family name	Ventura Soto
Gender (*)	Male	Birth date (dd/mm/yyyy)	16/04/1966
Social Security, Passport, ID number	30510000V		
e-mail	<a href="mailto:sventura@uco.es">sventura@uco.es</a>	Web	<a href="https://www.uco.es/users/sventura">https://www.uco.es/users/sventura</a>
Open Researcher and Contributor ID (ORCID) (*)	0000-0003-4216-6378		

#### A.1. Current position

Job Title	Full professor	Initial date	14/04/2016
Institution	University of Cordoba		
Department/Center	Computer Science and Numerical Analysis		
Country	Spain	Phone Number	+34 957212218
Keywords	Artificial Intelligence, Data Science, Computational Intelligence		

#### A.2. Previous positions (research activity interruptions, art. 14.2.b)

Period	Position/Institution/Country/Interruption cause
1998-2016	Associate Professor, University of Córdoba, Spain

#### A.3. Education

Degree/Master/PhD	University / Country	Year
Bachelor of Science	Universidad de Córdoba	1989
PhD in Science	Universidad de Córdoba	1996

### Part B. RELEVANT MERITS

#### B.1. Publications (Last 5 years - selection)

- J.L. Ávila-Jiménez, V. Cantón-Habas, M.P. Carrera-González, M. Rich-Ruiz, S. Ventura, A deep learning model for Alzheimer's disease diagnosis based on patient clinical records, Computers in Biology and Medicine, Volume 169, 107814. 2024.
- A. Moya, B. Veloso, J. Gama, S. Ventura. Improving hyper-parameter self-tuning for data streams by adapting an evolutionary approach. Data Min Knowl Disc. 2023.
- E. Pérez, S. Ventura. Progressive growing of Generative Adversarial Networks for improving data augmentation and skin cancer diagnosis, Art. Intell. Med., 141, 102556. 2023.
- A. M. Trasierras, J. M. Luna, S. Ventura. A contrast set mining-based approach for cancer subtype analysis. Artif. Intell. Med., Volume 143, 102590. 2023.
- J. M. Luna, R. Uday Kiran, P. Fournier-Viger, S. Ventura. Efficient Mining of Top-k High Utility Itemsets through Genetic Algorithms. Inform. Sciences. Elsevier. Volume 624, pp.529-553. 2023
- E. Pérez, S. Ventura, A framework to build accurate Convolutional Neural Network models for melanoma diagnosis, Knowledge-Based Systems, Volume 260, 110157. 2023.
- S. Pedraza-Arévalo, ... S. Ventura, ... J. P. Castaño, Spliceosomal dysregulation unveils NOVA1 as a candidate actionable therapeutic target in pancreatic neuroendocrine tumors, Translational Research, Volume 251, pp. 63-73. 2023.
- Esteban, A. Zafra, and S. Ventura. Data mining in predictive maintenance systems: A taxonomy and systematic review. Wiley Interdisciplinary Reviews: DMKD. Vol. 12. 5. 2022.
- E. Pérez, S. Ventura. An ensemble-based convolutional neural network model powered by a GA for melanoma diagnosis. Neural Comp. & Applic. Volume 34, pp. 10429–10448. 2022.
- L. Bowen-Mendoza, M. Pinargote-Ortega, J. Meza et al. Design of peer assessment rubrics for ICT topics. J Comput High Educ. Vol. 34, pp. 211–241. 2022.
- A. M. Trasierras, J. M. Luna, S. Ventura. Improving the understanding of cancer in a descriptive way: An emerging pattern mining-based approach. International Journal of Intelligent Systems. Wiley. Volume 3-4, pp.2822-2848.
- J. M. Moyano, S. Ventura, Auto-adaptive Grammar-Guided Genetic Programming algorithm to build Ensembles of Multi-Label Classifiers, Information Fusion, Vol. 78, pp. 1-19. 2022.

13. E. Pérez, O. Reyes, S. Ventura, Convolutional neural networks for the automatic diagnosis of melanoma: An extensive experimental study, *Medical Image Analysis*, Vol. 67, 101858. 2021.
14. P. Fournier-Viger, P. Yang, R. Uday Kiran, S. Ventura, J. M. Luna. Mining local periodic patterns in a discrete sequence. *Information Sciences*. Elsevier. Volume 544, pp.519-548. 2021.
15. M. Frias, J. M. Moyano, A. Rivero-Juarez, et al; S. Ventura. Classification Accuracy of Hepatitis C Virus Infection Outcome: Data Mining Approach. *Journal of Medical Internet Research*. 23-2. 2021.
16. J. M. Moyano, O. Reyes, H. M. Fardoun, S. Ventura, Performing multi-target regression via gene expression programming-based ensemble models, *Neurocomputing*, Volume 432, Pages 275-287, ISSN 0925-2312, 2021.
17. L. A. Quintero-Domínguez, C. Morell, S. Ventura, A propositionalization method of multi-relational data based on Grammar-Guided Genetic Programming, *Expert Systems with Applications*, Volume 168, 114263. 2021
18. P. G. Cachi, S. Ventura, & K. J. Cios. CRBA: A competitive rate-based algorithm based on competitive spiking neural networks. *Frontiers in Computational Neuroscience*, Volume 15, 627567. 2021.
19. R. Blazquez-Encinas ... S. Ventura... J. P. Castaño. A functional role for splicing factor EIF4A3 dysregulation in pancreatic ductal adenocarcinoma. *Pancreatology*, 21, S75. 2021.
20. C. Luque, J. M. Luna, & S. Ventura. A semantically enriched text mining system for clinical decision support. *Computational Intelligence*, 37(4), 1545-1570. 2021.
21. E. Alors-Perez, R. Blázquez-Encinas, S. Alcalá, C. Viyuela-García, S. Pedraza-Arevalo, V. Herrero-Aguayo, ... & J. P. Castaño . Dysregulated splicing factor SF3B1 unveils a dual therapeutic vulnerability to target pancreatic cancer cells and cancer stem cells with an anti-splicing drug. *Journal of Experimental & Clinical Cancer Research*, 40(1), 1-21. 2021.
22. M. Pinargote-Ortega, L. Bowen-Mendoza, J. Meza, & S. Ventura. Peer assessment using soft computing techniques. *Journal of Computing in Higher Education*, 33(3), pp. 684-726. 2021.
23. A.C. Fuentes-Fayos ... S. Ventura ... R.M. Luque. Splicing machinery dysregulation drives glioblastoma development/aggressiveness: oncogenic role of SRSF3, *Brain*, Volume 143, Number 11, pp. 3273-3293. 2020.
24. O. Reyes, E. Perez, R.M. Luque, J. Castano, S. Ventura. A supervised machine learning-based methodology for analyzing dysregulation in splicing machinery: An application in cancer diagnosis, *Artificial Intelligence in Medicine*, Volume 108, pp. 101950. 2020.
25. P. G. Cachi, S. Ventura, K. J. Cios. Fast convergence of competitive spiking neural networks with sample-based weight initialization, *International Conference on Information Processing and Management of Uncertainty in Knowledge-Based Systems*, pp. 773-786. 2020.
26. J.M. Moyano, E.L. Gibaja, K.J. Cios, S. Ventura. Combining multi-label classifiers based on projections of the output space using Evolutionary algorithms, *Knowledge-Based Systems*, Volume 196, pp. 105770. 2020.
27. J.A. Delgado-Osuna, C. García-Martínez, J. Gómez-Barbadillo, S. Ventura. Heuristics for interesting class association rule mining: A colorectal cancer database, *Information Processing & Management*, Volume 57, Number 3. 2020.
28. J. Gonzalez-Lopez, S. Ventura, A. Cano. Distributed multi-label feature selection using individual mutual information measures, *Knowledge-Based Systems*, Volume 188. 2020.
29. C. Romero, S. Ventura. Educational data mining and learning analytics: An updated survey, *Wiley Interdisciplinary Reviews: Data Mining and Knowledge Discovery*, Volume 10, Number 3. 2020.
30. J.M. Jiménez-Vacas ... S. Ventura ... R.M. Luque. Dysregulation of the splicing machinery is directly associated to aggressiveness of prostate cancer, *EBioMedicine*, Volume 51. 2020.
31. J. González-López, S. Ventura, A. Cano. Distributed selection of continuous features in multilabel classification using mutual information, *IEEE Transactions on Neural Networks and Learning Systems*, Volume 31, Number 7, pp. 2280-2293. 2019.
32. J.M. Moyano, E.L. Gibaja, K.J. Cios, S. Ventura. An evolutionary approach to build ensembles of multi-label classifiers, *Information Fusion*, Volume 50, pp. 168-180. 2019.
33. H. Abouzid, O. Chakkor, O.G. Reyes, S. Ventura. Signal speech reconstruction and noise removal using convolutional denoising audioencoders with neural deep learning, *Analog Integrated Circuits and Signal Processing*, Volume 100, pp. 501-512. 2019.
34. M. del Río-Moreno ... S. Ventura ... R.M. Luque. Dysregulation of the splicing machinery is associated to the development of nonalcoholic fatty liver disease, *The Journal of Clinical Endocrinology & Metabolism*, Volume 104, Number 8, pp. 3389-3402. 2019.

35. F. Padillo, J.M. Luna, S. Ventura. A grammar-guided genetic programming algorithm for associative classification in big data, *Cogn. Comp.*, Vol. 11, pp. 331-346. 2019.
36. Luque, J.M. Luna, M. Luque, S. Ventura. An advanced review on text mining in medicine, *Wiley Interdisciplinary Reviews: Data Mining and Knowledge Discovery*, Volume 9, Number 3, pp. e1302. 2019.
37. J.M. Luna, P. Fournier-Viger, S. Ventura. Frequent itemset mining: A 25 years review, *Wiley Interdisciplinary Reviews: DMKD*, pp. e1329. 2019.

## B.2. Contracts, technological or transfer merits

### Contracts (five last years)

1. OTRI. 12022190. Servicio de Asistencia Técnica a la Evolución de Herramientas de Sostenimiento Avanzada. 484.000,00€. Mando apoyo logístico del Ejército de Tierra. 19/12/2022-19/12/2023.
2. OTRI. 12022041. Mejora genética en cannabis mediante la aplicación de nuevas tecnologías para uso medicinal (GENCANN). 142.356,50€. PhytoPlant Research. 5/4/2022-5/3/2025.
3. OTRI. 12019160. MANPREDIC: Servicio de diseño e implementación de un sistema de monitorización específico para varias plataformas militares del Ejército de Tierra. 388.165,59€. Ministerio de Defensa. 28/11/2019-15/10/2021.

### Patents (five last years)

1. F.J. Delgado Lista; J. F. Alcalá Díaz; F. J. Gómez Delgado; J.D. Torres Peña; A. García Ríos; A. I. Pérez Caballero; J. L. Miranda; P. Pérez Martínez; E. Herruzo Gómez; S. Ventura Soto; O.A. Rangel Zuñiga; A. Camargo García; R. Otero Aragón; J.M. Luna Ariza. 201799901595517. GLUCOGENE Spain. 10/05/2017.

## B.4. PhD Thesis (last 5 years)

1. Antonio Manuel Trassierras Fresco. *“Extracción de conocimiento útil en biomedicina mediante técnicas de minería de patrones”*. University of Cordoba, 2023
2. José Antonio Delgado Osuna, *“Development and Application of New Machine Learning Models for the Colorectal Cancer Study”*. University of Cordoba, 2023.
3. Marco Antonio Barrón. *“Técnicas de Clasificación para la Predicción de Tarifas Aéreas”*. University of Cordoba, 2023.
4. Mohammed Al-Twijri, *“Modelling Course Difficulty Indexes to Enhance Students Performance and Course Study Plans”*. University of Granada, 2022.
5. Eduardo Pérez Perdomo, *“Automatic Diagnosis of Melanoma with Modern Machine Learning Techniques”*. University of Cordoba, 2022.
6. Luis Alberto Quintero Dominguez, *“Multi-relational Data Mining using Relational Data Transformation Methods”*. Universidad Central “Marta Abreu” de Las Villas (Cuba) 2021.
7. Francisco Padillo. *“Nuevos Retos en Clasificación Asociativa: Big Data y Aplicaciones”*. University of Cordoba, 2020.
8. Carmen Luque. *“Text Mining y Medicina: una Aproximación a la Detección Temprana de Enfermedades”*. University of Cordoba, 2020.
9. José María Moyano Murillo, *“Multi-label classification models for heterogeneous data: an ensemble-based approach”*. University of Cordoba & Virginia Commonwealth University, 2020.
10. Jorge González. *“Distributed Multi-Label Learning on Apache Spark”*. University of Cordoba and Virginia Commonwealth University, 2019.

## Part C. RESEARCH PROJECTS RELATED WITH THE CURRENT ACTION (five last years)

1. TED2021-132702B-C22, *Predictive Maintenance Based on Anomaly Detection: Framework and Maintenance in High Tonnage Transport Trucks (PreMAD-Truck)*. Spanish Ministry of Science and Innovation. Sebastián Ventura Soto. 1/12/2022-30/11/2024. 176.525,0 €.

2. ProyExcel\_00699, *Advanced Machine Learning Models in Predictive Maintenance*. Education Department of the Andalusian Regional Government. Sebastián Ventura Soto. 2/12/2022-31/12/2025. 138.230,0 €.
3. ERANet-CHANSE/PCI2022, *DIGIPATCH, Moving from networked to patchworked society: motivational unperpinnings and societal consequences*. European Union. Manuel Moyano. 1/11/2022-31/10/2025. 163.590,0 €.
4. PID2020-115832GB-I00, *Improving the data science user experience with computational intelligence techniques*. Spanish Ministry of Science and Innovation. Sebastián Ventura Soto. 01/09/2021-31/08/2024. 78.815 €.
5. TIN2017-83445-P, *Emerging Trends in Data Analysis*. Ministerio de Economía y Competitividad. Sebastián Ventura Soto. 01/01/2018-31/12/2020. 57.200 €.

#### Part D. SUMMARY OF CV, HIGHLIGHTING INTERDISCIPLINARITY

Sebastián Ventura has been full professor of Computer Science and Artificial Intelligence at the Universidad de Córdoba since April 2016. He also holds the positions of Affiliated Professor at Virginia Commonwealth University (Richmond, USA).

Since the beginning of his career, he has published 294 papers indexed in Scopus. Of these, 92 have been published in the last five-year period stable in the information source (2018-2022), to which we must add 19 papers in 2023. This intense research activity has been carried out with authors from 17 countries, representing an international collaboration in that period of 69.6%. Not only is the high production remarkable but these works have been published in the most prestigious journals worldwide, with an acceptance rate of 85.7% in first-quartile journals and 58.7% in the first decile for the documentary typologies of "Article" and "Review" (63 works). Due to the quality and visibility of this research, 30.2% of these papers are in the top 10% of the world's most cited journals. The total number of citations received was 1,877 in 2018-2022, with 93.7% of these papers being cited and an average number of citations per publication of 29.8. In this same sense, the citation impact of these publications in the same areas, period and documentary typology must be evaluated with a 1.90 normalized impact (FWCI); furthermore, they are 56% above the world citation average under these characteristics and also for the documentary typologies "Article" and "Review".

On the other hand, it should be mentioned that of these 92 papers, without distinguishing by typology, 29% have been published in open-access journals, aware of the need to facilitate general access to scientific knowledge. In this sense, it should also be noted that, of these 92 papers, 40 of them have had a social impact, as measured by altmetric.com, with 240 mentions, with the article "An ensemble-based method for the selection of instances in the multi-target regression problem" achieving a score of 58 and ranking in the top 5% of all research results rated by Altmetric.com.

Prof. Ventura has also been co-author and co-editor of several books on his areas of expertise, as well as guest editor of special issues in journals (about 10). On the other hand, he has been principal investigator in 15 national/international projects and has participated in 10 other national projects in recent years. It should also be noted that, in the last 5 years, he has advised 10 doctoral theses, 3 of them with an international mention or belonging to Dual Ph.D. Programs.

Regarding other scientific responsibilities, Prof. Ventura has been general chair of several international conferences such as the IEEE CBMS International Symposium on Computer-Based Medical Systems in 2019, and member of the steering committee and/or program committee of numerous international conferences: Int. Conf. on Educational Data Mining (EDM), IEEE World Congress on Computational Intelligence (WCCI), Genetic and Evolutionary Computation Conference (GECCO), to list a few.

Finally, Dr. Ventura has reviewed several prestigious international journals. He currently serves at the editorial board of Information Fusion, area editor of PeerJ Computer Science, as associate editor of the journals Computational Intelligence and Engineering Applications of Artificial Intelligence, and editor-in-chief of Progress in Artificial Intelligence (Springer).