

Part A. PERSONAL INFORMATION

CV date 7/12/2020

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|--------------------------------------|------------------------|---------------------|---|
| First and Family name | Sebastián Ventura Soto | | |
| Social Security, Passport, ID number | ●●●●●●●● | Age | ● |
| Researcher numbers | Researcher ID | A-7753-2008 | |
| | Orcid code | 0000-0003-4216-6378 | |

A.1. Current position

| | | | |
|--------------------------------|--|--------|--|
| Name of University/Institution | Universidad de Córdoba | | |
| Department | Dpto. de Informática y Análisis Numérico | | |
| Address and Country | Campus Universitario de Rabanales, edificio "Albert Einstein" | | |
| Phone number | 957212218 | E-mail | sventura@uco.es |
| Current position | Full professor | From | 14/4/2016 |
| Espec. cód. UNESCO | 1203.04 | | |
| Keywords | Data Mining, Data Science, Big Data, Educational Data Mining, Clinical Data Mining | | |

A.2. Education

| Bachelor/Degree/PhD | University | Year |
|---------------------|------------------------|------|
| Bachelor of Science | Universidad de Córdoba | 1989 |
| PhD in Science | Universidad de Córdoba | 1996 |

A.3. JCR articles, h Index, thesis supervised...

Research sexennial: 4 (Last granted on 7th December 2020)

Number of supervised thesis: 14

Total publications in Q1: 42 (last five years)

Normalized Impact Factor: 1.816

| | Total citations | Average citations/year (last five years) | H Index | G Index |
|---------------------------------|-----------------|--|---------|---------|
| Web of Science. Thomson Reuters | 6,001 | 768 | 29 | 74 |
| Scopus | 8,751 | 1,113.8 | 36 | 89 |
| Google Scholar | 17,254 | 2,035.6 | 49 | 127 |

Part B. CV SUMMARY (max. 3500 characters, including spaces)

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) and Distinguished Adjunct Professor at King Abdulaziz University (Jeddah, Saudi Arabia).

In the last five years, he has published 62 papers in international journals indexed in the JCR (67.7% of which belong to first quartile journals). Additionally, he has published 40 JCR papers with international collaborators (64.5% of the total). Finally, 88.7% of his publications in the last five years were referenced by other scientific publications. In total, he has published more than 125 articles in prestigious journals, and around 200 articles in books (conferences and book editions), and he has recently authored three monographs on some of his areas of specialization:

- S. Ventura & J. M. Luna. Supervised Descriptive Pattern Mining with Evolutionary Algorithms. Springer, 2018.
- S. Ventura & J. M. Luna. Pattern Mining with Evolutionary Algorithms. Springer, 2016.
- F. Herrera, S. Ventura et al. Multiple Instance Learning. Springer, 2016.

He has also been co-editor of several books on his areas of expertise, as well as guest editor of special issues in JCR-indexed journals such as Neurocomputing, User Modelling and User Adapted Interaction and Journal of Computers and Systems Science.

On the other hand, he has been principal investigator in 7 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 7 doctoral theses:

- O. Reyes. "New hybrid learning models for multi-label classification and ranking". Universidad de Córdoba, 2016.
- A. Ramírez. "Modelos metaheurísticos para el desarrollo de sistemas inteligentes de soporte a la decisión en la construcción de software". Universidad de Córdoba, 2018.
- G. Melki. "Novel Support Vector Machines for Diverse Learning Paradigms". Virginia Commonwealth University – Universidad de Córdoba, 2018.
- J. González. "Distributed Multi-Label Learning on Apache Spark". Virginia Commonwealth University – Universidad de Córdoba, 2019.
- F. Padillo. "Nuevos Retos en Clasificación Asociativa: Big Data y Aplicaciones". Universidad de Córdoba, 2020.
- C. Luque. "Text Mining y Biomedicina: Una aproximación a la Detección Temprana de enfermedades". Universidad de Córdoba, 2020.
- J.M. Moyano. "Multi-Label Classification Models for Heterogeneous Data: An Ensemble-Based Approach". Virginia Commonwealth University – Universidad de Córdoba, 2020.

Dr. Ventura has been general chair of international conferences such as: International Conference on Educational Data Mining (EDM) in 2009; International Conference on Intelligent Systems Design and Applications (ISDA) in 2011 and 2012; IEEE CBMS International Symposium on Computer-Based Medical Systems in 2019. He is a member of the program committee of numerous international conferences: International Conference on Educational Data Mining (EDM), IEEE World Congress on Computational Intelligence (WCCI), International Conference on Hybrid Intelligent Systems (HIS), International Conference on Intelligent Systems Design and Applications (ISDA), Genetic and Evolutionary Computation Conference (GECCO), to list a few.

Last but not least, Dr. Ventura has reviewed several prestigious international journals, including User Modelling and User Adapted Interaction (since 2006), Knowledge Based Systems (since 2008), Information Sciences (since 2009), Knowledge and Information Systems (since 2009) and IEEE Transactions on Cybernetics (since 2012). He currently belongs to the editorial board of PeerJ Computer Science, Information Fusion and Engineering Applications of Artificial Intelligence journals, being also associate editor of Applied Computational Intelligence and Soft Computing and IEEE Transactions on Cybernetics, and editor-in-chief of Progress in Artificial Intelligence (Springer).

Part C. RELEVANT MERITS

C.1. Publications (including books)

The following is a simplified list of the most recent publications:

- P. Fournier-Viger, P. Yang, R. U. Kiran, S. Ventura, J. M. Luna: Mining local periodic patterns in a discrete sequence. Inf. Sci. 544: 519-548 (2021)
- E. Perez, O. Reyes, S. Ventura: Convolutional neural networks for the automatic diagnosis of melanoma: an extensive experimental study. Med. Image Anal. 67: 101858 (2021)
- J. M. Luna, P. Fournier-Viger, S. Ventura: Extracting User-Centric Knowledge on Two Different Spaces: Concepts and Records. IEEE Access 8: 134782-134799 (2020)
- J. M. Luna, M. Pechenizkiy, W. Duivesteijn, S. Ventura: Exceptional in so Many Ways - Discovering Descriptors That Display Exceptional Behavior on Contrasting Scenarios. IEEE Access 8: 200982-200994 (2020)

- O. G. Reyes Pupo, E. Pérez, R. M. Luque, J. Castaño, S. Ventura: A supervised machine learning-based methodology for analyzing dysregulation in splicing machinery: An application in cancer diagnosis. *Artif. Intell. Medicine* 108: 101950 (2020)
- J. A. Delgado-Osuna, C. García-Martínez, J. Gómez Barbadillo, S. Ventura: Heuristics for interesting class association rule mining a colorectal cancer database. *Inf. Process. Manag.* 57(3): 102207 (2020)
- J. Gonzalez-Lopez, S. Ventura, A. Cano: Distributed multi-label feature selection using individual mutual information measures. *Knowl. Based Syst.* 188 (2020)
- J. M. Moyano, E. Gibaja, K. J. Cios, S. Ventura: Combining multi-label classifiers based on projections of the output space using Evolutionary algorithms. *Knowl. Based Syst.* 196: 105770 (2020)
- S. U. Hassan, N. R. Aljohani, N. Idrees, R. Sarwar, R. Nawaz, E. Martínez-Cámara, S. Ventura, F. Herrera: Predicting literature's early impact with sentiment analysis in Twitter. *Knowl. Based Syst.* 192: 105383 (2020)
- C. Romero, S. Ventura: Educational data mining and learning analytics: An updated survey. *Wiley Interdiscip. Rev. Data Min. Knowl. Discov.* 10(3) (2020)
- F. Padillo, J. M. Luna, S. Ventura: LAC: Library for associative classification. *Knowl. Based Syst.* 193: 105432 (2020)
- J. Gonzalez-Lopez, S. Ventura, A. Cano: Distributed Selection of Continuous Features in Multilabel Classification Using Mutual Information. *IEEE Trans. Neural Networks Learn. Syst.* 31(7): 2280-2293 (2020)

C.2. Research projects and grants

1. Project reference: 10032/19/0038/00 (2019/SP03390102/00000102)
Title: *Mantenimiento predictivo para plataformas terrestres (MANPREDIC)*
Principal researcher (name and surname): Sebastián Ventura Soto
Funding entity: Programa de Cooperación en Investigación Científica y Desarrollo en Tecnologías Estratégicas (Programa COINCIDENTE)
Duration (start date – finish date, in format DD/MM/AAAA): 28/11/2019 – 15/10/2021
Funding received (in euros): 478,957.00 €
Project or contract's state: granted
2. Project reference: H2020-GA-761809
Title: *A tele health tool for monitoring and treatment of Multiple Sclerosis patients (dreaMS)*
Principal researcher (name and surname): Sebastián Ventura Soto
Funding entity: Diatomic call
Duration (start date – finish date, in format DD/MM/AAAA): 15/07/2019 – 15/09/2020
Funding received (in euros): 174,687.50 €
Project or contract's state: granted (finished)
3. Project reference: TIN2017-83445-P
Title: *Tendencias y Problemas Emergentes en Minería de Datos*
Principal researcher (name and surname): Sebastián Ventura Soto
Funding entity: Ministerio de Ciencia e Innovación
Duration (start date – finish date, in format DD/MM/AAAA): 01/01/2018 – 31/12/2020
Funding received (in euros): 57,111.00€
Project or contract's state: granted
4. Project reference: TIN2014-55252-P
Title: *Minería de datos con representaciones más flexibles*
Principal researcher (name and surname): Sebastián Ventura Soto
Funding entity: Ministerio de Ciencia e Innovación
Duration (start date – finish date, in format DD/MM/AAAA): 01/01/2015 – 31/12/2017
Funding received (in euros): 84,579.00€
Project or contract's state: granted (finished)

5. Project reference: TIN2011-22408
Title: *New challenges in knowledge discovery: a genetic programming approach*
Principal researcher (name and surname): Sebastián Ventura Soto
Funding entity: Ministerio de Ciencia e Innovación
Duration (start date – finish date, in format DD/MM/AAAA): 01/01/2012 – 31/12/2014
Funding received (in euros): 63,525.00 €
Project or contract's state: granted (finished)
6. Project reference: P08-TIC-3720
Title: *Aplicación de Técnicas de Extracción de Conocimiento en los Sistemas Educativos (ATECSE)*
Principal researcher (name and surname): Sebastián Ventura Soto
Funding entity: Consejería de Innovación. Junta de Andalucía
Duration (start date – finish date, in format DD/MM/AAAA): 01/01/2009 – 31/12/2013
Funding received (in euros): 172,743.68 €
Project or contract's state: granted (finished)
7. Project reference: TIN2008-06681-C06-03
Title: *Tendencias Actuales y Nuevos Retos en KEEL: Aprendizaje Multi-Instancia, Redes Neuronales Evolutivas, Minería de Datos Educativos y Minería de Datos Web*
Principal researcher (name and surname): Sebastián Ventura Soto
Funding entity: Ministerio de Educación y Ciencia
Duration (start date – finish date, in format DD/MM/AAAA): 01/01/2009 – 31/12/2011
Funding received (in euros): 112,530.00 €
Project or contract's state: granted (finished)

C.3. Contracts

- Aplicación de la ciencia de datos para la mejora de la seguridad vial, movilidad y gestión de flotas de vehículos. Gesthispania S.L.U. 1/9/2020-P1Y. 37.645 €
- Production, maintenance and updating of two data mining applications for Santillana Global S.L. Santillana Global S.L. Sebastián Ventura Soto. 11/01/2016-P1Y. 40.000 €.
- Incorporation of educational data mining processes to the different e-learning applications of the Santillana Group: Design and implementation of Santillana Global S.L. applications. Sebastián Ventura Soto. 20/05/2015-P7M11D. 24.000 €.
- Incorporation of educational data mining processes to the different e-learning applications of the Santillana Group: Analysis and preparation of the information Grupo Santillana de Ediciones S.L. Sebastián Ventura Soto. 27/11/2014-P6M. 18.000 €.

C.4. Patents

- Francisco Javier Delgado Lista; Juan Francisco Alcalá Díaz; Francisco Jesús Gómez Delgado; José David Torres Peña; Antonio García Ríos; Ana Isabel Pérez Caballero; José López Miranda; Pablo Pérez Martínez; Ezequiel Herruzo Gómez; Sebastián Ventura Soto; Orio Alberto Rangel Zuñiga; Antonio Camargo García; Roberto Otero Aragón; José María Luna Ariza. 201799901595517. GLUCOGENE Spain. 10/05/2017.
- Cristóbal Romero Morales; Miguel Ruz Moreno; José Antonio Ramos Fernández; Inmaculada Caballero Rey; Sebastián Ventura Soto. 200600594. Sistema de control remoto para personas con discapacidad (Remote control system for people with disabilities) Spain. 02/02/2010.

C.5, C.6, C.7... (e.g., Institutional responsibilities, memberships of scientific societies...)

- R. Barbudo, JR Romero & S. Ventura. Automatic learning with grammatical genetic programming for the detection of design patterns. *Conferencia de la Asociación Española para la Inteligencia Artificial (AEPIA 2018)*. Best student work.
- Included in Thomson Reuters' *Scientist Ranking in Computer Science*: number 1619 of 2898. Year 2014.
- Included in Thomson's *Highly Cited Researchers* list. Year 2013.