

CV Date

11/06/2025

Part A. PERSONAL INFORMATION

First Name	César Ignacio		
Family Name	García Osorio		
Sex	Not Specified	Date of Birth	
ID number Social Security, Passport			
URL Web	http://cgosorio.es		
Email Address			
Open Researcher and Contributor ID (ORCID)	0000-0002-1206-1084		

A.1. Current position

Job Title	Catedrático de universidad		
Starting date	2021		
Institution	Universidad de Burgos		
Department / Centre	Ingeniería Informática / Escuela Politécnica Superior		
Country		Phone Number	
Keywords	120304 - Artificial intelligence		

A.3. Education

Degree/Master/PhD	University / Country	Year
Doctor of Philosophy for a thesis entitled "Data Mining and Visualization"	University of Paisley (Escocia, UK) / United Kingdom	2005
Ingeniero en Informática	Universidad de Valladolid	1996
Diplomado en Informática Especialidad Gestión	Universidad de Valladolid	1994

Part B. CV SUMMARY

César García-Osorio is MSc in Computer Engineering (1996) from the University of Valladolid (Spain) and PhD (2005) from the University of the West of Scotland (UK). Since 1996 he has been working at the University of Burgos (Spain). During this time he has participated in the teaching of different subjects: Office Automation, Information and Administrative Documentation I and II, Data Structures, Analysis and Software Engineering, Expert Systems and Artificial Intelligence, Automata and Formal Languages, Language Processors, Computer Systems, Intelligent Systems, Web Design. He has tutored more than 30 final projects.

Recently he has been an organizer and teacher of two courses about LaTeX for the Training Office of the University of Burgos, and also another two courses for Regional Ministry of Education of the Castilla y León Regional government, one about XML and the other about Python programming.

He has received mobility grants for stays at the University of the West of Scotland in 2003, 2004 and 2005 and at Tsinghua University in 2007 (this university is ranked 48 worldwide, in 14 Asian universities and in the position number 1 of the QS BRICS ranking). His research interests include data visualization, machine learning, data mining and artificial intelligence. He has published in high ranked international journals such as Artificial Intelligence, Machine Learning Research, Information Fusion or Neurocomputing (all indexed in the JCR). He currently has three periods of 6 years on research work (sexenios) recognized by the Spanish Ministry of Education and Science. He is associate editor of the International Journal on Artificial Intelligence Tools - Architectures, Languages, Algorithms (indexed in the JCR). He has also been a reviewer for journals such as Pattern Recognition, IEEE Transactions on Knowledge and Data Engineering. He is currently coordinator of the research group "Advanced Data Mining Research And Business intelligence / Bioinformatics / Big data LEarning" with acronym ADMIRABLE [<http://admirable-ubu.es/>], whose creation he led and which was recognized by

the University of Burgos on February 17, 2009. He was also the coordinator of the Consolidated Research Unit 170 (UIC-170) from July 21, 2015 to June 1, 2018, for whose creation it was also responsible.

He has been the principal investigator (PI) in two regional and two national research projects. He has been the PI within the UBU in an INNPACTO project with a cluster of companies and technology centers, and in an article 83 with Grupo Antolín. He also has participated in three other national research projects collaborating with the Computational Intelligence and Bioinformatics Research Group of the University of Córdoba and in an international one in collaboration with the University of Bangor, UK. He has also participated in two other European projects at the University of Burgos. The total amount of all these projects is about two million euros.

He has been supervisor of 7 PhDs and he is currently supervising 2 PhD candidates. He has published 42 papers in journals indexed in the JCR, of which 26 are from the first quartile. According to Google Scholar, his h-index is 26.

Part C. RELEVANT ACCOMPLISHMENTS

C.1. Most important publications in national or international peer-reviewed journals, books and conferences

AC: corresponding author. (n° x / n° y): position / total authors. If applicable, indicate the number of citations

- 1 **Scientific paper.** Mario Juez Gil; Álar Arnaiz González; Juan José Rodríguez Díez; César Ignacio García Osorio. 2021. Experimental evaluation of ensemble classifiers for imbalance in Big Data. Applied Soft Computing. 108. ISSN 1568-4946. <https://doi.org/10.1016/j.asoc.2021.107447>
- 2 **Scientific paper.** Mario Juez Gil; Álar Arnaiz González; Juan José Rodríguez Díez; Carlos López Nozal; César Ignacio García Osorio. 2021. Rotation Forest for Big Data. Information Fusion. 74, pp.39-49. ISSN 1566-2535. <https://doi.org/10.1016/j.inffus.2021.03.007>
- 3 **Scientific paper.** Arnaiz-González, Álar; Díez-Pastor, José-Francisco; Rodríguez, Juan J.; García-Osorio, César. 2016. Instance selection of linear complexity for big data. Knowledge-Based Systems. ISSN 0950-7051. <https://doi.org/10.1016/j.knosys.2016.05.056>
- 4 **Scientific paper.** José F. Díez-Pastor; Juan J. Rodríguez; César I. García-Osorio; Ludmila I. Kuncheva. 2015. Diversity techniques improve the performance of the best imbalance learning ensembles. Information Sciences. <https://doi.org/10.1016/j.ins.2015.07.025>
- 5 **Scientific paper.** José F. Díez-Pastor; Juan J. Rodríguez; César García-Osorio; Ludmila I. Kuncheva. 2015. Random Balance: Ensembles of variable priors classifiers for imbalanced data. Knowledge-Based Systems. Elsevier. Ludmila I. Kuncheva. <https://doi.org/10.1016/j.knosys.2015.04.022>
- 6 **Scientific paper.** Alicia Olivares Gil; José Antonio Barbero Aparicio; Juan José Rodríguez Díez; José Francisco Díez Pastor; (5/6) César Ignacio García Osorio; Mehdi D Davari. 2025. Semi-supervised prediction of protein fitness for data-driven protein engineering. Journal of Cheminformatics. BioMed Central. 17-1.
- 7 **Scientific paper.** José Luis Garrido Labrador; Jesús Manuel Maudes Raedo; Juan José Rodríguez Díez; (4/4) César Ignacio García Osorio. 2025. SSLearn: A Semi-Supervised Learning library for Python. SoftwareX. Elsevier. 29. ISSN 2352-7110.
- 8 **Scientific paper.** José Antonio Barbero Aparicio; Alicia Olivares Gil; Juan José Rodríguez Díez; César Ignacio García Osorio. 2024. Addressing data scarcity in protein fitness landscape analysis: A study on semi-supervised and deep transfer learning techniques. Information Fusion. 102.
- 9 **Scientific paper.** Barbero-Aparicio, José A; Olivares-Gil, Alicia; Díez-Pastor, José F; García-Osorio, César. 2023. Deep learning and support vector machines for transcription start site identification. PeerJ Computer Science. PeerJ Inc.. 9, pp.e1340-e1340.

- 10 Scientific paper.** Olivares Gil, Alicia; Arnaiz Rodríguez, Adrián; Ramírez Sanz, José Miguel; et al; others. 2022. Mapping the scientific structure of organization and management of enterprises using complex networks. *International Journal of Production Management and Engineering*. Universitat Politècnica de València. 10-1, pp.65-76.
- 11 Scientific paper.** Ramos-Pérez, Ismael; Arnaiz-González, Álar; Rodríguez, Juan J; García-Osorio, César. 2022. When is resampling beneficial for feature selection with imbalanced wide data?. *Expert Systems with Applications*. Pergamon. 188, pp.116015-116015.
- 12 Scientific paper.** Juez-Gil, Mario; Arnaiz-González, Alvar; Rodríguez, Juan J.; López-Nozal, Carlos; García-Osorio, César. 2021. Approx-SMOTE: fast SMOTE for Big Data on Apache Spark. *Neurocomputing*. Elsevier. 464, pp.432-437. ISSN 0925-2312.
- 13 Scientific paper.** Mario Juez Gil; Juan Saucedo Dorantes; Álar Arnaiz González; Carlos López Nozal; César García Osorio; David Lowe. 2020. Early and extremely early multi-label fault diagnosis in induction motors. *ISA Transactions*. 106, pp.367-381. ISSN 0019-0578. <https://doi.org/10.1016/j.isatra.2020.07.002>
- 14 Scientific paper.** Mirosław Kordos; Álar Arnaiz González; César García Osorio. 2019. Evolutionary prototype selection for multi-output regression. *Neurocomputing*. Elsevier. 358, pp.309-320. ISSN 0925-2312. <https://doi.org/10.1016/j.neucom.2019.05.055>
- 15 Scientific paper.** María Consuelo Sáiz Manzanares; Miguel Ángel Queiruga Dios; César Ignacio García Osorio; Eduardo Montero García; Jairo Rodríguez Medina. 2019. Observation of Metacognitive Skills in Natural Environments: A Longitudinal Study With Mixed Methods. *Frontiers in Psychology*. 10, pp.2398. ISSN 1664-1078. <https://doi.org/10.3389/fpsyg.2019.02398>
- 16 Scientific paper.** Arnaiz-González, Álar; Díez-Pastor, José-Francisco; J Rodríguez, Juan; García-Osorio, César. 2018. Local sets for multi-label instance selection. *Applied Soft Computing*. 68, pp.651-666. ISSN 1568-4946. <https://doi.org/10.1016/j.asoc.2018.04.016>
- 17 Scientific paper.** Díez-Pastor, José Francisco; Jorge-Villar, Susana Esther; Arnaiz-González, Álar; García-Osorio, César Ignacio; Díaz-Acha, Yael; Campeny, Marc; Bosch, Josep; Melgarejo, Joan Carles. 2018. Machine learning algorithms applied to Raman spectra for the identification of variscite originating from the mining complex of Gavà. *Journal of Raman Spectroscopy*. 0-0. ISSN 0377-0486. <https://doi.org/10.1002/jrs.5509>
- 18 Scientific paper.** Arnaiz-González, Álar; Díez-Pastor, José-Francisco; Rodríguez, Juan J.; García-Osorio, César. 2018. Study of data transformation techniques for adapting single-label prototype selection algorithms to multi-label learning. *Expert Systems with Applications*. 109, pp.114-130. ISSN 0957-4174. <https://doi.org/10.1016/j.eswa.2018.05.017>
- 19 Scientific paper.** Arnaiz-González, Álar; Blachnik, Marcin; Kordos, Mirosław; García-Osorio, César. 2016. Fusion of instance selection methods in regression tasks. *Information Fusion*. 30, pp.69-79. ISSN 1566-2535. <https://doi.org/10.1016/j.inffus.2015.12.002>
- 20 Scientific paper.** Arnaiz-González, Álar; Díez-Pastor, José-Francisco; José Rodríguez-Díez, Juan; García-Osorio, César. 2016. Instance selection for regression by discretization. *Expert Systems With Applications*. ISSN 0957-4174. <https://doi.org/10.1016/j.eswa.2015.12.046>
- 21 Scientific paper.** Arnaiz-González, Álar; Díez-Pastor, José F.; Rodríguez, Juan J.; García-Osorio, César. 2016. Instance selection for regression: Adapting DROP. *Neurocomputing*. ISSN 0925-2312. <https://doi.org/10.1016/j.neucom.2016.04.003>
- 22 Scientific paper.** Arnaiz-González, Álar; Díez-Pastor, José F.; García-Osorio, César; Rodríguez, Juan J. 2016. Random feature weights for regression trees. *Progress in Artificial Intelligence*. 5-2, pp.91-103. ISSN 2192-6360. <https://doi.org/10.1007/s13748-016-0081-5>

C.3. Research projects and contracts

- 1 Project.** Métodos y aplicaciones industriales del aprendizaje semisupervisado. Juan José Rodríguez Díez. (Universidad de Burgos). 2020-2023. 172.000 €. Team member.

- 2 Project.** A04W05, Estudio de los mecanismos de patogenidad de Campylobacter jejuni como causante de cardiomiopatías y posibles soluciones en base a sustancias antimicrobianas naturales (Campycardio). Fundación Bancaria Caixa d'Estalvis i Pensions de Barcelona, «la Caixa». Beatriz Melero Gil. (Universidad de Burgos). 01/06/2019-31/05/2021. 80.000 €. Team member.
- 3 Project.** INVESTUN/18/BU/0002, Módulo de Realidad Virtual Inmersiva para la prevención de riesgos laborales en la interacción con puentes grúa. Junta de Castilla y León. Andrés Bustillo Iglesias. (Universidad de Burgos). 04/09/2018-30/09/2020. 61.500 €. Team member.
- 4 Project.** TIN2015-67534-P, Algoritmos de ensembles para problemas de salidas múltiples. Nuevos desarrollos y aplicaciones. Ministerio de Economía y Competitividad. César Ignacio García Osorio. (Universidad de Burgos). 01/01/2016-31/12/2019. 65.703 €. Principal investigator.
- 5 Project.** <https://cordis.europa.eu/project/id/691095>, Developing and implementation of a new generation of nanosafety assessment tools. European Commission. Alfredo Bol Arriba. (Universidad de Burgos). 01/01/2016-31/12/2019. 139.500 €. Team member.
- 6 Project.** BU085P17, Minería de datos para la mejora del mantenimiento y disponibilidad de máquinas de altas presiones. Junta de Castilla y León. César Ignacio García Osorio. (Universidad de Burgos). 26/07/2017-31/10/2019. 119.200 €. Principal investigator.
- 7 Project.** <https://cordis.europa.eu/project/id/686056>, NOVel, critical materials free, high Anisotropic phases for permanent MAGnets, by design (NOVAMAG). European Commission. Alfredo Bol Arriba. (Universidad de Burgos). 01/04/2016-30/09/2019. 497.575 €.
- 8 Project.** TIN2011-24046, Algoritmos de ensembles para regresión: nuevos métodos y aplicaciones. Ministerio de Economía y Competitividad. César Ignacio García Osorio. (Universidad de Burgos). 01/01/2012-31/12/2015. 23.232 €. Principal investigator.
- 9 Project.** IPT-2011-1265-020000, Mantenimiento Proactivo de Máquinas Remotas Singulares. Ministerio de Economía y Competitividad. Roberto Aranz Gómez (coordinador global) y César Ignacio García Osorio (IP por parte de la Universidad de Burgos). (Universidad de Burgos). 01/07/2011-31/12/2014. 1.377.950,12 €. Principal investigator. La Universidad de Burgos participa con 4 investigadores y yo fui el investigador principal del subproyecto asignado a la Universidad.
- 10 Contract.** Investigación en Big Data e Inteligencia Artificial para favorecer el desarrollo de modelos de servitización y aumentar la eficiencia productiva en el sector de bienes de equipo y automoción de Castilla y León (BIGIA) Centro Tecnológico de Miranda de Ebro. Andrés Bustillo Iglesias. 01/01/2018-01/01/2019. 15.000 €.
- 11 Contract.** Sistema avanzado de analítica predictiva con computación en la nube (neural designer) Empresa Artificial Intelligence Techniques, S.L.. Juan José Rodríguez Díez. 23/05/2016-23/09/2016. 4.950 €.
- 12 Contract.** Analysis of COPD (chronic obstructive pulmonary disease) data: feature selection and classifier construction Bangor University. Juan José Rodríguez Díez. (Universidad de Burgos). 01/11/2011-16/12/2011. 2.462,27 €.
- 13 Contract.** Nuevas funcionalidades de fresadoras mediante la utilización de técnicas de inteligencia artificial y realidad virtual - IMPELER NICOLAS CORREA, S.A.. Andrés Bustillo Iglesias. 13/12/2010-13/06/2013. 29.900 €.
- 14 Contract.** Magnesium New Technologies Opportunities (MAGNO) Grupo Antolín Ingeniería. César Ignacio García Osorio. 01/01/2008-01/07/2012. 80.000 €.

C.4. Activities of technology / knowledge transfer and results exploitation

- 1** Álvaro Arnáiz González; César Ignacio García Osorio; Juan José Rodríguez Díez; José Francisco Díez Pastor; Carlos López Nozal. 00/2021/4763. Instance selection: aplicación de selección de instancias orientada a la docencia Spain. 14/09/2021. Universidad de Burgos.
- 2** César Ignacio García Osorio; Ismael Ramos Pérez; José Francisco Díez Pastor; Álvaro Arnáiz González. BU-68-20. Seshat tool Spain. 29/07/2020. Universidad de Burgos.