CV date	Dec 12, 2022

Part A. PERSONAL INFORMATION

First name	Jerónimo
Family name	Arenas García

e-mail	jarenas@ing.uc3m.es	https://www.linkedin.com/in/jeronimoarenas
Open Research and Contributor ID (ORCID)(*)	0000-0003-4071-7068	

(*) Mandatory

A.1. Current position

Position	Professor		
Initial date	28/11/2022		
Institution	Universidad Carlos III de Madrid		
Departament/Center	Signal Theory and Communications		
Country	Spain	Teleph. number	91 624 6251
Key words	Machine Learning, Topic Modeling, Natural Language Processing, Generative models, Big Data, Deep Learning, Adaptive systems		

A.2. Previous positions (research activity interruptions, art. 45.2.c))

Period	Position/Institution/Country/Interruption cause
09/12/09 – 27/11/22	Associate Professor / UC3M / Spain
21/11/07 - 08/12/09	Associate Professor (Internship) / UC3M / Spain
15/12/06 - 20/11/07	Visiting Professor / UC3M / Spain
13/12/05 - 14/12/06	Ministry of Education Postdoc Fellow / DTU / Denmark
10/12/04 - 12/12/05	Assistant Professor / UC3M / Spain
01/04/01 - 30/11/04	Ministry of Education FPU Grant / UC3M / Spain

A.3. Education

PhD, Licensed, Graduate	University/Country	Year
Telecommunication Engineer	Universidad Politécnica de Madrid / Spain	2000
PhD in Telecommunication Engineering (PhD Program in Communication Technologies)	Universidad Carlos III de Madrid / Spain	2004

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

Jerónimo Arenas García is Telecommunications Engineer from Universidad Politécnica de Madrid (year 2000, No. 1 of promotion and National Degree Award) and Doctor from the Carlos III University (year 2004, Extraordinary Doctorate Award). He has developed his research work at the Carlos III University of Madrid and at the Technical University of Denmark (15-month postdoctoral stay). Likewise, he has

carried out pre and postdoctoral stays at other research centers: Univ. Sheffield (UK), Univ. California, Los Angeles (UCLA, USA), I.I.T. Kharagpur (India) and Univ. São Paulo (Brazil).

From November 2018 to March 2020, Dr. Arenas García was on leave working for the Language Technology Plan (PTL) of the Secretary of State for Digital Advancement, being a member of the Technical Office of the Plan as a Machine Learning expert. Specifically, during said stay he was responsible for Corpus Viewer, a Natural Language Processing (NLP) platform. After this stay, and with the aim of achieving the deployment and exploitation of the technologies transferred during it, he has received funding from the European Commission for two H2020 research projects: IntelComp, which aims to develop a cloud / HPC platform to support the design, implementation and monitoring of science and technology policies, and nextProcurement, a CEF project with a similar objective but in the field of public procurement. Dr. Arenas García is the principal investigator of both projects at UC3M, and Technical Manager at IntelComp.

Dr. Arenas García is the co-author of 33 publications in JCR journals (22 Q1) and more than 60 conference articles. During the last 10 years he has participated in 9 research projects (4 as PI), including 3 H2020 projects and 19 research contracts (8 as PI).

The research work of D. Jerónimo Arenas García focuses on the field of machine learning, specifically in the semantic analysis of text collections, and extraction of characteristics through multivariate analysis and kernel methods. Some of the applications in which he has maintained a more intense activity are the development of tools based on Natural Language Processing (NLP) and Artificial Intelligence (AI) for the analysis of science-related collections (articles, patents, project proposals), labor market, and the curriculum of educational programs, as well as the creation of user profiles and the detection of fraudulent activities in these fields.

Currently, the research objectives of Dr. Arenas García are focused on the design of new models of topics supervised by experts, and that allow connecting topics and documents belonging to collections with heterogeneous and / or multilingual vocabularies, and the application of these techniques to the analysis of documentary corpus in the field of Science, Technology and Innovation.

Dr. Arenas García has been President of the Spanish Chapter on Signal Processing and Communications, an elected member of the Technical Committee of the IEEE Machine Learning for Signal Processing and Associate Editor of the IEEE Signal Processing Letters magazine. He is also a member of the Scientific Committee of several international congresses and actively reviews for numerous journals.

General Indicators of Scientific Production

- Co-supervisor of **4** PhD Thesis (last 10 years)
- Total Number of Citations (WoS): **1708**
- Average Citations / year (2016-2020, WoS): **163,6**
- Total # Journal Publications: **33**
- # Q1 Journal Publications: **22**
- h-Index (WoS): **22**
- Papers Intl. conferences with peer-review: **~60**

Network of coauthors from foreign institutions: A. H. Sayed (UCLA), L. K. Hansen, J. Larsen, S. H. Jensen (Dinamarca), W. Kellermann (U. Erlangen-Nuremberg, Alemania), A. Uncini (U. Roma La Sapienza), V. H. Nascimento, M. T. M. Silva (U. Sao Paulo, Brasil), M. Chakraborty (IIT, Kharagpur, India), A. C. Sharkey (U. Sheffield, UK).

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

C.1. Publications
Selection of most relevant Q1 publications in last 10 years. The complete list can be seen at Google Scholar profile: https://scholar.google.es/citations?hl=es&user=40AV6F0AAAAJ

[1] M. Vázquez-López, J. Pereira-Delgado, J. Cid-Sueiro, J. Arenas-García "Validation of Scientific Topic Models using Graph Analysis and Corpus Metadata," *Scientometrics* (accepted), 2022.

[2] S. Muñoz-Romero, J. Arenas-García, V. Gómez-Verdejo, "Nonnegative OPLS for Supervised design of filter Banks: Applications to Image and Audio Feature Extraction," *IEEE Trans. Multimedia,* vol. 20, pp. 1751-1766, 2018.

[3] J. Fernandez-Bes, J. Arenas-García, M. T. M. Silva, L. A. Azpicueta-Ruiz, "Adaptive Diffusion Schemes for Heterogeneous Networks," *IEEE Trans. Signal Process*, vol. 65, pp. 5661-5674, 2017.

[4] S. Muñoz-Romero, V. Gómez-Verdejo, J. Arenas-García, "Regularized Multivariate Analysis Framework for Interpretable High-Dimensional Variable Selection," *IEEE Computational Intelligence Mag*. vol. 11, pp. 24 – 35, 2016

[5] J. Arenas-García, L. A. Azpicueta-Ruiz, M. T. M. Silva, V. Nascimento, and A. H. Sayed, "Combinations of adaptive filters: performance and convergence properties," *IEEE Signal Process. Magazine*, vol. 33, pp. 120-140, 2016.

[6] S. Muñoz-Romero, J. Arenas-García, V. Gómez-Verdejo, "Sparse and kernel OPLS feature extraction based on eigenvalue problem solving," *Pattern Recognition*, vol. 48, pp. 1797–1811, 2015.

[7] J. Arenas-García, K. B. Petersen, G. Camps-Valls, and L. K. Hansen, "Kernel Multivariate Analysis Framework for Supervised Subspace Learning," *IEEE Signal Process. Mag*, pp. 16-29, Jul. 2013.

[8] D. Comminiello, M. Scarpiniti, L. A. Azpicueta-Ruiz, J. Arenas-García, and A. Uncini, "Functional Link Adaptive Filters for Nonlinear Acoustic Echo Cancellation," *IEEE Trans. Audio, Speech, and Lang. Process.,* vol. 21, pp. 1502-1512, Jul. 2013.

[9] M. T. M. Silva and J. Arenas-García, "A soft-switching blind equalization scheme via convex combination of adaptive filters," *IEEE Trans. Signal Process,* vol. 61, pp. 1171-1182, Mar. 2013.

C.2. Congress
More than 60 papers in international peer-reviewed conferences. The full list is available at: https://scholar.google.es/citations?hl=es&user=40AV6F0AAAAJ

C.3. Research projects

C3.1. European projects
[1] 01/01/2022 – 31/12/2024: "nextProcurement: Open Harmonized and Enriched Public Procurement Platform". Funding Agency: European Commission (CEF). Principal Investigator (PI): Dr. Jerónimo Arenas-García (UC3M budget: 266.430 €)

[2] 01/01/2021 – 31/12/2023: "INTELCOMP: A Competitive Intelligence Cloud/HPC Platform for AI-based STI Policy Making". Funding Agency: European Commission. Principal Investigator (PI): Dr. Jerónimo Arenas García (UC3M budget: 535.625 €)

[3] 01/12/2018 – 30/11/2021: "Machine learning to augment shared knowledge in federated privacy-preserving scenarios". Funding Agency: European Commission. PI: Dr. Ángel Navia Vázquez (UC3M budget 397.500 €).

C3.2. National Projects

[4] 01/12/2022 – 30/11/2024: "Massive Text Processing and Artificial Intelligence for the Management of Research and Training at the University". Funding Agency: Spain Ministry of Economic Affairs and Digital Transformation. PI: Dr. Jerónimo Arenas García (215.510 €)

[5] 01/01/2018 – 30/09/2021: "Machine Learning for Big Data Analysis of Heterogeneous Document Sources". Funding Agency: Spain Ministry of Economic Affairs and Digital Transformation. PI: Dr. Jesús Cid Sueiro (151.250 €)

[6] 01/01/2015 – 31/12/2018: "Interpretable features and metrics learning for computational intelligence" (TEC2014-52289-R). Funding Agency: Spain Ministry of Economy and Competitiveness. PI: Dra. Vanessa Gómez Verdejo (156.695€).

[7] 01/10/2014 – 30/09/2018: "PRICAM-CM: Intelligent Smart Grids Program of the Community of Madrid". Funding Agency: Community of Madrid. PI: Dr. Manel Martínez Ramón (48.464,28 €).

[8] 01/01/2012 – 31/12/2014: "Advanced Automatic Learning for Signal and Data Processing" (TEC 2011-22480). Funding Agency: Spain Ministry of Economy and Competitiveness. PI: Dr. Jerónimo Arenas García (105.996 €).

[9] 01/12/2011 – 30/11/2014: "Advanced Adaptive Filtering Techniques: Application to Sensor Networks and Sparse Systems" (PRI-PIBIN-2011-1266). Funding Agency: Spain Ministry of Economy and Competitiveness. PI: Dr. Jerónimo Arenas García (74.800 €).

C.4. Contracts, technological or transfer merits

Number of Contracts in last 10 years: 21 (**10** as PI). Sum of budgets: ~1M € (520 k€ as PI)

Most relevant projects are listed below, full list can be found at
https://researchportal.uc3m.es/display/inv34318:

[1] 19/07/22 – 19/01/24: "Servicios de soporte en la aplicación de técnicas de IA, ML, PLN, MT y sistemas conversacionales, así como la asesoría en la instrumentación legal asociada a dichas actividades, en el ámbito del Plan Nacional de Tecnologías del Lenguaje," **ISDEFE, S.A.** PI: Jerónimo Arenas García (74.700 €).

[2] 04/11/2020 – 31/12/2022: "Consultancy and technical assistance tasks activities in the Natural Language Processing Area". **Spain Foundation for Science and Technology (FECYT)**. PI: Dr. Jerónimo Arenas García (5.000 €).

[3] 01/04/2020 – 30/06/2020: "Analysis service for the Crunchbase and Scopus databases". **Everis Soluciones Tecnológicas, S. L. U**. PI: Jerónimo Arenas García (14.375 €).

[4] 20/03/2019 – 19/06/2020: "Evolution service for retrieving Internet Job Market information and indicators of digital transformation". **Red.es**. PIs: Drs. Jerónimo Arenas García and Jesús Cid-Sueiro (16.989,90 €).

[5] 19/04/2018 – 18/10/2018: "Trend identification in the R+D+I sector". **Spain Ministry of Energy, Tourism, and Digital Agenda**. PI: Jerónimo Arenas García (12.000 €)

[6] 31/10/2018 – 04/05/2020: "Machine Learning Support to SEDIA in Natural Language Processing Plan tasks". **ISDEFE, S.A.** PI: Jerónimo Arenas García (69.747,67 €).

[7] 19/12/2016 – 18/03/2017: "Service for analyzing research projects using topic modeling, clustering, and graph visualization. **Spain Foundation for Science and Technology (FECYT)**. PI: Dr. Jerónimo Arenas García (17.650 €).

[8] 09/09/2014 – 08/12/2014: "Experimental study using latent semantic tools for monitoring the ICT sector and the Information Society". **State Secretary of Telecomm. and Information Society**. PIs: Drs. Jerónimo Arenas García and Jesús Cid Sueiro (17.500 €)