MINISTERIO DE CIENCIA E INNOVACIÓN

Cofinanciado por la Unión Europea

AGENCIA ESTATAL DE INVESTIGACIÓN

CURRICULUM VITAE (CVA)

IMPORTANT – The Curriculum Vitae cannot exceed 4 pages. Instructions to fill this document are available in the website.

Part A. PERSONAL INFORMATION

CV date	2024/02/22

First name	MARIA SOLEDAD		
Family name	DELGADO SANZ		
Gender (*)	Woman	Birth date (dd/mm/yyyy)	22/07/1968
Social Security, Passport, ID number	33508875Z		
e-mail	mariasoledad.delgado@upm.es	URL Web	
Open Researcher and Contributor ID (ORCID) (*)	0000-0003-4868-3712		

(*) Mandatory

A.1. Current position

Position	Titular Universidad		
Initial date	2017-05-30		
Institution	UPM		
Department/Center	E.T.S DE ING. DE SISTEMAS INFORMÁTICOS/SISTEMAS INFORMATICOS		
Country	Spain	Teleph. number	NA
Key words	Lenguajes y Sistemas Informáticos		

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

Period	Position/Institution/Country/Interruption cause
1991-2017	TITULAR E.U. / Universidad Politécnica de Madrid / Spain.

A.3. Education

PhD, Licensed, Graduate	University/Country	Year
Ingeniería en Informática	Universidad Carlos III de Madrid	2000
Doctor en programa oficial de posgrado en Ingeniería Informática	Universidad Politécnica de Madrid	2010

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

Scientific, academic and research career: -1989-1990: Scholar at the Institute of Industrial Automation of the CSIC. She begins research in the field of Artificial Intelligence, specifically in Artificial neural network models. -1990: obtaining the Diploma in Computer Science from the UPM, presenting as a Final Project an OCR system based on the BackPropagation neural network model (Honors). -1990-1991: Scholar at the Torres Quevedo Institute of the CSIC. -2000: Obtained the title of Computer Science Engineer from the Carlos III University of Madrid, presenting as a Final Project the analysis, design and implementation of a simulator for unsupervised artificial neural networks (Honors). -2000-2002: Completion of the Interdepartmental doctoral program in Computer Science of the Faculty of Computer Science

of the UPM. -2003-2009: Several presentations at international conferences, related to the line of research of unsupervised artificial neural networks: architectures, training algorithms and their application to data mining in various scientific fields (remote sensing, biology, medicine, etc). -2007: Obtaining accreditation of research proficiency. -2009-2011: Participation in various I+D+I projects financed in public competitive calls, related to remote sensing. -2010: Obtained the PhD from the Polytechnic University of Madrid, presenting the Doctoral Thesis titled: New algorithms for training and visualization of self-organizing neural networks for their application in remote sensing (Cum Laude). -2011-2024: publication of eight research articles in JCR journals with a high impact index (Q1 and Q2), related to unsupervised artificial neural network methodologies. -1991-2024: 33 years of teaching experience at the UPM (Computer Science Engineering). Line of scientific research: Since 1989 the main line of research focuses on the field of artificial neural networks. In this process she has investigated new architectures and algorithms for training neural networks, and their adaptation and exploitation for data mining processes in scientific fields as varied as biology, medicine or chemistry.
Medium/long-term research: Since 2007 she has collaborated with researchers from the UCM (Department of Biochemistry and Molecular Biology), the Astrobiology Center (CSIC-INTA) and the ISCIII of Madrid. Since 2019 she has collaborated with researchers from the Center for Molecular Biology "Severo Ochoa" (CSIC-UAM). The collaboration with the research group of Dr. Carlos Briones of the Department of Molecular Evolution (Center for Astrobiology (CSIC-INTA)) stands out, in the analysis of images by AFM (Atomic Force Microscopy) within the projects BIO2013-47228-R , BIO2016-79618-R, PID2019-104903RB-100 and PID2022-139908OB-I00. The medium/long-term scientific-technical interests and objectives focus on continuing with research collaborations on data mining based on artificial neural networks and its application to knowledge extraction.

Nº of six-year term CNEAI: 2 (Last Year Granted: 2022) | Total Pub. (WoS Core): 15 | Total Citation: 65 (to date of: 2024-02-19) | Total Pub. (Scopus): 16 | Total Citation: 89 (to date of: 2024-02-19) | Average number of citation/doc (WoS Core): 5.222 (to date of: 2024-02-19) | Total of Pub. Q1: 8 | - Total of Pub. Q1: 5 (WoS Core) | - Total of Pub. Q1: 7 (Scopus) | Total of Pub. Q1 (last 10 years): 7 | - Total of Pub. Q1 (last 10 years): 5 (WoS Core) | - Total of Pub. Q1 (last 10 years): 6 (Scopus) | Total of Pub. D1: 4 | - Total of Pub. D1: 2 (WoS Core) | - Total of Pub. D1: 4 (Scopus) | H index(WoS Core): 5 (to date of: 2024-02-19) | H index(Scopus): 6 (to date of: 2024-02-19)

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

C.1. Publications *(see instructions)*

1.-Article. Delgado, MS; López-Galíndez, C; Moran, F... et al;. Delgado MS (1/3). 2023. Viral Fitness Landscapes Based on Self-organizing Maps. CURRENT TOPICS IN MICROBIOLOGY AND IMMUNOLOGY. 439 95-119. ISSN/ISBN: 0070217X. SCOPUS (0) . https://doi.org/10.1007/978-3-031-15640-3_2

2.-Article. Martinez-Gonzalez, Brenda; Eugenia Soria... et al;. Delgado, S (18/32). 2022. SARS-CoV-2 Mutant Spectra at Different Depth Levels Reveal an Overwhelming Abundance of Low Frequency Mutations. PATHOGENS. 11 (6): . ISSN/ISBN: 20760817. WOS (2) SCOPUS (7) . https://doi.org/10.3390/pathogens11060662

3.-Article. Delgado, Soledad; Perales, Celia; Garcia... et al;. Delgado, S (AC) (1/11). 2021. A Two-Level, Intramutant Spectrum Haplotype Profile of Hepatitis C Virus Revealed by Self-Organized Maps. MICROBIOLOGY SPECTRUM. 9 (3): E01459-21-. ISSN/ISBN: 21650497. WOS (3) SCOPUS (5) . https://doi.org/10.1128/Spectrum.01459-21

4.-Article. Guaman, Daniel; Delgado, Soledad; Perez,... et al;. Delgado, S (2/3). 2021. Classifying Model-View-Controller Software Applications Using Self-Organizing Maps. IEEE ACCESS. 9 45201-45229. ISSN/ISBN: 21693536. WOS (3) SCOPUS (6) . https://doi.org/10.1109/ACCESS.2021.3066348

5.-Article. Delgado, Soledad; Moran, Federico; San J... et al;. Delgado, S (AC) (1/4). 2021. Analysis of Students' Behavior Through User Clustering in Online Learning Settings, Based on Self Organizing Maps Neural Networks. IEEE ACCESS. 9 132592-132608. ISSN/ISBN: 21693536. WOS (2) SCOPUS (4) . https://doi.org/10.1109/ACCESS.2021.3115024

6.-Article. Delgado, Soledad; Moreno, Miguel; Vazque... et al;. DELGADO SANZ, MARIA SOLEDAD (5). 2019. Morphology Clustering Software for AFM Images, Based on Particle Isolation and Artificial Neural Networks. IEEE ACCESS. 7 160304-160323. ISSN/ISBN: 21693536. WOS (1) SCOPUS (1) . https://doi.org/10.1109/ACCESS.2019.2950984

7.-Article. Delgado, Soledad; Higuera, Clara; Calle-... et al;. Delgado, Soledad (1/5). 2017. A SOM prototype-based cluster analysis methodology. EXPERT SYSTEMS WITH APPLICATIONS. 88 14-28. ISSN/ISBN: 09574174. WOS (16) SCOPUS (22) . https://doi.org/10.1016/j.eswa.2017.06.022

8.-Article. Delgado, Soledad; Moran, Federico; Mora,... et al;. Delgado, Soledad (1/5). 2015. A novel representation of genomic sequences for taxonomic clustering and visualization by means of self-organizing maps. BIOINFORMATICS. 31 (5): 736-744. ISSN/ISBN: 13674803. WOS (12) SCOPUS (13) . https://doi.org/10.1093/bioinformatics/btu708

9.- Article in press. Soledad Delgado, Pilar Somovilla, Cristina Ferrer-Orta, Brenda Martíne...[et al.]. 2024. Incipient functional SARS-CoV- 2 diversification identified through neural network haplotype maps. Proceedings Of The National Academy Of Sciences Of The United States Of America. National Academy of Sciences (https://www.pnas.org). ISSN 0027-8424.

C.2. Congress

C.3. Research projects

1.-External project (Program: Consejo Superior de Investigaciones Científicas. Ref: PID2022-139908OB-I00). Evolución molecular: selección in vitro de aptámeros como nuevos agentes antivirales y desarrollo de aptasensores como herramientas biotecnológicas para la detección de virus Equip: . Duration: 06-01-2023 - 05-31-2026. Financing: 162500.00 Euros

2.-Competitive project (Program: Ministerio de Ciencia e Innovación. Development in: Ministerio de Ciencia e Innovación (MICINN). Development in: Universidad Politécnica de Madrid . Development in: Proyectos I+D+i 2020 - Retos Investigación y Generación de Conocimiento. Ref: PID2020-117263GB-I00). Lucha contra los trastornos de la información en las redes sociales online Equip: MIRALLES GONZALEZ, PABLO (Miembro del equipo de trabajo); SANTAMARIA VALENZUELA, MARIA INMACULADA (Miembro del equipo de trabajo); Rodríguez Fernández, Víctor (Miembro del equipo de trabajo); PANIZO LLEDOT, ANGEL (Miembro del equipo de trabajo); Martín García, Alejandro (Participante); RAMIREZ ATENCIA, CRISTIAN OLIVER (Participante); CAMACHO GOMEZ, CARLOS (Participante); Bello Orgaz, Gema (Participante); Camacho Fernandez, David (Investigador principal (IP)); TALAVERA MUÑOZ, EDGAR (Participante); ANGUERA DE SOJO HERNANDEZ, AUREA MARIA (Participante); DELGADO SANZ, MARIA SOLEDAD (Participante); Díaz Martínez, Miguel Ángel (Participante). Duration: 09-01-2021 - 08-31-2024. Financing: 92444.00 Euros

C.4. Contracts, technological or transfer merits