



CURRICULUM VITAE (CVA)

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

CV date 19/01/2023

Part A. PERSONAL INFORMATION

First name	Miguel Ángel		
Family name	Pérez Toledano		
Gender (*)	Male	Birth date	21/7/1965
Social Security, Passport, ID number	7001469-Q		
e-mail	toledano@unex.es	URL Web	
Open Research and Contributor ID (ORCID)(*)	0000-0002-9417-9974		

(*) *Mandatory*

A.1. Current position

Position	Titular de Universidad		
Initial date	1/08/2011		
Institution	University of Extremadura		
Department/Center	Dep. Computer and Telematic Systems Engineering / School of Technology		
Country	Spain	Teleph. number	+034 927257809
Key words	Software Architecture, IoT, Green Computing, Multi-objective optimization		

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

Period	Position/Institution/Country/Interruption cause
2002-2011	Titular de Escuela Universitaria/ University of Extremadura
1996-2002	Associate professor / University of Extremadura

A.3. Education

PhD, Licensed, Graduate	University/Country	Year
PhD in Computer Science	University of Extremadura /Spain	2008
Computer Engineer	Polytechnic University of Catalonia /Spain	1993

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

Degree in Computer Science from the Polytechnic University of Catalonia in 1993. He worked from 1989 to 1994 (5 years) as a full-time vocational training teacher at the Virgen de Montserrat Public Institute in Barcelona. In 1994 he joined the private company (ALINSA) as Director of Computer Systems, a position in which he spent 2 years until in October 1996 he obtained a position as associate professor at the University of Extremadura.

In 1999 he began the work of Doctoral Thesis, under the direction of Professor Juan Manuel Murillo Rodríguez, member of the Quercus group of Software Engineering of the UEx and Don Carlos Canal Velasco, member of the GISUM group of the University of Malaga. The Doctoral Thesis (2008) was developed in the field of Software Engineering and obtained the Special Doctorate Award of the University of Extremadura in the Technical field in 2008. He worked on validating software development using aspect-oriented programming and using aspect components in software architectures. These

works allowed to detect, on the one hand, that a treatment of the software aspects at the level of architecture would be very interesting to facilitate the evolution and maintenance of software systems and, on the other, that there were hardly any works in this field. The results of both works were a contribution in the field of Early Aspects and were published, among other sites in Information and Software Technologies and in journal Universal Computer and Science.

He began work in the area of the description of variability in software elements and self-adaptive systems with doctors Javier Cámara (Carnegie Mellon University), Howard Foster (Imperial College) and Carlos E. Cuesta (Rey Juan Carlos University) with the aim of studying solutions to ensure that different pieces of software that have been conceived separately could be coordinated. In this line of work they organized several editions of the congress Workshop on Autonomic and Self-Adaptive Systems (2008-2010), as well as the Workshop on Adaptation in serVice EcosYsTems and ArchiTectures, AVYTAT 2010 (Greece) and the Second International Workshop on Variability, Adaptation and Dynamism in software systems and seRvices, VADER 2011 (Greece). As a result of these works, two agreements were signed with the company as principal investigator for an amount of € 19,627 and € 15,000. In addition to participating as a collaborating researcher in a large number of agreements with companies such as CETA CIEMAT (€ 130,000), INDRA (€ 431,916) or Global Process (€ 22,008).

He is currently working on two lines of research. On the one hand, in the application of principles of genetic programming and evolutionary algorithms to problems of requirements engineering, software testing, efficient code generation and code parallelization. This line has obtained different publications indexed in journals in JCR such as Knowledge-Based Systems, Applied Mathematics and Computation and Engineering Applications of Artificial Intelligence -all of them Q1- and Plos One Journal in Q2. The other line of work focuses on collaborating with the Supercomputing Center (Computaex) in improving the efficiency of the software code used in IoT devices to reduce consumption and facilitate the parallelization of sequential code. This line has achieved different publications indexed in journals in JCR such as Journal of Supercomputing, Electronics Journal, IEEE Access Journal – all of them in Q2 - and Sensors Journal in Q1.

He is reviewer and member of the program committee of different national and international congresses and journals such as: Journal of Intelligent Manufacturing, Computational Intelligence or Journal Ingeniare.

From 10/11/2009 to 28/01/2018 he held the position of Head of the Department of Computer and Telematic Systems Engineering of the University of Extremadura (UEX). He held the position of Coordinator of the Doctoral Program in Computer Technologies of the University of Extremadura from 2019 to 2022.

He has been granted two six-year terms of research (until 2018) and a six-year transfer period. He has 28 publications in journals and book chapters and 43 articles in national and international conferences. According to ResearchGate, he has an h-index of 10.

Part C. RELEVANT MERITS (sorted by typology)

C.1. Publications (see instructions)

SimulateloT-FIWARE: Domain Specific Language to Design, Code Generation and Execute IoT Simulation Environments on FIWARE. José Antonio Barriga; Pedro José Clemente Martín; Juan María Hernández Núñez; Miguel Ángel Pérez Toledano. IEEE Access. 10, pp. 7800 7822. IEEE Access, 13/01/2022. JCR Q2. Impact factor 3,367
Efficient Code Development for Improving Execution Performance in High-Performance Computing Centers. Javier Corral García; Felipe Lemus Prieto; Miguel Ángel Pérez Toledano. Journal of Supercomputing. 30/07/2020. DOI: https://doi.org.ezproxy.unex.es/10.1007/s11227-020-03382-z . JCR Q2. Impact factor: 2.469
Analysis of Energy Consumption and Optimization Techniques for Writing Energy-Efficient Code. Javier Corral García; Felipe Lemus Prieto; José Luis González Sánchez; Miguel Ángel Pérez Toledano. Journal Electronics. 8, pp. 1192 - 1214. Doi:10.3390/electronics8101192. 19/10/2019. JCR Q2. Impact factor: 2.412.
Evaluation of Strategies for the Development of Efficient Code for Raspberry Pi Devices. Javier Corral-García, José-Luis González-Sánchez and Miguel-Ángel Pérez-Toledano. Sensors Journal. Vol. 18 (11). Doi: https://doi.org/10.3390/s18114066 . JCR Q1. Impact Factor 3,031

<p>Players' selection for basketball teams, through Performance Index Rating, using multiobjective evolutionary algorithms. Miguel Ángel Pérez-Toledano, Francisco J. Rodríguez, Javier García-Rubio, Sergio Jose' Ibañez. Plos One Journal. Vol. 14 (9). Doi:https://doi.org/10.1371/journal.pone.0221258. JCR Q2. Impact Factor 2.776</p>
<p>Teaching learning based optimization with Pareto tournament for the multiobjective software requirements selection. José M. Chaves-González, Miguel A. Perez-Toledano, Amparo Navasa Martínez. Journal Engineering Applications of Artificial Intelligence. Vol. 43. pp. 89-101. DOI: 10.1016/j.engappai.2015.04.002. JCR Q1, Impact Factor 2,207</p>
<p>Software requirement optimization using a multiobjective swarm intelligence evolutionary algorithm. José M. Chaves-González, Miguel A. Pérez-Toledano, Amparo Navasa Martínez. Journal of Knowledge-Based Systems. Vol. 83, pp. 105–115. July 2015. DOI: 10.1016/j.knosys.2015.03.012. JCR Q1. Impact Factor 2,947</p>
<p>Differential evolution with Pareto tournament for the multi-objective next release problem. José M. Chaves-González, Miguel A. Perez-Toledano. Journal of Applied Mathematics and Computation. Vol. 252, pp. 1–13, February 2015. DOI: 10.1016/j.amc.2014.11.093. JCR Q1. Impact Factor 1,551</p>
<p>Providing RIA user interfaces with accessibility properties. M Linaje, A Lozano-Tello, M. A. Perez-Toledano, et al. Journal of Symbolic Computation. Vol. 46, No. 2, pp. 207–217, February 2011. JCR Q3. Impact factor 0,884</p>
<p>An ADL Dealing with Aspects at Software Architecture Stage. Amparo Navasa, Miguel A. Perez-Toledano, Juan M. Murillo. Journal of Information and Software Technology. Vol. 51, No. 2, pp. 306–324, 2008. DOI: 10.1016/j.infsof.2008.03.009. JCR Q1, Impact Factor 1,821</p>
<p>A Safe Dynamic Adaptation Framework for Aspect-Oriented Software Development. Miguel A. Pérez, Amparo Navasa, Juan M. Murillo, Carlos Canal. Journal of Universal Computer Science. Vol. 14, No. 13, pp. 2212–2238, 2008. DOI: 10.3217/jucs-014-13-2212. JCR Q3, Impact Factor 0,488</p>
<p>Aspect Modelling at Architecture Design. Amparo Navasa, Miguel A. Pérez, Juan M. Murillo. EWSA 2005. LNCS Vol. 3527, pp. 41-58. ISSN: 0302-9743. DOI: 10.1007/11494713_4. JCR Q3, Impact Factor 0.402. CORE A</p>

C.2. Congress

VIII Jornadas de Paralelismo; IV Jornada de Ingeniería del Software y Bases de Datos (JISBD); Jornadas de Enseñanza Universitaria de la Informática (JENUi, 2002) ; Jornadas de Gestión de Grandes Proyectos Software (2002, 2003, 2004), 12th Workshop for PhD Students in Object-Oriented Systems (2002), 13th Workshop for PhD Students in Object-Oriented Systems (2003), Workshop on Autonomic and SELF-Adaptive Systems (Waself 2010, 2009, 2008) , International Workshop on Adaptation in serVice EcosYsTems and ArchiTectures (AVYTAT 2010), Workshop on Variability, Adaptation and Dynamism in Software Systems and Services (VADER) 2011 , Conferencia Agile-Spain (CAS) 2013, International Conference on Web Engineering (ICWE) 2018.

C.3. Latest research projects

Título / Ref.	MODEL2INDUSTRY4.0: Diseño, generación de código y simulación de artefactos para proyectos Industria 4.0 e IOT				
Funding entity	Consej. Economía, Ciencia y Agenda Digital	Type	Fund. No orientada		
IP / Affiliation	Pedro J. Clemente Martín/ Univ. Extremadura	Start	17/06/2021	End	17/06/2024
Participation	Investigador	Amount	149.997,10 €		
State	Active	Participants	6		

Título / Ref.	Contexto Situacional: Una arquitectura de Gestión de la Información personal para una mejor integración persona tecnología				
Funding entity	Anecia Estatal Investigación	Type	Fund. No orientada		
IP / Affiliation	José J. Berroclá Olmeda/ Univ. Extremadura	Start	1/1/2019	End	31/07/2022
Participation	Investigador	Amount	107.932 €		
State	Finished	Participants	8		

Título / Ref.	Instituto Internacional de Investigación e Innovación del envejecimiento/0499 4IE PLUS 4 E				
Funding entity	POCTEP (Fondos Europeos)	Type	Fund. orientada		
IP / Affiliation	José Manuel García Alonso/Univ. EXTremadura	Start	31/12/2019	End	31/07/2022
Participation	Investigador	Amount	1.284.214,90 €		
State	Finished	Participants	28		

Título / Ref.	People as a Service: Habilitando los dispositivos móviles como proveedores de servicio en sistemas Ciber-Físicos / TIN2015 69957-R				
Funding entity	Programa Nacional Retos 2015	Type	Fund. no orientada		
IP / Affiliation	Juan M. Murillo/ Fernando Sánchez Figueroa (UEx)	Start	01/01/2016	End	31/12/2018
Participation	Investigador	Amount	133.100,00 €		
State	Finished	Participants	8		

Título / Ref.	Instituto Internacional de Investigación e Innovación del Envejecimiento. /0445 4IE 4P				
Funding entity	Comunidad Europea	Type	Europa POCTEP		
IP / Affiliation	Juan M. Murillo/ (UEx)	Start	01/10/2015	End	31/12/2019
Participation	Collaborator	Amount	956.511,00 €		
State	Finished	Participants	27		

Título / Ref.	PATTERN: Product Line and Transformation Techniques in the multi-layer architectures design / TIN2012-34945				
Funding entity	MINECO	Type	Fund. no orientada		
IP / Affiliation	Juan M. Murillo/ UEx	Start	01/01/2013	End	31/12/2014
Participation	Collaborator	Amount	15.210,00 €		
State	Finished	Participants	8		

Título / Ref.	Actualización del desarrollo de aplicaciones multicapa basadas en frameworks: Integración de técnicas DSDM y LP / TIN2011-24278				
Funding entity	MICINN	Type	Fund. no orientada		
IP / Affiliation	Juan M. Murillo/ UEx	Start	01/01/2012	End	31/12/2012
Participation	Collaborator	Amount	5.445,00 €		
State	Finished	Participants	8		

Título / Ref.	Desarrollo dirigido por modelos de procesos de negocio en factorías software/ TIN2008-02985				
Funding entity	MICINN	Type	Fund. no orientada		
IP / Affiliation	Juan Hernández / UEx	Start	01/12/2008	End	30/11/2011
Participation	Collaborator	Amount	185.000,00 €		
State	Finished	Participants	12		

C.4. Latest contracts, technological or transfer merits

Título	Adaptación de aplicaciones y códigos científicos, y optimización de sistemas, para mejor aprovechamiento y rendimiento de las infraestructuras de supercomputación, GRID y CLOUD, del CETA-CIEMAT				
Funding entity	CIEMAT	Participation	Investigador		
Amount	60.000,00 €	Start	19/02/2014	End	19/02/2015

Título	Aplicación del Framework TITAN para la evolución de sistemas software				
Funding entity	URVICA S.A.U	Participation	IP		
Amount	19.627,63 €	Start	23/05/2011	End	23/05/2012

Título	GEPRODIST: Gestión de proyectos y desarrollo de software de forma distribuida – Proyecto PID de CDTI				
Funding entity	CDTI - INDRA	Participation	Collaborator		

Amount	328.492,00 €	Start	01/01/2011	End	31/12/2012
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Título	Estudio sobre la calidad y evolución de los sistemas de información en la empresa				
Funding entity	URVICA S.A.U	Participation		IP	
Amount	15.000 €	Start	21/10/2009	End	21/10/2010

Título	Desarrollo, promoción y despliegue de tecnologías grid y creación de una cátedra específica sobre esta tecnología				
Funding entity	CIEMAT	Participation		Investigador	
Amount	187.200,00 €	Start	01/04/2008	End	31/12/2011