MINISTERIO
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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	18/02/2024

First name	Javier		
Family name	Carmona Murillo		
e-mail	jcarmur@unex.es	URL Web	
Open Researcher and Contributor ID (ORCID) (*)		0000-0002-3910-876X	
SCOPUS Author ID		25928966100	
WoS Researcher ID		C-8971-2014	

(*) Mandatory

A.1. Current position

Position	Associate Professor (Profesor Titular de Universidad)		
Initial date	22/02/2023		
Institution	Universidad de Extremadura		
Department/Center	Computer Systems and Telematics Engineering	Centro Universitario de Mérida	
Country	Spain	Teleph. number	0034 924673061
Key words	Wireless & Mobile Networks; Network Management; SDN; 5G/6G		

A.2. Previous positions (research activity interruptions, see call)

Period	Position/Institution/Country/Interruption cause
01/03/2016 - 21/02/2023	Associate Professor at University of Extremadura (Profesor Contratado Doctor)
31/07/2012 - 29/02/2016	Assistant Professor at University of Extremadura (Profesor Ayudante)
14/10/2009 - 30/07/2012	Adjunct professor at University of Extremadura
01/11/2007 - 13/10/2009	Contract under the Predoctoral Researcher Training Programme (FPI)
01/04/2004 - 31/10/2007	Research contract

A.3. Education

PhD, Licensed, Graduate	University/Country	Year
PhD	University of Extremadura, Spain	2015
Computer Science Engineer	University of Extremadura, Spain	2005

Part B. CV SUMMARY *(max. 5000 characters, including spaces)* to complete this section, please read carefully: **"Instructions to fill CVA"**

Javier Carmona-Murillo received his PhD (obtaining the Extraordinary Doctorate Award) from the Department of Computer Systems and Telematics Engineering at the University of Extremadura (UEx) in 2015. He received his degree in Technical Computer Science and Degree in Computer Science Engineering (with first class honors) also from UEx. From 2007 to 2009, he worked as a Research Fellow in the GÍTACA research group with a predoctoral contract, at University of Extremadura. Since 2010, he has been with the department of Computer Science and Telematics Engineering at the same university (in 2023, he promoted to Associate Professor - "Profesor Titular de Universidad"), combining teaching and research tasks. His research focuses on algorithmic optimization for 5G/6G networks, AI-driven network

management for beyond 5G networks, software-based network management, quality of service (QoS) in next-generation networks and cross-layer network optimization.

From the research point of view, the following global figures for research and scientific production should be highlighted:

- Two six-year term research periods (sexenios), 2010-2015 and 2016-2021. The scientific production is: 24 JCRs journal articles and more than 40 national and international conferences. His bibliometric information data and h-index in WoS, Scopus and Google Scholar is summarized next:

	WoS	Scopus	Google Scholar
Number of citations	134	206	344
Average citation rate in the last 5 years	23.2	35.6	56.9
H-index	4	6	7

Additionally, he has actively leaded different R&D national and regional projects (TED2021-131699B-I00, RTI2018-102002-A-I00, IB18003, PEJ2018-003648-A), and has participated as a researcher in more than 10. He has also worked as a visiting researcher at Centre for Telecommunications Research (CTR) at King's College London in 2014 and 2018 and as Visiting Assistant Professor at Department of Engineering, Aarhus University, Denmark, in 2019, conducting research tasks in the area of Mobility Management in 5G communication systems.

From a knowledge transfer perspective, he has also developed R&D transfer contracts with companies in the sector of software and telecommunication engineering, including a contract with Gamma Solutions for the deployment and management of the "5G Pilot-Extremadura" network, within the Call for 5G Pilots, financed by the company Red.es framed in the National 5G Strategy and the National Plan for Smart Territories, both promoted by the Ministry of Economy and Business (Ministerio de Economía y Empresa).

He has successfully supervised 1 PhD thesis in the field of 5G network management and is currently under the supervision of two additional thesis in the field of channel propagation in B5G networks and network optimization for energy efficiency of next wireless communication networks.

He has also participated in different evaluation committees evaluating research projects from different countries in Europe, including the Spanish research agency (Agencia Estatal de Investigación).

Currently he is the vice-dean of mobility and international relations of the University Center of Mérida at University of Extremadura, Spain. Start date: 16/09/2019 to the present.

Finally, he has been recognized with different academic awards:
1. Awarded by the Universidad de Extremadura as the Best Academic Record in Computer Science Engineering (2005)
2. PhD extraordinary award ("Premio Extraordinario de Doctorado") given by the University of Extremadura. Academic year: 2015
3. Teaching Excellency award, given by the Universidad de Extremadura, according to the DOCENTIA-UEx programme. 2019.

Part C. RELEVANT MERITS
They may include publications, data, software, contracts or industrial products, clinical developments, conference, publications, etc. If these contributions have DOI, please include it

C.1. Publications
Must be include the corresponding author, the position occupied by the applicant researcher)

1. M. I. Chidean, L. I. Jiménez Gil, **J. Carmona-Murillo** and D.Cortés-Polo, "*Information theory based clustering of cellular network usage data for the identification of representative urban areas*", in Digital Communication and Networks, 2023. https://doi.org/10.1016/j.dcan.2023.07.002. JCR IF: 7.9 (Q1)

2. J. Galeano-Brajones, F. Luna-Valero, **J. Carmona-Murillo**, P. H. Zapata Cano, J. F. Valenzuela-Valdés, "*Designing problem-specific operators for solving the Cell Switch-Off problem in ultra-dense 5G networks with hybrid MOEAs*", in Swarm and Evolutionary Computation, vol. 78, 2023. https://doi.org/10.1016/j.swevo.2023.101290. JCR IF: 10.0 (Q1)

3. J. Galeano-Brajones, M. I. Chidean, F. Luna, **J. Carmona-Murillo**, "*A Novel Approach for Flow Analysis in Software-Based Networks using L-moments Theory*", in Computer Communications, vol. 201, pp. 116-122, 2023. https://doi.org/10.1016/j.comcom.2023.01.022. JCR IF: 6.0 (Q1)

4. M. Domínguez-Dorado, D. Cortés-Polo, **J. Carmona-Murillo**, F. J. Rodríguez-Pérez, J. Galeano-Brajones, "*Fast, Lightweight, and Efficient Cybersecurity Optimization for Tactical–Operational Management*", in Applied Sciences, 13 (10), 2023. https://doi.org/10.3390/app13106327. JCR IF: 2.7 (Q2)

5. M. Domínguez-Dorado, **J. Carmona-Murillo**, D. Cortés-Polo and F. J. Rodríguez-Pérez, "*CyberTOMP: A Novel Systematic Framework to Manage Asset-Focused Cybersecurity From Tactical and Operational Levels,*" in IEEE Access, vol. 10, pp. 122454-122485, 2022. https://doi.org/10.1109/ACCESS.2022.3223440. JCR IF: 3.9 (Q2)

6. J. J. Rico-Palomo, J. Galeano-Brajones, D. Cortes-Polo, J. F. Valenzuela-Valdes and **J. Carmona-Murillo**, "*Chained Orchestrator Algorithm for RAN-Slicing Resource Management: A Contribution to Ultra-Reliable 6G Communications,*" in IEEE Access, vol. 10, pp. 113662-113677, 2022. https://doi.org/10.1109/ACCESS.2022.3218061. JCR IF: 3.9 (Q2)

7. D. Cortés-Polo, L. I. J. Gil, J. -L. González-Sánchez and **J. Carmona-Murillo**, "*A Quantitative and Comparative Evaluation of Key Points Selection Algorithms for Mobile Network Data Sets Analysis,*" in IEEE Access, vol. 9, pp. 92030-92042, 2021. https://doi.org/10.1109/ACCESS.2021.3092596. JCR IF: 3.4 (Q2)

8. A. Ramírez-Arroyo, P. H. Zapata-Cano, Á. Palomares-Caballero, **J. Carmona-Murillo**, F. Luna-Valero and J. F. Valenzuela-Valdés, "*Multilayer Network Optimization for 5G & 6G*", in IEEE Access, vol. 8, pp. 204295-204308, 2020. https://doi.org/10.1109/ACCESS.2020.3036744. JCR IF: 3.3 (Q2)

9. J. Galeano-Brajones, **J. Carmona-Murillo**, J. F. Valenzuela-Valdés, F. Luna-Valero, "*Detection and Mitigation of DoS and DDoS Attacks in IoT-Based Stateful SDN: An Experimental Approach*", Sensors, Vol. 20, No. 3, 1-18. 2020. https://doi.org/10.3390/s20030816. JCR IF: 3.5 (Q1)

10. **J. Carmona-Murillo**, V. Friderikos, J.L. González-Sánchez, "*A hybrid DMM solution and trade-off analysis for future wireless networks*", Computer Networks, Vol. 133, pp. 17-32, 2018. https://doi.org/10.1016/j.comnet.2018.01.030. JCR IF: 3.0 (Q1)

C.3. Research projects

(must indicate their personal contribution, and lines of research for which they have been responsible

1. Project reference: TED2021-131699B-I00
Title: Algorithmic solutions for sustainable next generation wireless networks
Principal Investigator: **Javier Carmona Murillo** and Francisco Luna Valero
Funded by: Ministerio de Ciencia e Innovación
Duration: 01/12/2022 – 30/11/2024
Funding: 507.495 €

Line of research of my responsibility: Algorithmic optimization for 5G/6G networks

2. Project reference: IB18003
   Title: SmartNet5G: Desarrollo de nuevos mecanismos de gestión en redes programables de próxima generación
   Principal Investigator: **Javier Carmona Murillo**
   Funded by: Junta de Extremadura. Consejería de Economía, Ciencia y Agenda Digital
   Duration: 09/02/2019 – 26/07/2022
   Funding: 139.991,50 €
   Line of research of my responsibility: AI-driven network management for beyond 5G networks

3. Project reference: RTI2018-102002-A-I00
   Title: Cross-Layer optimization in 5G networks
   Principal Investigator: **Javier Carmona Murillo** and Antonio Mora García
   Funded by: Ministerio de Ciencia e Innovación
   Duration: 1/1/2019 – 30/06/2021
   Funding: 54.692 €
   Line of research of my responsibility: Algorithmic optimization for 5G/6G networks

4. Project reference: PEJ2018-003648-A
   Title: Gestión inteligente del tráfico en redes programables de próxima generación
   Principal Investigator: **Javier Carmona Murillo**
   Funded by: Ministerio de Economía, Industria y Competitividad
   Duration: 12/07/2019 – 11/07/2021
   Funding: 42.659,7 €
   Line of research of my responsibility: AI-driven network management for beyond 5G networks

C.4. Contracts, technological or transfer merits

1. Title: Cátedra INCIBE-UEx-CUMe
   Company/Entity: INCIBE (Instituto Nacional de Ciberseguridad)
   Principal Investigator: Pedro Pardo Fernández
   Role: **Researcher**
   Duration: 31/12/2023 – 31/12/3025
   Contract Budget: 896000 €

2. Title: Piloto 5G – Extremadura
   Company/Entity: Gamma Solutions
   Principal Investigator: **Javier Carmona Murillo**
   Duration: 30/07/2020 – 31/01/2023
   Contract Budget: 72.600 €