CV date	07/12/2023

Part A. PERSONAL INFORMATION

First name	Juan Manuel		
Family name	Murillo Rodríguez		
Gender (*)	Male	Birth date (dd/mm/yyyy)	**********
Social Security, Passport, ID number	*********		
e-mail	juanmamu@unex.es	URL Web https://dblp.org/pid/m/JuanManuelMurillo.html	
Open Researcher and Contributor ID (ORCID) (*)	0000-0003-4961-4030		

(*) Mandatory

A.1. Current position

Position	Full Professor		
Initial date	18/07/2018		
Institution	University of Extremadura		
Department/Center	Computer and Telematic Systems Engineering	Polythecnic Egineering School	
Country	Spain	Teleph. number	*********
Key words	Software Engineering, Service Oriented Computing		

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

Period	Position/Institution/Country/Interruption cause
xxxx-xxxx	
yyyy-yyyy	

A.3. Education

PhD, Licensed, Graduate	University/Country	Year
Computer Science Degree	University of Extremadura / Spain	1988
Computer Science Master D.	Polythecnic University of Catalonia / Spain	1993
PhD in Computer Science	University of Extremadura	2001

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

My academic career began in 1994 at the University of Extremadura (UEx) where I am currently a Full Professor in the field of Software Engineering. Throughout these years I participated in more than 30 competitive research projects (funds exceeding 3.5M euros, leading 7 of them for an amount of 1.65M). I have also developed extensive collaboration with private companies in more than 20 contracts (2.5M euros, leading 13 of them for an amount of 1.7M). This allowed me to be worthy of four six-year research periods, one more for transfer activities and the Award of Excellence for the Transfer of Research Results from the UEx in 2020. All this activity is developed within the Quercus Software Engineering Group that I contributed to found under the direction of Prof. Juan Hernández Núñez. Currently, I lead one of the group's laboratories, the SPILab (Social and Pervasive Innovation Lab) which integrates 18 members of the Quercus group.

During the firsts years my research focused on Advanced Separation of Concerns (Aspects) and their application to self-adaptive systems. Since 2012, the SPILab team has specialized in building distributed, service-oriented architectures for mobile applications. Our main contributions have been the Internet of People (IoP) concept and the People as a Service (PeaaS) architecture. Both promote considering mobile devices as an infrastructure integrated in the cloud in which services can be deployed. The ultimate goal is for mobile devices to offer

services on their owners, including those of connecting to the IoT minimizing the owner intervention. This concept was one of the precursors of the need for what we know today as Fog and Mist Computing. Thus, the latest work that we develop in this area deals with the optimization of the deployment of mobile applications considering the infrastructure from the cloud to the edge, fog and mist. In all this research, the application areas were that of health and aging being our main contribution the MIAPE system. Conceived for assessing the level of aging in the elderly it is running in more than 50 nursing homes in the region of Alentejo (Portugal). Finally, the practical problems faced in the field of health have led us, since 2019, to open a new research direction related to the development of software for quantum systems and its integration with classical service-oriented ones.

Regarding Knowledge transfer, the most important contribution is the foundation with José Manuel García Alonso and José Javier Berrocal Olmeda of the startup GLOIN in 2010 which still keep running and growing. In 2012, the company won the Launchapad Denmark, a competition where more than 200 companies from all over the world participated. GLOIN was introduced with the nimBees tool based on PeaaS. Motivated by the advances in our application areas we recently founded a new startup (HAT - Health and Ageing Tech.)

All of the above activity has been combined with several management activities. Thus, in the period 2007-2010 I was Vice-rector of Information Technology and Communications at the University of Extremadura. This position provided me with experience in the management of large computing and communications infrastructures. During the period 2019-2022 I founded and headed the European Projects Office of the University of Extremadura, which has provided me with very good relations and knowledge of the SECTI (Sistema Extremeño de Ciencia, Tecnología e Innovación). Finally, from June 2022 to November 2023, I was the Managing Director of the COMPUTAEX foundation for which I have proposed a project for the improvement and growth of research results and knowledge transfer and integration with the University of Extremadura. This foundation manages the regional supercomputing center and is also member of the RES ICTS network (Spanich Supercomputing Network).

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

C.1. Publications *(see instructions)*

1 **Scientific paper**. Jose Garcia-Alonso; Javier Rojo; David Valencia; Enrique Moguel; Javier Berrocal; Juan Manuel Murillo. 2022. Quantum Software as a Service through a QuantumAPI Gateway IEEE Internet Computing. IEEE. 2022, pp.1-9. DOI https://doi.org/10.1109/MIC.2021.3132688

2 **Scientific paper**. Juan Luis Herrera, Jaime Galán-Jiménez, Luca Foschini, Paolo Bellavista, Javier Berrocal, Juan Manuel Murillo. 2022. QoS-Aware Fog Node Placement for Intensive IoT Applications in SDN-Fog Scenarios. IEEE Internet Things J. 9(15): 13725-13739 (2022). DOI https://doi.org/10.1109/JIOT.2022.3143948

3 **Scientific paper**. **Scientific paper**. Javier Rojo, José García-Alonso, Javier Berrocal, Juan Hernández, Juan Manuel Murillo, Carlos Canal. 2022. SOWCompact: A federated process mining method for social workflows. Information Science 595: 18-37 (2022). DOI https://doi.org/10.1016/j.ins.2022.02.035

4 **Scientific paper**. Juan Luis Herrera; Jaime Galan-Jimenez; Javier Berrocal; Juan Manuel Murillo. 2021. Optimizing the Response Time in SDN-Fog Environments for Time-Strict IoT Applications. IEEE Internet of Things Journal. IEEE. 8 (23) pp 17172 – 17185. DOI https://doi.org/10.1109/JIOT.2021.3077992

5 **Scientific paper**. Sergio Laso; Javier Berrocal; Jose Garcia-Alonso; Carlos Canal; Juan Manuel Murillo. 2021. Human microservices: A framework for turning humans into service providers Software: Practice and Experience. Wiley. 2021, pp.1-26. DOI https://doi.org/10.1002/spe.2976

6 **Scientific paper**. Niko Mäkitalo; Daniel Flores-Martin; Javier Berrocal; Jose Garcia-Alonso; Petri Ihantola; Aleksandr Ometov; Juan Manuel Murillo; Tommi Mikkonen. 2020. The Internet of Bodies Needs a Human Data Model IEEE Internet Computing. IEEE. 24-5, pp.28-37. DOI https://doi.org/10.1109/MIC.2020.3019920

7 **Scientific paper**. Javier Berrocal; Jose Garcia-Alonso; Cristina Vicente-Chicote; Juan Hernandez; Tommi Mikkonen; Carlos Canal; Juan M. Murillo. 2017. Early analysis of resource consumption patterns in mobile applications. Pervasive and Mobile Computing. Elsevier. ISSN 1574-1192. DOI https://doi.org/10.1016/j.pmcj.2016.06.011

8 **Scientific paper**. Javier Berrocal Olmeda; Jose Garcia-Alonso; Juan M. Murillo; Carlos Canal. 2016. Rich contextual information for monitoring the elderly in an early stage of cognitive impairment Pervasive and Mobile Computing. Elsevier. pp.1-20. DOI https://doi.org/10.1016/j.pmcj.2016.05.001

9 **Scientific paper**. Javier Miranda; Niko Makkitalo; José García-Alonso; Javier Berrocal; Tommi Mikkonen; Carlos Canal; Juan M. Murillo. 2015. From the Internet of Things to the Internet of People IEEE Internet Computing. IEEE. 19(2), pp.40-47. DOI https://doi.org/10.1109/MIC.2015.24

10 **Scientific paper**. Joaquin Guillen; Javier Miranda; Javier Berrocal; Jose Garcia-Alonso; Juan Manuel Murillo; Carlos Canal. 2014. People as a Service: A Mobile-centric Model for Providing Collective Sociological Profiles IEEE Software. IEEE. 31, pp.48-53. DOI https://doi.org/10.1109/MS.2013.140

11 **Scientific paper**. Joaquín Guillen; Javier Miranda Carpintero; Juan Manuel Murillo Rodríguez; Carlos Canal. 2013. A service oriented framework for developing cross cloud migratable software. Journal of Systems and Software. 86, pp. 2294-2308. Elsevier. DOI https://doi.org/10.1016/j.jss.2012.12.033

C.2. Conferences

1 Sanchez-Rivero, J., Talaván, D., Garcia-Alonso, J., Ruiz-Cortés, A., Murillo, J.M. (2023). Operating with Quantum Integers: An Efficient 'Multiples of' Oracle. In: Aiello, M., Barzen, J., Dustdar, S., Leymann, F. (eds) Service-Oriented Computing. SummerSOC 2023. Communications in Computer and Information Science, vol 1847. Springer, Cham. https://doi.org/10.1007/978-3-031-45728-9_7

2 J. Sanchez-Rivero, D. Talavan, J. Garcia-Alonso, A. Ruiz-Cortes and J. Murillo, "Automatic Generation of an Efficient Less-Than Oracle for Quantum Amplitude Amplification," in 2023 IEEE/ACM 4th International Workshop on Quantum Software Engineering (Q-SE), Melbourne, Australia, 2023 pp. 26-33. https://doi.org/10.1109/Q-SE59154.2023.00011

3 J. Romero-Alvarez, J. Alvarado-Valiente, E. Moguel, J. Garcia-Alonso and J. M. Murillo, "A Workflow for the Continuous Deployment of Quantum Services," 2023 IEEE International Conference on Software Services Engineering (SSE), Chicago, IL, USA, 2023, pp. 1-8, https://doi.org/10.1109/SSE60056.2023.00015

4 David Valencia; Jose Garcia-Alonso; Javier Rojo; Enrique Moguel; Javier Berrocal; Juan Manuel Murillo. Hybrid Classical-Quantum Software Services Systems: Exploration of the Rough Edges. 14th International Conference on Quality of Information and Communications Technology (QUATIC 2021). 2021.

5 Juan Luis Herrera; Jaime Galan-Jimenez; Paolo Bellavista; Luca Foschini; Jose Garcia-Alonso; Juan M Murillo; Javier Berrocal. Optimal Deployment of Fog Nodes, Microservices and SDN Controllers in Time-Strict IoT Scenarios. IEEE GLOBECOM 2021. 2021.

6 Javier Rojo; Enrique Moguel; David Valencia; Javier Berrocal; Jose Garcia-Alonso; Juan M. Murillo. Trials and Tribulations of Developing Hybrid Quantum-Classical Microservices Systems. 2nd Quantum Software Engineering and Technology Workshop. IEEE Quantum Week 2021. 2021.

7 Juan Luis Herrera, Hsiao-Yuan Chen, Javier Berrocal, Juan Manuel Murillo, Christine Julien. Privacy-Aware and Context-Sensitive Access Control for Opportunistic Data Sharing. CCGRID 2021

8 Javier Rojo, Juan Hernández, Juan Manuel Murillo, José García-Alonso. Blockchains' federation for integrating distributed health data using a patient-centered approach. SEH@ICSE 2021:

9 Daniel Flores-Martín , Javier Berrocal , José García-Alonso , Juan Manuel Murillo. SMOTE: A Tool to Proactively Manage Situations in WoT Environments. ICWE 2021

10 Juan Manuel Murillo; Enrique Moguel; Javier Berrocal; Jose Garcia-Alonso. A Roadmap for Quantum Software Engineering: applying the lessons learned from the classics. 1st International Workshop on Software Engineering & Technology (Q-SET'20). IEEE Quantum Week 2020. 2020.

11 Mario Piattini, Guido Peterssen, Ricardo Pérez-Castillo, Jose Luis Hevia, Manuel A. Serrano, Guillermo Hernández, Ignacio García Rodríguez de Guzmán, Claudio Andrés Paradela, Macario Polo, Ezequiel Murina, Luis Jiménez, Juan Carlos Marqueño, Ramsés Gallego, Jordi Tura, Frank Phillipson, Juan Manuel Murillo, Alfonso Niño, Moisés Rodríguez: The Talavera Manifesto for Quantum Software Engineering and Programming. QANSWER 2020: 1-5

12 Sergio Laso; Marino Linaje; Jose Garcia-Alonso; Juan Manuel Murillo; Javier Berrocal. Deployment of APIs on Android Mobile Devices and Microcontrollers. PerCom2020. 2020.

13 Juan Luis Herrera, Paolo Bellavista, Luca Foschini, Jaime Galán-Jiménez, Juan Manuel Murillo, Javier Berrocal. Meeting Stringent QoS Requirements in IIoT-based Scenarios. GLOBECOM 2020

14 Javier Rojo , Juan Hernández , Juan Manuel Murillo. A Personal Health Trajectory API: Addressing Problems in Health Institution-Oriented Systems. ICWE 2020

15 Jose Garcia-Alonso; Javier Berrocal; Juan Manuel Murillo. Architectures Server-Centric vs Mobile-Centric for Developing WoT Applications. International Conference on Web Engineering. 2019.

16 Daniel Flores-Martin; Javier Berrocal; Jose Garcia-Alonso; Juan Manuel Murillo. Towards a Runtime Devices Adaptation in a Multi-Device Environment Based on People's Needs. PerCom Workshops. 2019.

17 Javier Berrocal; Jose Garcia-Alonso; Carlos Canal; Juan Manuel Murillo. Towards Multi-Device Context Aware Systems for Elders Well-being. UbiComp. 2018.

C.3. Research projects

1 **Project**. RURALSERV: UNA ARQUITECTURA BASADA EN UAVS PARA EL DESPLIEGUE DE SERVICIOS DIGITALES EN ZONAS RURALES SIN CONECTIVIDAD (TED2021-130913B-I00). Ministerio de Ciencia e Innovación. (Co IP). 2022-2023. 292.790€.

2 **Project**. QSERV-UEX - DESARROLLO Y OPERACION DE MICROSERVICIOS CUANTICOS (PID2021-124054OB-C31). Ministerio de Ciencia e Innovación. Juan Manuel Murillo Rodriguez. (Co Investigador Principal) 2022-2025. 136.004 €.

3 **Project**. Contexto Situacional: una arquitectura de gestión de la información personal para una mejor integración persona-tecnología (RTI2018-094591-B-I00). Agencia Estatal de Investigación. (Co Investigador Principal). 01/01/2019-31/12/2021. 107.932 €.

4 **Project**. Instituto Internacional de Investigación e Innovación del Envejecimiento - 4IE+. Comisión Europea. IP Jose Garcia-Alonso. (Investigador). 01/10/2017-31/12/2021. 1.284.214,9 €.

5 **Project**. Instituto Internacional de Investigación e Innovación del Envejecimiento - 4IE. Comisión Europea. (Investigador Principal). 01/10/2015-31/12/2019. 956.511,3 €.

C.4. Contracts, technological or transfer merits

1 **Contract**. QSalud – Ingeniería del Software para Computación Cuántica aplicada al envejecimiento y la farmacogenética Global Product and Process Improvement S.L.. Murillo Rodriguez. 01/01/2021-01/01/2025. 240.000 €.