

Part A. PERSONAL DATA

DATE	05.5.2021
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Name, Surname	Sergio Bernabé García		
DNI/NIE/Passport	53573380D/	Age	34
Identification number of the researcher	Researcher ID	0000-0001-9916-0634	
	Orcid Code	H-5350-2015	

A.1. Professional Situation (actual)

Organism	Universidad Complutense de Madrid		
Department./Center	Arquitectura de Computadores y Automática		
Address	C/ Profesor José García Santesmases, 9		
Phone number	913947541	correo electrónico	sebernab@ucm.es
Professional Category (last)	Interim Associate Professor (Profesor Contratado Doctor Interino)	Fecha inicio	02.2021
UNESCO codes	330406		
Key words	Computer Vision, Signal Processing, FPGAs, GPUs, Embedded Systems.		

A.2. Academic Background (degree, institution, date)

Degree	University	Year
Technical Engineering in Computer Systems.	University of Extremadura, Spain	2009
Computer Engineering	University of Extremadura, Spain	2010
Master's degree in Grid Computing and Parallelism	University of Extremadura, Spain	2010
Master's degree in Engineering and Architecture Research	University of Extremadura, Spain	2012
Master's degree in Occupational Risk Prevention	University of San Pablo - CEU, Spain	2013
Ph.D. degree in Computer Engineering with International Mention	University of Extremadura (Spain) and University of Iceland.	2014

A.3. General Indicators of scientific production

Citations: 651

i10-index: 18

h-index: 13

Source for citations, i10-index and h-index: Google Scholar

Part B. SHORT BIO

Sergio Bernabé was born in Badajoz, Spain, in 1986. He graduated in Technical Engineering in Computer Systems and Computer Engineering from the University of Extremadura in 2009 and 2010, respectively. In the same year, he obtained the M.Sc. degree in Grid Computer Studies and Parallelism, and in 2012 the M.Sc. degree in Engineering and Architecture Research (specialized in Information and Communications Technologies) from the University of Extremadura. Finally, he received his jointly Ph.D. degree in Computer Science with "Ph.D. International Mention" between the University of Iceland and University of Extremadura in 2014.

He has been a Visiting Researcher at the Institute for Applied Microelectronics, University of Las Palmas de Gran Canaria, Las Palmas, Spain, and also at the Computer Vision Laboratory, Catholic University of Rio de Janeiro, Rio de Janeiro, Brazil. He was a Postdoctoral Researcher (funded by FCT) with the Instituto Superior Tecnico, Technical University of Lisbon, Lisbon, Portugal, and a Postdoctoral Researcher (funded by the Spanish Ministry of

Economy and Competitiveness) until 2016 with the Complutense University of Madrid, Madrid, Spain. His research interests include the development and efficient processing of parallel techniques for different types of high-performance computing architectures.

Nowadays, he is an Interim Associate Professor of Computer Science at Universidad Complutense, Madrid from February of 2021. He has authored or co-authored more than 40 publications, including 21 Journal Citation Report (JCR) papers. He is an Active Reviewer of international conferences and international journals, including the IEEE JOURNAL OF SELECTED TOPICS IN APPLIED EARTH OBSERVATION AND REMOTE SENSING (JSTARS), the IEEE TRANSACTIONS ON CIRCUITS AND SYSTEMS FOR VIDEO TECHNOLOGY, and the IEEE GEOSCIENCE AND REMOTE SENSING LETTERS. He received Best Paper Award of the JSTARS journal in 2014 and the Best Ph.D. Dissertation Award at the University of Extremadura, Cáceres, Spain, in 2015.

Part C. RELEVANT MERITS

C.1. Some Papers (10)

1. **S. Bernabe, G. Martin, J.M.P. Nascimento, J.M. Bioucas-Dias, A. Plaza and V. Silva.** “*Parallel Hyperspectral Coded Aperture for Compressive Sensing on GPUs*”. IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing, vol. 9, no. 2, pp. 932-944, February 2016. [IF (2016) = 2.913]. [**Rank:** Engineering, Electrical & Electronic (66/260); **Cuartile:** Q2].

2. **C. Gonzalez, S. Bernabe, D. Mozos and A. Plaza.** “*FPGA Implementation of an Automatically Detecting Targets in Remotely Sensed Hyperspectral Images*”. IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing, vol. 9, no. 9, pp. 4334-4343, September 2016. [IF (2016) = 2.913]. [**Rank:** Engineering, Electrical & Electronic (66/260); **Cuartile:** Q2].

3. **L.I. Jimenez, G. Martin, S. Sanchez, C. Garcia, S. Bernabe, J. Plaza and A. Plaza.** “*GPU Implementation of Spatial-Spectral Preprocessing for Hyperspectral Unmixing*”. IEEE Geoscience and Remote Sensing Letters, vol. 13, no. 11, pp. 1671-1675, November 2016. [IF (2016) = 2.761]. [**Rank:** Engineering, Electrical & Electronic (71/260); **Cuartile:** Q2].

4. **S. Bernabe, G. Botella, J.M.R. Navarro, C. Orueta, F.D. Igual, M. Prieto-Matias and A. Plaza.** “*Performance-Power Evaluation of an OpenCL Implementation of the Simplex Growing Algorithm for Hyperspectral Unmixing*”. IEEE Geoscience and Remote Sensing Letters, vol. 14, no. 3, pp. 304-308, March 2017. [IF (2017) = 2.893]. [**Rank:** Engineering, Electrical & Electronic (70/260); **Cuartile:** Q2].

5. **S. Bernabe, G. Botella, G. Martin, M. Prieto-Matias and A. Plaza.** “*Parallel Implementation of a Full Hyperspectral Unmixing Chain Using OpenCL*”. IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing, vol. 10, no. 6, pp. 2452-2461, June 2017. [IF (2017) = 2.777]. [**Rank:** Engineering, Electrical & Electronic (78/260); **Cuartile:** Q2].

6. **S. Bernabe, L.I. Jimenez, C. Garcia, J. Plaza and A. Plaza.** “*Multi-Core Real-Time Implementation of a Full Hyperspectral Unmixing Chain*”. IEEE Geoscience and Remote Sensing Letters, vol. 15, no. 5, pp. 744-748, May 2018. [IF (2018) = 3.534]. [**Rank:** Engineering, Electrical & Electronic (67/265); **Cuartile:** Q2].

7. **J.M. Haut, S. Bernabe, M.E. Paoletti, R. Fernandez-Beltran, A. Plaza and J. Plaza.** “*Low-High Power Consumption Architectures for Deep Learning Models Applied to Hyperspectral Image Classification*”. IEEE Geoscience and Remote Sensing Letters, vol. 16, no.5, pp. 776-780, May 2019. [IF (2019) = 3.833]. [**Rank:** Engineering, Electrical & Electronic (58/266); **Cuartile:** Q1].

8. **S. Bernabe, C. Garcia, F.D. Igual, G. Botella, M. Prieto-Matias and A. Plaza.** "Portability Study of an OpenCL Algorithm for Automatic Target Detection in Hyperspectral Images". IEEE Transactions on Geoscience and Remote Sensing, vol. 57, no.11, pp. 9499-9511, Nov 2019. [IF (2019) = 5.855]. [**Rank:** Engineering, Electrical & Electronic (27/266); **Cuartile:** Q1].

9. **M. Dao, C. Kwan, S. Bernabe, A. Plaza and K. Koperski.** "A Joint Sparsity Approach to Soil Detection Using Expanded Bands of WV-2 Images". IEEE Geoscience and Remote Sensing Letters, vol. 16, no.2, pp. 1869-1873, Dec 2019. [IF (2019) = 3.833]. [**Rank:** Engineering, Electrical & Electronic (58/266); **Cuartile:** Q1].

10. **S. Bernabe, C. Gonzalez, A. Fernandez and U. Bhangale.** "Portability and Acceleration of Deep Learning Inferences to Detect Rapid Earthquake Damage from VHR Remote Sensing Images using Intel OpenVINO Toolkit". IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing, **accepted for publication**, 2021. [IF (2019) = 3.827]. [**Rank:** Engineering, Electrical & Electronic (59/266); **Cuartile:** Q1].

C.2. Research Projects (Last 8 projects)

1- Project Title: Tools for open multi-risk assessment using Earth observation data (TOLOMEO).

Funding Entity: (REF. PIRSES-GA-2009) – Marie Curie Action for international research staff exchange (IRSES) (FP7).

Principal Researcher: Antonio Plaza Miguel

Recipient Entity: Universidad de Extremadura

Since: 01.01.2011 To: 12.31.2013

Participation: Researcher Budget: (Unknown) € State: Finished

2- Project Title: Ayuda básica a grupos de investigación de la Junta de Extremadura.

Funding Entity: Junta de Extremadura

Principal Researcher: Antonio Plaza Miguel

Recipient Entity: Universidad de Extremadura

Since: 01.01.2011 To: 12.31.2013

Participation: Researcher Budget: (Unknown) € State: Finished

3- Project Title: Implementación y gestión avanzada de datos en un nuevo sistema para calibración de satélites de observación remota de la tierra en España.

Funding Entity: Ministerio de Ciencia e Innovación

Principal Researcher: Antonio Plaza Miguel

Recipient Entity: Universidad de Extremadura

Since: 01.01.2012 Fecha de finalización: 12.31.2014

Participation: Researcher Budget: 121000 € State: Finished

4- Project Title: Hyperspectral Compressive Sensing and Unmixing (HYCOS)

Funding Entity: IT - FCT - Portugal

Principal Researcher: José M.P. Nascimento

Recipient Entity: Instituto de telecomunicações (Portugal)

Since: 03.01.2014 To: 10.01.2015

Participation: Researcher Budget: (Unknown) € State: Finished

5- Project Title: Arquitecturas y Tecnologías Emergentes Eficiencia Energética mediante Heterogeneidad.

Funding Entity: Ministerio de Economía y Competitividad, Spanish Government (TIN2012-32180)

Principal Researcher: Manuel Prieto Matías

Recipient Entity: Universidad Complutense de Madrid

Since: 01.01.2013 To: 12.31.2016

Participation: Researcher Budget: 219620 € State: Finished

6- Project Title: Computación heterogénea eficiente: del procesador al datacenter (Cophernico)
Funding Entity: Ministerio de Economía y Competitividad, Spanish Government (TIN 2015-65277-R)
Principal Researcher: Manuel Prieto Matías / Luis Piñuel Moreno
Recipient Entity: Universidad Complutense de Madrid
Since: 01.01.2016 **To:** 12.31.2019
Participation: Researcher **Budget:** 307000 € **State:** Active

7- Project Title: HEREROGENEIDAD Y ESPECIALIZACIÓN EN LA ERA POST-MOORE (ref. RTI2018-093684-B-I00).
Funding Entity: Ministerio de Ciencia, Innovación y Universidades.
Principal Researcher: MANUEL PRIETO MATIAS.
Recipient Entity: Universidad Complutense de Madrid.
Since: 01.01.2019 **To:** At present.
Participation: Researcher **Budget:** 248700 €. **State:** Active.

8- Project Title: CABAHLA-CM: Convergencia Big dAta-Hpc: de Los sensores a las Aplicaciones.
Funding Entity: Comunidad Autónoma de Madrid.
Principal Researcher: José Francisco Tirado Fernández.
Recipient Entity: Universidad Complutense de Madrid.
Since: 01.01.2019 **To:** At present.
Participation: Researcher **Budget:** 101100 €. **State:** Active.

C.5. Stays

Sergio Bernabé has performed research stays thanks to competitive funding (Cooperative Research Thematic Network Image processing and multidimensional signal (PRISMA) - TEC2005-24739-E) at Instituto Universitario de Microelectrónica Aplicada – IUMA – Universidad de las Palmas de Gran Canaria (Spain) (3.5 months). Moreover he has obtained competitive funding (University of Iceland fellowship) to stay during 12 months in 2012. And finally, from TOLOMEO project to stay during 1 month in 2013.

C.6. Accreditations

Accreditation of Assistant Professor (Acreditación de Profesor Ayudante Doctor), Associate Professor Tenure-Track (Acreditación de Profesor Contratado Doctor) and Associate Professor (Acreditación de Profesor Titular de Universidad) by Agencia Nacional de Evaluación de la Calidad y Acreditación (ANECA) in 2014, 2016 and 2021, respectively.

C.7. Participation in organizations of activities, program committees, ...

Title: FOURTH IEEE GEOSCIENCE AND REMOTE SENSING SO
Type of Activity: International Conference organization **Scope of the activity:** International
Entity: IEEE **City:** Lisboa, Portugal
Since: 06.06.2011 **To:** 06.09.2011

C.8. Awards, mentions and distinctions

Description: International mention to the Ph.D. degree
Entity: Universidad de Extremadura **Type of entity:** University
Date: 01.20.2014

Description: Best Paper Award 2013 of the IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing (JSTARS).
Entity: IEEE **Type of entity:** Institute of Electrical and Electronics Engineers
Date: 05.13.2014

Description: Best Ph.D. Dissertation Award
Entity: Universidad de Extremadura **Type of entity:** University
Date: 01.28.2015