

<b>Fecha del CVA</b>	02-08-2024
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**Parte A. DATOS PERSONALES**

Nombre y apellidos	Antonio Plaza Miguel		
Página web	<a href="https://sites.google.com/view/antonioplaza">https://sites.google.com/view/antonioplaza</a>	Edad	48 años
Núm. identificación del investigador	Researcher ID	C-4455-2008	
	Código Orcid	0000-0002-9613-1659	

**A.1. Situación profesional actual**

Organismo	Universidad de Extremadura		
Dpto./Centro	Departamento de Tecnología de Computadores y Comunicaciones		
Dirección	Escuela Politécnica, Avenida Universidad s/n, 10003 Cáceres		
Teléfono	927257000	correo electrónico	<a href="mailto:aplaza@unex.es">aplaza@unex.es</a>
Categoría profesional	Catedrático de Universidad	Fecha inicio	2019
Espec. cód. UNESCO	3304		
Palabras clave	Procesamiento de imágenes, arquitectura de computadores		

**A.2. Formación académica (título, institución, fecha)**

Licenciatura/Grado/Doctorado	Universidad de Extremadura	Año
Doctor en Informática	Universidad de Extremadura	2002
Ingeniero en Informática	Universidad de Extremadura	1997

**A.3. Indicadores generales de calidad de la producción científica (véanse instrucciones)**

Antonio Plaza was born in Cáceres, SPAIN, in March 1975. He received the Computer Engineer degree in 1997, the M.Sc. degree in 1999, and the Ph.D. degree in 2002, all in Computer Engineering. Dr. Plaza is a Full Professor with the Department of Technology of Computers and Communications, University of Extremadura, Spain, where he is the Head of the Hyperspectral Computing Laboratory (HyperComp). He has authored or co-authored 850 publications, including 439 journal citation report (JCR) papers, 25 international book chapters, and 329 peer-reviewed international conference papers. He is a highly cited researcher (included in the 2018, 2019, 2020, 2021, 2022 and 2023 Highly Cited Researchers List by Web of Science/Clarivate Analytics). His main research interests comprise remotely sensed hyperspectral image analysis, signal processing, and efficient implementations of large-scale scientific problems on high performance computing architectures, including commodity Beowulf clusters, heterogeneous networks of computers and clouds, and specialized computer architectures such as field-programmable gate arrays (FPGAs) or graphical processing units (GPUs).

In the following, several bibliometric indicators about the research works of Dr. Plaza are provided. These indicators were collected on February 1, 2024:

- Clarivate Analytics Highly cited researcher: 2018, 2019, 2020, 2021, 2022, 2023.
- 26 papers currently labeled as “Essential Science Indicators” (ESI) by Web of Science/Clarivate Analytics.
- Google Scholar: 48,124 citations, h-index: 94.
- Scopus: 693 documents, 36,016 citations, h-index: 86.
- Web of Science: 718 documents, 31,063 citations, h-index: 79, 15,942 citing articles, verified reviews: 412, verified editor records: 6,814.
- DBLP: 369 journal articles and 183 conference and workshop papers.
- Orcid: 722 works.
- ResearchGate: 782 publications, 173,443 reads, 42,269 citations.
- Highest h-index in the area of Electrical & Electronic Engineering in Spain.
- Highest h-index in the area of Imaging Science & Photographic Technology in Spain.
- Highest h-index in the area of Remote Sensing in Spain.
- 4th researcher with highest h-index in the area of Computer Science in Spain.
- 300th researcher with highest h-index overall in Spain.
- Listed among the 2% top cited researchers in the world according to Stanford University.

- Distinguished with the 2022 and 2023 Computer Science in Spain Leader Award by research.com.

Dr. Plaza is a Fellow of IEEE "for contributions to hyperspectral data processing and parallel computing of Earth Observation data.". He was elected as a Member of Academia Europaea - The Academy of Europe and as a Fellow of the Asia-Pacific Artificial Intelligence Association (AAIA). He was elected as a voting member of the Administrative Committee (AdCom) of the IEEE Geoscience and Remote Sensing Society (GRSS) in 2011, and was appointed international Director of Education for GRSS (2011-2012). On January 2013 he started a three-year term as Editor-in-Chief of the IEEE Transactions on Geoscience and Remote Sensing Journal, which was extended for two years until December 2017. He served as the President of the Spanish Chapter of GRSS (2013-2016). He currently serves as Chair of the GRSS Publications Awards Committee and Chair of the GRSS Fellow Evaluation Committee. Dr. Plaza has supervised 17 PhD dissertations on hyperspectral image analysis. He was nominated for the Excellence of Teaching Award of University of Extremadura in 2015 and 2018, and was the winner of the Excellence Teaching Award of University of Extremadura in 2019. He served as Director of Education of the IEEE Geoscience and Remote Sensing Society (2011-2012). Dr. Plaza has served as a proposal evaluator for the European Commission (Marie Curie Actions, Engineering Panel, FP7 and Space Program, H2020), the National Science Foundation (NSF), the European Space Agency, the Belgium Science Policy, the Israel Science Foundation, and the Spanish Ministry of Science and Innovation. He has participated in the Tenure Track Selection Committee of different Universities in Italy, Spain and Australia. He has been an adjunct to AEI (Agencia Estatal de Investigación) for the evaluation of research proposals for several years. He is a winner of the Aritmel Award of the Spanish Computer Science Society (SCIE) and BBVA Foundation in 2023.

**Parte B. RESUMEN LIBRE DEL CURRÍCULUM** (*máximo 3500 caracteres, incluyendo espacios en blanco*)

Prof. Plaza is a pioneer scientist in remotely sensed hyperspectral imaging (1999-2023), applying this new technique to important problems worldwide (land-cover classification, precision agriculture, water quality analysis). He has promoted the University of Extremadura (UEx) to become #13 institution in the field of remote sensing in the world, as indicated by the last edition of ARWU Shanghai Ranking Research Fields. He has been a leader of UEx in IT activities, being the most highly cited researcher of UEx and one of the most highly cited researchers in his field in Spain (currently top cited Spanish scientist in Remote Sensing, Electrical and Electronic Engineering and Imaging Science and Photographic Technology, as well as fourth top cited Spanish scientist in Computer Science). Prof. Plaza coordinated the Hyperspectral Imaging Network project, a four-year Marie Curie Research Training Network (Budget: 2.800.000 Euro) designed to build an interdisciplinary European research community focused on hyperspectral imaging. This project had an important impact on the advancement of the hyperspectral imaging area in Europe. It included 15 European partners, with 9 universities, 3 research institutes and 3 SMEs, resulting in 15 PhD dissertations that helped establishing the current role of Europe as a leader in this field. Through the TOLOMEO and EOXPUSURE European projects, Prof. Plaza helped consolidating hyperspectral imaging in Latin America, creating an important network of scientific contacts which spans several countries in that continent, increasing the presence of Europe in one of the world's developing regions of most interest. He also established an extensive network in China, being recognized as a Visiting Professor by the Chinese Academy of Sciences, a Changjiang Scholar by Hunan University, and a Chair Professor by Nanjing University. He was the initiator and founder of the successful series of IEEE Geoscience and Remote Sensing Society (GRSS) Summer Schools, and also organized four summer schools within the Marie Curie Hyper-I-Net project. He organized other multiple education and training activities on hyperspectral imaging across Europe. These activities have helped defining a new generation of remote sensing scientists in Europe. In addition, he holds and has held very important positions within the Institute of Electric and Electronic Engineers (IEEE), such as Editor-in-Chief of IEEE Transactions on Geoscience and Remote Sensing (TGRS), 2013-2017, Editor-in-Chief of the IEEE Journal on Miniaturization for Air and Space Systems

(2020-2021), Chair of the IEEE GRSS Publication Awards Committee (2018-now), Vice-Chair (2019-2022) and Chair (2023-2024) of the IEEE GRSS Fellow Evaluation Committee. Prof. Plaza has been recognized in 2015 by the IEEE as Fellow “for contributions to hyperspectral data processing and parallel computing of Earth observation data.” He was also elevated to Fellow status by the Asia-Pacific Artificial Intelligence Association (AAIA). He was elected as a member of Academia Europaea in 2020. He is a highly cited researcher (included in the prestigious Highly Cited Researchers List by Web of Science/Clarivate Analytics in 2018, 2019, 2020, 2021, 2022 and 2023, and listed among the 2% top cited researchers in the world according to Stanford University).

## **Parte C. MÉRITOS MÁS RELEVANTES** *(ordenados por tipología)*

### **C.1. Publicaciones**

D. Hong, B. Zhang, X. Li, Y. Li, C. Li, J. Yao, N. Yokoya, H. Li, X. Jia, A. Plaza, P. Gamba, J. A. Benediktsson and J. Chanussot. SpectralGPT: Spectral Remote Sensing Foundation Model. IEEE Transactions on Pattern Analysis and Machine Intelligence, accepted for publication, 2024 [IF(2022)=23.6].

B. Tu, Q. Ren, J. Li, Z. Cao, Y. Chen and A. Plaza. NCGLF2: Network Combining Global and Local Features for Fusion of Multisource Remote Sensing Data. Information Fusion, vol. 104, 102192, April, 2024 [IF(2022)=18.6].

X. Yang, B. Tu, Q. Li, J. Li and A. Plaza. Graph Evolution-Based Vertex Extraction for Hyperspectral Anomaly Detection. IEEE Transactions on Neural Networks and Learning Systems, accepted for publication, 2024 [IF(2022)=10.4].

B. Tu, X. Yang, W. He, J. Li and A. Plaza. Hyperspectral Anomaly Detection Using Reconstruction Fusion of Quaternion Frequency Domain Analysis. IEEE Transactions on Neural Networks and Learning Systems, accepted for publication, 2024 [IF(2022)=10.4].

S. Minaee, Y. Boykov, F. Porikli, A. Plaza, N. Kehtarnavaz and D. Terzopoulos. Image Segmentation Using Deep Learning: A Survey. IEEE Transactions on Pattern Analysis and Machine Intelligence, vol. 44, no. 7, pp. 3523-3542, July 2022 [IF(2022)=23.6].

B. Fang, G. Chen, R. Kou, M. E. Paoletti, J. M. Haut and A. Plaza. CIT: Content-Invariant Translation with Hybrid Attention Mechanism for Unsupervised Change Detection. ISPRS Journal of Photogrammetry and Remote Sensing, vol. 204, pp. 321-339, October 2023 [IF(2022)=12.7].

Y. Su, L. Gao, M. Jiang, A. Plaza, X. Sun and B. Zhang. NSCKL: Normalized Spectral Clustering with Kernel-Based Learning for Semisupervised Hyperspectral Image Classification. IEEE Transactions on Cybernetics, vol. 53, no. 10, pp. 6649-6662, October 2023 [IF(2022)=11.8].

L.-J. Deng, G. Vivone, M. E. Paoletti, G. Scarpa, J. He, Y. Zhang, J. Chanussot and A. Plaza. Machine Learning in Pansharpening: A Benchmark, from Shallow to Deep Networks. IEEE Geoscience and Remote Sensing Magazine, vol. 10, no. 3, pp. 279-315, September 2022 [IF(2022)=14.6].

J. Yue, L. Fang, P. Ghamisi, J. Li, J. Chanussot and A. Plaza. Optical Remote Sensing Image Understanding with Weak Supervision: Concepts, Methods and Perspectives. IEEE Geoscience and Remote Sensing Magazine, vol. 10, no. 2, pp. 250-269, June 2022 [IF(2022)=14.6].

M. Xu, F. Deng, S. Jia, X. Jia and A. Plaza. Attention Mechanism-Based Generative Adversarial Networks for Cloud Removal in Landsat Images. Remote Sensing of Environment, vol. 271, 112902, March 2022 [IF(2022)=13.5].

H.-C. Li, W.-S. Hu, W. Li, J. Li, Q. Du and A. Plaza. A3CLNN: Spatial, Spectral and Multi-Scale Attention ConvLSTM Neural Network for Multi-Source Remote Sensing Data Classification. IEEE Transactions on Neural Networks and Learning Systems, vol. 33, no. 2, pp. 747-761, February 2022 [IF(2022)=10.4].

J. M. Haut, M. E. Paoletti, S. Moreno-Alvarez, J. Plaza, Juan A. Rico-Gallego and A. Plaza. Distributed Deep Learning for Remote Sensing Data Interpretation. Proceedings of the IEEE, vol. 109, no. 8, pp. 1320-1349, August 2021 [IF(2021)=14.910].

C. Liu, J. Li, L. He, A. Plaza, S. Li and B. Li. Naive Gabor Networks for Hyperspectral Image Classification. IEEE Transactions on Neural Networks and Learning Systems, vol. 32, no. 1, pp. 376-390, January 2021 [IF(2021)=14.255].

N. He, L. Fang, S. Li, J. Plaza and A. Plaza. Skip-Connected Covariance Network for Remote Sensing Scene Classification. IEEE Transactions on Neural Networks and Learning Systems, vol. 31, no. 5, pp. 1461-1474, May 2020 [IF(2020)=10.451].

## **C.2. Proyectos más relevantes**

Título del proyecto: Hyperspectral Imaging Network (HYPER-I-NET).

Entidad financiadora: Comisión Europea (MRTN-CT-2006-035927)

Entidades participantes: 15 socios de 10 países Europeos

Financiación concedida: 2.8 Millones de Euros

Duración, desde: 2007 hasta: 2011

Número de investigadores participantes: 15

Título del proyecto: High Performance Computing Centre (HOST)

Entidad financiadora: FP7 REGPOT (FP7-REGPOT-CT-2011-284595-HOST)

Entidades participantes: Socios de 5 países europeos

Financiación concedida: 2.2 Millones de Euros

Duración, desde: 2012 hasta: 2014

Número de investigadores participantes: 12

Título del proyecto: Tools for Open Multi-Risk Assessment Using Earth Observation Data (TOLOMEO)

Entidad financiadora: Marie Curie Action for International Research Staff Exchange (PIRSES-GA-2009)

Entidades participantes: Socios de 4 países europeos y 5 países en sudamérica

Financiación concedida: 125.000 Euros

Duración, desde: 2011 hasta: 2014

Número de investigadores participantes: 18

Título del proyecto o contrato: Tools for Mapping Human Exposure to Risky Environmental Conditions by Means of Ground and Earth Observation Data (EOXPOSURE)

Entidad financiadora: Marie Skłodowska-Curie Research and Innovation Staff Exchange (H2020-MSCA-RISE-2016-734541)

Entidades participantes: Socios de 3 países europeos y 2 países en sudamérica

Duración: Desde: 2017 Hasta: 2021 N° total de meses: 48

Financiación total concedida: 270.000 Euros

N° de Investigadores participantes: 15

Título del proyecto: Open European Network for High Performance Computing on Complex Environments

Entidad financiadora: European Cooperation in Science and Technology (IC0805)

Entidades participantes: Socios de 17 países europeos

Financiación concedida: 60.000 Euros

Duración, desde: 2009 hasta: 2011

Número de investigadores participantes: 35