

Juan M. Haut

Tenured Associate Professor (Profesor Titular de Universidad)

Department of Computer and Communication Technology

University of Extremadura | Hyperspectral Computing Laboratory (HyperComp)

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Tenured Associate Professor (Profesor Titular de Universidad) at the Department of Computer and Communication Technology, University of Extremadura, and member of the Hyperspectral Computing Laboratory (HyperComp). Research focused on deep learning for hyperspectral remote sensing, GPU acceleration and distributed computing, with an emphasis on computational efficiency. IEEE Senior Member, Chair of the Spanish Chapter of IEEE GRSS, Associate Editor of Remote Sensing, and Editorial Board Member of Scientific Reports.

ACADEMIC APPOINTMENTS

2026 - present Tenured Associate Professor (Profesor Titular de Universidad)

University of Extremadura | Cáceres, Spain

Architecture and Computer Technology area. Research in deep learning, hyperspectral remote sensing and high-performance computing. Teaching Arquitecturas Especializadas, Sistemas Multimedia and Computación Paralela in 2026-2027.

Appointment published in the BOE on 23 May 2026

2023 - 2026 Profesor Contratado Doctor

University of Extremadura | Cáceres, Spain

Architecture and Computer Technology area. Teaching Arquitecturas Especializadas, Diseño de Sistemas Operativos, Tecnología de Computadores.

2021 - 2023 Profesor Ayudante Doctor

University of Extremadura | Cáceres, Spain

2020 - 2021 Profesor Ayudante Doctor

Universidad Nacional de Educación a Distancia (UNED) | Madrid, Spain

2019 Profesor Sustituto

University of Extremadura | Cáceres, Spain

2015 - 2019 Predoctoral Researcher (FPU Grant)

University of Extremadura | Cáceres, Spain

EDUCATION

2015 - 2019 PhD in Information Technology | University of Extremadura

International Mention; Sobresaliente Cum Laude; Outstanding Doctoral Award.
Supervisors: Antonio Plaza and Javier Plaza.

2014 - 2016 MSc in Computer Engineering | University of Extremadura

2013 - 2014 MSc in Secondary Education Teaching | University of Extremadura

2010 - 2014 BSc in Computer Engineering | University of Extremadura

2007 - 2011 BSc in Computer Management Engineering | University of Extremadura

RESEARCH LEADERSHIP

OASIS - Optimización de la IA para Iniciativas Sostenibles de Teledetección Hiperespectral

National project funded by Agencia Estatal de Investigación. PI: J.M. Haut. 163,750 €.

Deep Learning optimization for sustainable hyperspectral remote sensing; GPU acceleration and energy efficiency
2024-09-01 to 2027-12-31

RAT_EOS_PC - Early Warning Networks for Climate Risk Remote Sensing

European Commission project. PI: J.M. Haut. 548,502 €.

Earth observation satellites for civil protection; Climate change risk detection
2023-09-01 to 2026-12-31

PROFESSIONAL SERVICE

Chair of the Spanish Chapter of IEEE GRSS.

Associate Editor of [Remote Sensing](#) since 2026.

Editorial Board Member of [Scientific Reports](#).

Guest Editor of multiple special issues, including [Cutting-Edge Algorithms and Characteristic Geo-Applications with Remote Sensing](#).

Editorial service has included Topical Editor for IEEE TGRS and Associate Editor for IEEE GRSL and IEEE J-MASS, as documented in the [University of Extremadura's 2022 research profile](#).

AWARDS AND DISTINCTIONS

2022	Research Excellence Award (Young Researchers, technical field) UEx
2021	Outstanding Paper Award - IEEE HyperMLPA Workshop IEEE
2021	Best Reviewer - IEEE Trans. Geoscience and Remote Sensing IEEE GRSS
2020	Best PhD Thesis in Remote Sensing IEEE Spain GRSS Chapter
2020	Outstanding Doctoral Award (Premio Extraordinario de Doctorado) UEx
2019	Outstanding Paper Award - IEEE WHISPERS IEEE
2018	Best Reviewer - IEEE Geoscience and Remote Sensing Letters IEEE GRSS

TECHNICAL EXPERTISE

Deep Learning: CNNs, RNNs, GANs, Transformers, Capsule Networks, Neural ODEs, Foundation Models

High-Performance Computing: GPU Programming, CUDA, Triton, Distributed Computing, Cloud Computing, Apache Spark

Remote Sensing: Hyperspectral Imaging, Image Classification, Anomaly Detection, Unmixing, Super-Resolution

Programming: Python, PyTorch, TensorFlow, C/C++, CUDA, Docker, Linux

ACCREDITATIONS AND LANGUAGES

2023-04-20 | **Profesor Titular de Universidad** | ANECA

2019-11-25 | **Profesor Contratado Doctor** | ANECA

2019-11-25 | **Profesor Ayudante Doctor** | ANECA

2024 | **Sexenio CNEAI (2016-2021)** | ANECA / CNEAI

Spanish: Native speaker | **English:** B1 | **Portuguese:** A2

SELECTED JOURNAL ARTICLES

A selection of 8 journal articles illustrating recent methods, applications and foundational work. Complete publications and current citation metrics: [publication list](#) and [Google Scholar](#).

01. 3D-SCube: Information-preserving spatial-spectral rearrangement for hyperspectral semantic segmentation

M. B. García-Flores, C. Cañada-Rostro, M. E. Paoletti, **J. M. Haut**

Expert Systems with Applications, 333, 133926 (2027). Journal volume dated January 2027.

[doi:10.1016/j.eswa.2026.133926](#)

02. DRAGON-BS: A Unified Gradient-Boosted Reinforcement Learning Framework for Interpretable Band Selection

M. B. García-Flores, C. Cañada-Rostro, M. E. Paoletti, **J. M. Haut**

IEEE Transactions on Geoscience and Remote Sensing (2026). Early Access.

[doi:10.1109/TGRS.2026.3741200](#)

03. Towards knowledge-infused seabed sediment mapping: A semi-supervised framework integrating large language models and knowledge graphs for multibeam data

H. Wang, W. Chen, X. Li, G. Zhou, Q. Liang, J. Li, M. E. Paoletti, **J. M. Haut**

Engineering Applications of Artificial Intelligence, 182, 115757 (2026).

[doi:10.1016/j.engappai.2026.115757](#)

04. Scaling and Validating a Distributed Training and Retraining Pipeline for Network Intrusion Detection

J. M. Franco-Valiente, J. Calle-Cancho, A. Serrano-Martín, **J. M. Haut**

Electronics, 15(18), 4074 (2026).

[doi:10.3390/electronics15184074](#)

05. Remote Sensing of the Coastal Zone: An ever-growing concern for coastal sustainability

B. Fang, X. Zhang, L. Wang, R. Kou, M. E. Paoletti, **J. M. Haut**, A. Plaza

IEEE Geoscience and Remote Sensing Magazine, 2-40 (2026).

[doi:10.1109/MGRS.2026.3716182](#)

06. Condensed and Discriminative Feature Encoding for Remote Sensing Image Retrieval

L. Han, Y. Ge, M. E. Paoletti, S. Moreno-Álvarez, Y. Xu, **J. M. Haut**

IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing, 19, 25537-25550 (2026).

[doi:10.1109/JSTARS.2026.3707402](#)

07. Distributed Parallel Hyperspectral Unmixing for Large-Scale Data in Spark Environments via Geometric Distance

C. Cañada, M. E. Paoletti, M. B. García-Flores, X. Tao, R. Pastor-Vargas, **J. M. Haut**

IEEE Transactions on Geoscience and Remote Sensing, 63, 1-19 (2025).

[doi:10.1109/TGRS.2025.3624287](#)

08. Deep Learning Classifiers for Hyperspectral Imaging: A Review

M. Paoletti, **J. Haut**, J. Plaza, A. Plaza

ISPRS Journal of Photogrammetry and Remote Sensing, 158, 279-317 (2019).

[doi:10.1016/j.isprsjprs.2019.09.006](#)