



Beatriz Martínez Vega

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Summary of CV

This section describes briefly a summary of your career in science, academic and research; the main scientific and technological achievements and goals in your line of research in the medium -and long- term. It also includes other important aspects or peculiarities.

BEATRIZ MARTINEZ-VEGA received the telecommunication engineer degree and the research master's degree in telecommunication technologies from the University of Las Palmas de Gran Canaria, Spain, in 2018, and 2019, respectively. Since then, she has conducted her research activity in the Integrated System Design Division at the Institute for Applied Microelectronics (IUMA), University of Las Palmas de Gran Canaria, in the field of electronic and bioengineering. In 2019, she started her PhD thesis and started to work as a Researcher in the ITHaCA project (hyperspectral identification of brain tumors). In 2020, she obtained a Predoctoral Research Grant from the Canary Islands Government. Her current research interest is the use of hyperspectral imaging for real-time cancer detection. In 2021 she performed a research stay in the Institute for Computer-Assisted Surgery (ICCAS), medical faculty, Leipzig University (Germany), under the supervision of Dr. Claire Chalopin, whose work focuses on hyperspectral imaging to detect oxygen saturation in tissues, along with the development of segmentation and registration tools for computer-assisted surgery.



Beatriz Martínez Vega

Surname(s): **Martínez Vega**
Name: **Beatriz**
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ScopusID: **5718919933**
ResearcherID: **AGA-7172-2022**
Nationality: **Spain**
Contact aut. region/reg.: **Canary Islands**
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Current professional situation

Employing entity: Universidad de las Palmas de Gran Canaria **Type of entity:** University

Department: Diseño de sistemas integrados, Instituto Universitario de Microelectrónica Aplicada

Professional category: Ingeniero de Telecomunicación

Start date: 01/11/2019

Type of contract: Grant-assisted student (pre or post-doctoral, others)

Performed tasks: Realización de tareas de investigación en la rama de ingeniería biomédica del IUMA, aplicando principalmente la tecnología hiperespectral para la detección y análisis de diferentes tipos de cáncer. Participación activa del proyecto ITHaCA ProID2017010164) en diversas tareas como: captura de datos hiperespectrales en operaciones neuroquirúrgicas, desarrollo de algoritmo de procesamiento de datos hiperespectrales, redacción de documentación de artículos científicos, captura de datos hiperespectrales de muestras in-vitro utilizando el microscopio hiperespectral disponible en el IUMA y procesamiento de estos datos.



Education

University education

1st and 2nd cycle studies and pre-Bologna degrees

1 **University degree:** Higher degree

Name of qualification: Máster en Tecnologías de Telecomunicación

City degree awarding entity: Las Palmas de G.C., Canary Islands, Spain

Degree awarding entity: Universidad de las Palmas de Gran Canaria **Type of entity:** University

Date of qualification: 06/09/2019

Average mark: Good

2 **University degree:** Higher degree

Name of qualification: Graduado o Graduada en Ingeniería en Tecnologías de Telecomunicación

City degree awarding entity: Las Palmas de G.C., Canary Islands, Spain

Degree awarding entity: Universidad de las Palmas de Gran Canaria **Type of entity:** University

Date of qualification: 06/09/2018

Average mark: Good

Language skills

Language	Listening skills	Reading skills	Spoken interaction	Speaking skills	Writing skills
English	B1	B1	B1	B1	B1

Teaching experience

Experience supervising doctoral thesis and/or final year projects

Project title: Semi-Supervised Classification of Hyperspectral Images for Brain Tumours detection

Type of project: Master Thesis

Co-director of thesis: Gustavo Marrero Callico; Samuel Ortega Sarmiento; Beatriz Martinez Vega

Entity: Universidad de las Palmas de Gran Canaria **Type of entity:** University

Student: Patricia Beltran Alonso

Obtained qualification: 10

Date of reading: 15/12/2021

Date of award: 15/09/2021



Scientific and technological experience

Scientific or technological activities

R&D projects funded through competitive calls of public or private entities

- 1** **Name of the project:** WARIFA (Watching the risk factors: Artificial intelligence and the personalized prevention and management of chronic conditions - 101017385)
Entity where project took place: Universidad de las Palmas de Gran Canaria **Type of entity:** University
City of entity: Las Palmas de Gran Canaria, Canary Islands, Spain
Name principal investigator (PI, Co-PI....): Gustavo Marrero Callico Gustavo Marrero Callico
Nº of researchers: 12
Funding entity or bodies: Comisión Europea **Type of entity:** Público
Start-End date: 01/01/2020 - 31/12/2024
Total amount: 6.000.000 €
- 2** **Name of the project:** TALENT - Artificial Intelligence and High-Performance Systems Applied to E-Health and Smart Farming (PID2020-116417RB-C42)
Entity where project took place: Universidad de las Palmas de Gran Canaria **Type of entity:** University
City of entity: Las Palmas de Gran Canaria, Canary Islands, Spain
Name principal investigator (PI, Co-PI....): Gustavo M. Callico; Sebastián Lopez
Funding entity or bodies: Ministerio de Ciencia e Innovación. Universidades **Type of entity:** .
Start-End date: 01/09/2021 - 01/09/2024 **Duration:** 3 years
Total amount: 175.813 €
- 3** **Name of the project:** Efectividad y coste-efectividad del Ozono en el manejo de pacientes con dolor por neuropatía periférica inducida por quimioterapia: Ensayo clínico aleatorizado, triple ciego (FED BF1-19-03)
Identify key words: Biomedicine
Type of project: Basic research (including archaeological digs, etc) **Geographical area:** National
Degree of contribution: Researcher
Entity where project took place: Hospital Universitario de Gran Canaria Dr. Negrín y Complejo Hospitalario **Type of entity:** Healthcare Institutions
City of entity: Las Palmas de Gran Canaria, Canary Islands, Spain
Name principal investigator (PI, Co-PI....): Bernardino Clavo Varas
Nº of researchers: 24
Funding entity or bodies: Fundación Española del Dolor **Type of entity:** Associations and Groups
City funding entity: Madrid, Community of Madrid, Spain
Type of participation: Team member
Name of the programme: Beca-Seguro de la Fundación Española del Dolor

**Code according to the funding entity:** FED BF1-19-03**Start-End date:** 01/01/2020 - 01/01/2023**Duration:** 3 years

- 4 Name of the project:** PLATINO - Plataforma HW/SW Distribuida para el Procesamiento Inteligente de Información Sensorial Heterogénea en Aplicaciones de Supervisión de Grandes Espacios Naturales (TEC2017-86722-C4-1-R)

Entity where project took place: Universidad de las Palmas de Gran Canaria **Type of entity:** University**City of entity:** Las Palmas de Gran Canaria, Canary Islands, Spain**Name principal investigator (PI, Co-PI...):** Gustavo Marrero Callicó; Sebastián López**Start-End date:** 01/01/2018 - 31/12/2020**Total amount:** 22.869 €

- 5 Name of the project:** ITHaCA: Identificación Hiperespectral de Tumores Cerebrales (ProID2017010164)

Entity where project took place: Universidad de las Palmas de Gran Canaria **Type of entity:** University**City of entity:** Las Palmas de Gran Canaria, Canary Islands, Spain**Name of the programme:** Fondo Europeo de Desarrollo Regional**Code according to the funding entity:** ProID2017010164**Start-End date:** 30/12/2017 - 30/09/2019**Total amount:** 69.914,45 €

Scientific and technological activities

Scientific production

Publications, scientific and technical documents

- 1** Raquel Leon; Beatriz Martinez-Vega; Himar Fabelo; Samuel Ortega; Veronica Melian; Irene Castaño; Gregorio Carretero; Pablo Almeida; Aday Garcia; Eduardo Quevedo; Javier A. Hernandez; Bernardino Clavo; Gustavo M. Callico. Non-Invasive Skin Cancer Diagnosis Using Hyperspectral Imaging for In-Situ Clinical Support. Journal of Clinical Medicine. 9 - 6, pp. 1662. MDPI, 01/06/2020. Available on-line at: <<https://www.mdpi.com/2077-0383/9/6/1662>>. ISSN 2077-0383

DOI: <https://doi.org/10.3390/jcm9061662>**Type of production:** Scientific paper**Position of signature:** 2**Total no. authors:** 13**Impact source:** ISI**Impact index in year of publication:** 3.303**Position of publication:** 36**Relevant publication:** Yes**Format:** Journal**Degree of contribution:** Author or co-author of article in journal with external admissions assessment committee**Corresponding author:** No**Category:** Science Edition - MEDICINE, GENERAL & INTERNAL**Journal in the top 25%:** Yes**No. of journals in the cat.:** 165

- 2** Beatriz Martinez; Raquel Leon; Himar Fabelo; Samuel Ortega; Juan F. Piñeiro; Adam Szolna; Maria Hernandez; Carlos Espino; Aruma J. O'Shanahan; David Carrera; Sara Bisshopp; Coralía Sosa; Mariano Marquez; Rafael Camacho; Maria de la Luz Plaza; Jesus Morera; Gustavo M. Callico. Most Relevant Spectral Bands Identification for Brain Cancer Detection Using Hyperspectral Imaging. Sensors. 19 - 24, pp. 1 - 28. MDPI, 12/12/2019. Available on-line at: <<https://www.mdpi.com/1424-8220/19/24/5481>>. ISSN 1424-8220



DOI: <https://doi.org/10.3390/s19245481>

Type of production: Scientific paper

Position of signature: 1

Total no. authors: 17

Impact source: ISI

Impact index in year of publication: 3.031

Position of publication: 15

Relevant publication: Yes

Format: Journal

Degree of contribution: Author or co-author of article in journal with external admissions assessment committee

Corresponding author: Yes

Category: Science Edition - INSTRUMENTS & INSTRUMENTATION

Journal in the top 25%: Yes

No. of journals in the cat.: 61

- 3** Beatriz Martinez-Vega; Mariia Tkachenko; Marianne Matkabi; Samuel ortega; Himar Fabelo; Fran Balea-Fernandez; Marco La Salvia; Emanuele Torti; Francesco Leporati; Gustavo M. Callico; Claire Chalopin. Evaluation of Preprocessing Methods on Independent Medical Hyperspectral Databases to Improve Analysis. *Sensors*. 22 - 22, pp. 1 - 19. Basel(Switzerland): MDPI, 18/11/2022. Available on-line at: <<https://www.mdpi.com/1424-8220/22/22/8917>>. ISSN 1424-8220

DOI: 10.3390/s22228917

Type of production: Scientific paper

Total no. authors: 11

Format: Journal

Corresponding author: Yes

- 4** La Salvia; Leon; Fabelo; Ortega; Balea-Fernandez; Martinez-Vega; Castaño; Almeida; Carretero; Hernandez; Marrero Callico; Leporati. Neural Networks-Based On-Site Dermatologic Diagnosis through Hyperspectral Epidermal Images. *Sensors*. pp. 1 - 15. 21/09/2022. Available on-line at: <<https://www.mdpi.com/1424-8220/22/19/7139>>. ISSN 1424-8220

Type of production: Scientific paper

Corresponding author: No

- 5** La Salvia; Torti; Leon; Fabelo; Ortega; Martinez-Vega; Marrero; Leporati. Deep Convolutional Generative Adversarial Networks to Enhance Artificial Intelligence in Healthcare: A Skin Cancer Application. *Sensors*. pp. 1 - 12. 17/08/2022. Available on-line at: <<https://www.mdpi.com/1424-8220/22/16/6145>>. ISSN 1424-8220

Type of production: Scientific paper

Format: Scientific and technical document or report

- 6** Francisco Javier Balea-Fernandez; Beatriz Martinez-Vega; Samuel Ortega; Himar Fabelo; Raquel Leon; Gustavo M. Callico; Cristina Bilbao-Sieyro. Analysis of Risk Factors in Dementia Through Machine Learning. *Journal of Alzheimer's Disease*. pp. 1 - 17. IOS Press, 23/12/2020. Available on-line at: <<https://content.iospress.com/articles/journal-of-alzheimers-disease/jad200955>>. ISSN 1875-8908

DOI: 10.3233/JAD-200955

Type of production: Scientific paper

Position of signature: 3

Total no. authors: 7

Impact source: JCR

Impact index in year of publication: 3.909

Position of publication: 94

Format: Journal

Degree of contribution: Author or co-author of article in journal with external admissions assessment committee

Corresponding author: No

Category: Journal of Alzheimer's Disease

Journal in the top 25%: No

No. of journals in the cat.: 272

- 7** Emanuele Torti; Raquel Leon; Marco La Salvia; Giordana Florimbi; Beatriz Martinez-Vega; Himar Fabelo; Samuel Ortega; Gustavo Marrero Callico; Francesco Leporati. Parallel Classification Pipelines for Skin Cancer Detection Exploiting Hyperspectral Imaging on Hybrid Systems. *Electronics*. 9 - 1503, pp. 1 - 21. Basel(Switzerland): MDPI, 13/09/2020. Available on-line at: <<https://www.mdpi.com/2079-9292/9/9/1503>>. ISSN 2079-9292

DOI: 10.3390/electronics9091503

Type of production: Scientific paper

Position of signature: 5

Format: Journal



Total no. authors: 9

Impact source: ISI

Impact index in year of publication: 2.412

Position of publication: 125

Degree of contribution: Author or co-author of article in journal with external admissions assessment committee

Corresponding author: No

Category: Science Edition - ENGINEERING, ELECTRICAL & ELECTRONIC

Journal in the top 25%: No

No. of journals in the cat.: 266

Works submitted to national or international conferences

- 1** **Title of the work:** Oxygen Saturation Measurement using Hyperspectral Imaging targeting Real-Time Monitoring
Name of the conference: Euromicro Conference on Digital System Design (DSD)
Type of event: Conference **Geographical area:** European Union
Type of participation: Participatory - oral communication
Corresponding author: Yes
City of event: Palermo, Italy
Date of event: 01/09/2021
End date: 03/09/2021
Organising entity: University of Palermo **Type of entity:** University
Type of contribution: Scientific paper
Beatriz Martínez-Vega; Raquel Leon; Himar Fabelo; Samuel Ortega; Gustavo M. Callico; David Suarez-Vega; Bernardino Clavo. En: IEEE. pp. 1 - 8. 13/10/2021. Available on-line at: <<https://ieeexplore.ieee.org/document/9556389>>. ISBN 978-1-6654-2703-6
DOI: 10.1109/DSD53832.2021.00078
- 2** **Title of the work:** Hyperspectral Imaging for Major Neurocognitive Disorder Detection in Plasma Samples
Name of the conference: XXXV Conference on Design of Circuits and Integrated Systems (DCIS2020)
Type of event: Conference **Geographical area:** Non EU International
Type of participation: Participatory - oral communication
Corresponding author: No
City of event: Segovia, Community of Madrid, Spain
Date of event: 18/11/2020
End date: 20/11/2020
Organising entity: Universidad Politécnica de Madrid **Type of entity:** University
City organizing entity: Madrid, Community of Madrid, Spain
Publication in conference proceedings: Yes
Type of contribution: Scientific paper
Raquel Leon; Beatriz Martínez-Vega; Himar Fabelo; Samuel Ortega; Gustavo M. Callicó; Francisco Balea-Fernández; Cristina Bilbao Sieyro. "2020 XXXV Conference on Design of Circuits and Integrated Systems (DCIS)". pp. 1 - 6. IEEE, 30/11/2020. Available on-line at: <<https://ieeexplore.ieee.org/document/9268625>>. ISSN 2640-5563, ISBN 978-1-7281-9132-4
DOI: 10.1109/DCIS51330.2020.9268625
- 3** **Title of the work:** Statistics-based Classification Approach for Hyperspectral Dermatologic Data Processing
Name of the conference: XXXV Conference on Design of Circuits and Integrated Systems (DCIS2020)
Type of event: Conference **Geographical area:** Non EU International
Type of participation: Participatory - oral communication
Corresponding author: Yes



City of event: Segovia, Community of Madrid, Spain

Date of event: 18/11/2020

End date: 20/11/2020

Organising entity: Universidad Politécnica de Madrid

Type of entity: University

City organizing entity: Madrid, Community of Madrid, Spain

Publication in conference proceedings: Yes

Type of contribution: Scientific paper

Beatriz Martínez-Vega; Ana D. Valle; Raquel Leon; Himar Fabelo; Samuel Ortega; Gustavo M. Callicó; Irene Castaño; Gregorio Carretero; Pablo Almeida; Aday García; Javier A. Hernández; Stig Uteng. "2020 XXXV Conference on Design of Circuits and Integrated Systems (DCIS)". pp. 1 - 6. IEEE, 30/11/2020. Available on-line at: <<https://ieeexplore.ieee.org/document/9268646>>. ISSN 2640-5563, ISBN 978-1-7281-9132-4

DOI: 10.1109/DCIS51330.2020.9268646

4 Title of the work: Dermatologic Hyperspectral Imaging System for Skin Cancer Diagnosis Assistance

Name of the conference: 34th conference on Design of Circuits and integrated Systems (DCIS)

Type of event: Conference

Corresponding author: No

City of event: Bilbao, Basque Country, Spain

Date of event: 20/11/2019

End date: 22/11/2019

Type of contribution: Scientific paper

Himar Fabelo; Veronica Melian; Beatriz Martinez Vega; Patricia Beltran; Samuel Ortega; Margarita Marrero; Gustavo Marrero Callico; Roberto Sarmiento; Irene Castaño; Gregorio Carretero; Pablo Almeida; Aday García; Javier Hernández.

Other achievements

Stays in public or private R&D centres

Entity: Innovation Center Computer Assisted Surgery

Faculty, institute or centre: Institute at the Faculty of Medicine

City of entity: Leipzig, Leipzig, Germany

Start-End date: 01/07/2021 - 20/12/2021

Duration: 5 months

Goals of the stay: Doctorate

Provable tasks: Evaluation of Preprocessing Methods on Independent Medical Hyperspectral Databases to Improve Analysis

Prizes, mentions and distinctions

1 Description: Reconocimiento a la Productividad Científica de Grupos de Investigación de la ULPGC

Awarding entity: Universidad de las Palmas de Gran Canaria **Type of entity:** University

City awarding entity: LAS PALMAS DE GRAN CANARIA, Spain

Conferral date: 12/01/2023

2 Description: V Concurso Cátedra Telefónica ULPGC

Awarding entity: Catedras Telefonica

City awarding entity: Las Palmas, Canary Islands, Spain



Conferral date: 31/05/2022

3 Description: Premios Extraordinarios de Fin de Título

Awarding entity: Universidad de las Palmas de Gran Canaria **Type of entity:** University

City awarding entity: LAS PALMAS DE GRAN CANARIA, Spain

Conferral date: 08/06/2021