CURRÍCULUM VÍTAE NORMALIZADO

Francisco Díaz Barrancas

GOBIERNO DE ESPAÑA
MINISTERIO DE CIENCIA E INNOVACIÓN

FECYT
FUNDACIÓN ESPAÑOLA PARA LA CIENCIA Y LA TECNOLOGÍA

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.

I received the B.S degree in computer engineer in 2017 and the M.S degree in computer technologies research in 2018, both from the University of Extremadura (UEx), Mérida, Spain. I got my PhD with CUM LAUDE distinction and international mention in research related to light and color management in real-time rendering of 3D scenarios in March 2022 at the Centro Universitario de Mérida, Spain under the supervision of **Dr. Pedro José Pardo Fernández**. Currently, I am working at the Justus-Liebig University under the supervision of **Prof. Karl Gegenfurtner** as a PostDoc Researcher in the ERC project "Color 3.0: An object-oriented approach to color", working on user perception and color constancy in virtual reality devices.

My research spans several areas of visual computing, in particular: hyperspectral images, color appearance and virtual reality, with a focus on applying perceptually-motivated solutions. The main objective of my research area is the improvement of the visual appearance in virtual reality devices through computer techniques.

GOBIERNO
DE ESPAÑA
MINISTERIO
DE CIENCIA
E INNOVACIÓN

FECYT
FUNDACIÓN ESPAÑOLA
PARA LA CIENCIA
Y LA TECNOLOGÍA

Francisco Díaz Barrancas

Surname(s):	**Díaz Barrancas**
Name:	**Francisco**
ORCID:	**0000-0002-4930-4780**
Date of birth:	**01/07/1995**
Gender:	**Male**
Nationality:	**Spain**
Country of birth:	**Spain**
Contact aut. region/reg.:	**Extremadura**
Personal web page:	**https://francisco-diaz-barrancas.github.io/**

Current professional situation

Employing entity: Justus-Liebig University   **Type of entity:** University
Professional category: PostDoc Researcher
Start date: 06/04/2022
Type of contract: Temporary employment contract   **Dedication regime:** Full time

Previous positions and activities

	Employing entity	Professional category	Start date
1	Universidad de Extremadura	Personal Científico e Investigador	18/01/2022
2	Universidad de Extremadura	Personal de Apoyo a la Investigación	01/10/2020
3	Universidad de Extremadura	Personal Científico e Investigador	19/10/2017

1   **Employing entity:** Universidad de Extremadura   **Type of entity:** University
   Professional category: Personal Científico e Investigador
   Start-End date: 18/01/2022 - 31/03/2022

2   **Employing entity:** Universidad de Extremadura   **Type of entity:** University
   Department: Expresión Gráfica, Centro Universitario de Mérida
   City employing entity: Mérida, Extremadura, Spain
   Professional category: Personal de Apoyo a la Investigación
   Start-End date: 01/10/2020 - 16/01/2021
   Type of contract: Temporary employment contract
   Dedication regime: Full time
   Field of management activity: University

3   **Employing entity:** Universidad de Extremadura   **Type of entity:** University
   Department: Ingeniería en sistemas informáticos y telemáticos, Centro Universitario de Mérida
   City employing entity: Merida, Extremadura, Spain
   Professional category: Personal Científico e Investigador

Email: frdiaz@unex.es
Start-End date: 19/10/2017 - 31/08/2020   **Duration:** 2 years - 10 months - 13 days
Type of contract: Temporary employment contract
Dedication regime: Full time
Primary (UNESCO code): 120317 - Informatics
Field of management activity: University

Education

University education

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

1 **University degree:** Doctorate
Name of qualification: Doctorado en Tecnologías Informáticas
Degree awarding entity: Universidad de Extremadura   **Type of entity:** University
Date of qualification: 24/03/2022
Average mark: Excellent

2 **University degree:** Higher degree
Name of qualification: Máster Universitario en Ingenierías y Arquitectura
Degree awarding entity: Universidad de Extremadura   **Type of entity:** University
Date of qualification: 20/06/2018
Average mark: Excellent

3 **University degree:** Graduado
Name of qualification: Grado en Ingeniería Informática en tecnologías de la información
City degree awarding entity: Mérida, Extremadura, Spain
Degree awarding entity: Universidad de Extremadura   **Type of entity:** University
Date of qualification: 22/06/2017
Average mark: Good

Specialised, lifelong, technical, professional and refresher training (other than formal academic and healthcare studies)

1 **Training title:** MENDELEY MÁS QUE UN GESTOR BIBLIOGRÁFICO
Awarding entity: Plan de formación de la UEX: SOFD
End date: 02/11/2021   **Duration in hours:** 6 hours

2 **Training title:** PERFILES DE AUTOR EN BASES DE DATOS CIENTÍFICAS
Awarding entity: Plan de formación de la UEX: SOFD
End date: 22/10/2021   **Duration in hours:** 12 hours

3 **Training title:** GESTIÓN DE DESCRIPTORES Y BÚSQUEDA AVANZADA EN BASES DE DATOS
Awarding entity: Plan de formación de la UEX: SOFD
End date: 21/10/2021   **Duration in hours:** 12 hours

4 **Training title:** PRÁCTICAS DE COMUNICACIÓN EN LA EXPOSICIÓN DE TRABAJOS CIENTÍFICOS
Awarding entity: Plan de formación de la UEX: SOFD
End date: 02/09/2021   **Duration in hours:** 20 hours

5   **Training title:** CREACIÓN DE VÍDEO-PRESENTACIÓNES PARA PARTICIPAR EN CONGRESOS CON MODALIDAD ONLINE Y PARA USO DIDÁCTICO
Awarding entity: Plan de formación de la UEX: SOFD
End date: 17/06/2021   **Duration in hours:** 15 hours

6   **Training title:** EXPOSICIÓN ORAL DE TRABAJOS ACADÉMICOS Y CIENTÍFICOS
Awarding entity: Plan de formación de la UEX: SOFD
End date: 31/05/2021   **Duration in hours:** 15 hours

7   **Training title:** CVN: INTERCAMBIANDO DATOS ENTRE PLATAFORMAS Y BASES DE DATOS
Awarding entity: Plan de formación de la UEX: SOFD   **Type of entity:** University
End date: 21/05/2021   **Duration in hours:** 25 hours

8   **Training title:** NORMATIVAS DE CONTRATACIÓN Y BOLSAS DE TRABAJO PDI LABORAL. SOLICITUD Y SU EVALUACIÓN
Awarding entity: Plan de formación de la UEX: SOFD
End date: 13/05/2021   **Duration in hours:** 10 hours

9   **Training title:** LearnEnglish Select Santander- Select Intermediate Level (B1)
Awarding entity: EMBAJADA DEL REINO UNIDO (BRITISH COUNCIL)
End date: 13/02/2021   **Duration in hours:** 25 hours

10   **Training title:** From Reality to Virtuality: The science and the art of creating VR experiences
Awarding entity: University of Oulu   **Type of entity:** University
End date: 15/06/2019   **Duration in hours:** 40 hours

11   **Type of training:** Course
Training title: Introducción al desarrollo de videojuegos con Unity
City awarding entity: Merida, Extremadura, Spain
Awarding entity: Universidad de Extremadura   **Type of entity:** University
End date: 03/05/2019   **Duration in hours:** 40 hours

12   **Training title:** eHealth: Tecnologías para la salud 2018
Awarding entity: Instituto internacional de investigación e innovación del envejecimiento   **Type of entity:** Healthcare Institutions
End date: 12/09/2018   **Duration in hours:** 15 hours

13   **Type of training:** Course
Training title: Curso de Big Data y Supercomputación: "Transformando datos en conocimiento"
City awarding entity: Cáceres, Extremadura, Spain
Awarding entity: Computaex
End date: 19/12/2016   **Duration in hours:** 23 hours

Language skills

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

Teaching experience

General teaching experience

Name of the course: Sistemas de Comunicación Multimedia
University degree: Graduado o Graduada en Ingeniería de Diseño Industrial y Desarrollo de Productos
Start date: 01/02/2020
End date: 14/05/2020
Entity: Centro Universitario de Mérida
Type of entity: University Centres and Structures and Associated Bodies

Faculty, institute or centre: Centro Universitario de Mérida

Scientific and technological experience

Research and development groups/teams

1   **Name of the group:** Gegenfurtner Lab
Aims of the group: Perception and color vision
Type of collaboration: Co-authorship of projects and their development
Affiliation entity: Justus-Liebig Universität
Start date: 06/04/2022

2   **Name of the group:** Grupo Orión
Aims of the group: Virtual reality, Extended reality, Color appearance
Type of collaboration: Co-authorship of projects and their development
Affiliation entity: Universidad de Extremadura
Type of entity: University
Start date: 19/10/2017
Duration: 4 years - 4 months - 13 days

Scientific or technological activities

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

1 **Name of the project:** Color 3.0: An object-oriented approach to color
Entity where project took place: Justus-Liebig Universität
City of entity: Gießen, Gießen, Germany
Name principal investigator (PI, Co-PI....): Karl Gegenfurtner
Start-End date: 01/09/2020 - 31/08/2025
Total amount: 2.497.787 €

2 **Name of the project:** Desarrollo e integración de mejoras en sistemas realidad extendida aplicadas a las prácticas clínicas
Degree of contribution: Researcher
Entity where project took place: Universidad de Extremadura   **Type of entity:** University
City of entity: Mérida, Extremadura, Spain
Name principal investigator (PI, Co-PI....): Pedro José Pardo Fernández
Nº of researchers: 9
Type of participation: Team member
Code according to the funding entity: IB20094
Start-End date: 17/06/2021 - 16/06/2024
Total amount: 127.292 €
Dedication regime: Full time

3 **Name of the project:** Aplicación de técnicas hiperespectrales y de realidad virtual a la medida del rendimiento de color de fuentes luminosas LED
Entity where project took place: Universidad de Extremadura   **Type of entity:** University
Name principal investigator (PI, Co-PI....): Pedro José Pardo
Nº of researchers: 6
Funding entity or bodies:
Consejería de Economía e Innovación Tecnológica   **Type of entity:** IB16004

Start-End date: 16/01/2018 - 08/11/2020
Total amount: 115.261,3 €

R&D non-competitive contracts, agreements or projects with public or private entities

Name of the project: PROYECTOS Y AYUDAS PLAN REGIONAL
Degree of contribution: Researcher
Name principal investigator (PI, Co-PI....): María Isabel Suero
Nº of researchers: 10
Funding entity or bodies:
Consejería de Economía e Innovación Tecnológica   **Type of entity:** GR18131

Start date: 29/05/2018
Total amount: 26.360,25 €

Scientific and technological activities

Scientific production

Publications, scientific and technical documents

1 Francisco Díaz Barrancas; Halina Cwierz; Pedro José Pardo. Real-Time Application of Computer Graphics Improvement Techniques Using Hyperspectral Textures in a Virtual Reality System. Electronics. 10 - 22, pp. 2852. MDPI, 19/11/2021.
Type of production: Scientific paper   **Format:** Journal
Corresponding author: Yes

2 Halina Cwierz; Francisco Díaz Barrancas; Julia Gil Llinás; Pedro José Pardo. On the Validity of Virtual Reality Applications for Professional Use: A Case Study on Color Vision Research and Diagnosis. IEEE Access. 9, pp. 138215 - 138224. IEEE, 06/10/2021.
Type of production: Scientific paper   **Format:** Journal
Corresponding author: Yes

3 Francisco Díaz Barrancas; Halina Carmen Cwierz; Pedro José Pardo; Ángel Luis Pérez; María Isabel Suero. Colour appearance in immersive three-dimensional virtual environments. Coloration Technology. 137, pp. 38 - 43. Wiley, 14/12/2020.
Type of production: Scientific paper   **Format:** Journal
Corresponding author: Yes

4 Francisco Díaz Barrancas; Halina Carmen Cwierz; Pedro José Pardo; Ángel Luis Pérez; María Isabel Suero. Spectral Color Management in Virtual Reality Scenes. Sensors. 20 - 19, pp. 5658. MDPI, 03/10/2020.
Type of production: Scientific paper   **Format:** Journal
Corresponding author: Yes

Works submitted to national or international conferences

1 **Title of the work:** A study of physical and perceived linearity in a virtual reality environment
Name of the conference: International Colour Association (AIC) Conference 2021
Corresponding author: Yes
City of event: Milán, Lombardia, Italy
Date of event: 01/09/2021
End date: 03/09/2021
Organising entity: International Colour Association
Francisco Díaz Barrancas; Halina Cwierz; Pedro José Pardo.

2 **Title of the work:** Color Constancy in virtual reality scenes. A first step toward a color appearance model in virtual reality
Name of the conference: International Colour Association (AIC) Conference 2021
Corresponding author: No
City of event: Milán, Lombardia, Italy
Date of event: 01/09/2021
End date: 03/09/2021

Organising entity: International Colour Association

Pedro José Pardo; Francisco Díaz Barrancas; Halina Cwierz.

3 **Title of the work:** Application of spectral computing technics for color vision testing using virtual reality devices

Name of the conference: Electronic Imaging

Type of event: Conference   **Geographical area:** Non EU International

Corresponding author: Yes

City of event: Burlingame, United States of America

Date of event: 26/01/2020

End date: 30/01/2020

Organising entity: Society for Imaging Science and Technology

Type of contribution: Scientific paper

Halina Carmen Cwierz; Francisco Díaz Barrancas; Pedro José Pardo; Ángel Luis Pérez; María Isabel Suero.

4 **Title of the work:** Visual fidelity improvement in virtual reality through spectral textures applied to lighting simulations

Name of the conference: Electronic Imaging

Type of event: Conference   **Geographical area:** Non EU International

Corresponding author: Yes

City of event: Burlingame, United States of America

Date of event: 26/01/2020

End date: 30/01/2020

Organising entity: Society for Imaging Science and Technology

Type of contribution: Scientific paper

Francisco Díaz Barrancas; Halina Carmen Cwierz; Pedro José Pardo; Ángel Luis Pérez; María Isabel Suero.

5 **Title of the work:** A virtual scene with conservation objects with different illuminants and colour management

Name of the conference: A conservation Carol: approcci interdisciplinari nell'ambito della conservazione dei beni culturali

Type of event: Conference   **Geographical area:** European Union

Corresponding author: Yes

City of event: Milano, Lombardia, Italy

Date of event: 20/12/2019

Organising entity: Università degli studi di Milano

Type of contribution: Scientific paper

Francisco Díaz Barrancas; Halina Carmen Cwierz; Pedro José Pardo; Ángel Luis Pérez; María Isabel Suero.

6 **Title of the work:** Aplicación de texturas hiperespectrales a objetos 3D en escenas de Realidad Virtual

Name of the conference: XII Congreso Nacional del Color

Type of event: Conference   **Geographical area:** National

Corresponding author: Yes

City of event: Linares, Andalusia, Spain

Date of event: 25/09/2019

End date: 27/09/2019

Organising entity: SOCIEDAD ESPAÑOLA DE OPTICA SEDO

Type of contribution: Scientific paper

Francisco Díaz Barrancas; Halina Carmen Cwierz; Pedro José Pardo; Ángel Luis Pérez; María Isabel Suero.

7 **Title of the work:** Cómo realizar una correcta gestión del color en sistemas de realidad virtual
Name of the conference: XII Congreso Nacional del Color
Type of event: Conference   **Geographical area:** National
City of event: Linares, Andalusia, Spain
Date of event: 25/09/2019
End date: 27/09/2019
Organising entity: SOCIEDAD ESPAÑOLA DE OPTICA SEDO
Type of contribution: Scientific paper
Halina Carmen Cwierz; Francisco Díaz Barrancas; Pedro José Pardo; Ángel Luis Pérez; María Isabel Suero.

8 **Title of the work:** Herramienta para la valoración de la capacidad de discriminación del color de observadores normales y defectivos mediante un test de ordenación de color, reproducido en un entorno de realidad virtual
Name of the conference: XII Congreso Nacional del Color
Type of event: Conference   **Geographical area:** National
Corresponding author: No
City of event: Linares, Andalusia, Spain
Date of event: 25/09/2019
End date: 27/09/2019
Organising entity: SOCIEDAD ESPAÑOLA DE OPTICA SEDO
Type of contribution: Scientific paper
Halina Carmen Cwierz; Francisco Díaz Barrancas; Pedro José Pardo; Ángel Luis Pérez; María Isabel Suero.

9 **Title of the work:** Reconstrucción de objetos 3D mediante técnicas SFM y obtención de texturas hiperespectrales
Name of the conference: XII Congreso Nacional del Color
Type of event: Conference   **Geographical area:** National
Corresponding author: Yes
City of event: Linares, Andalusia, Spain
Date of event: 25/09/2019
End date: 27/09/2019
Organising entity: SOCIEDAD ESPAÑOLA DE OPTICA SEDO
Type of contribution: Scientific paper
Francisco Díaz Barrancas; Halina Carmen Cwierz; Pedro José Pardo; Ángel Luis Pérez; María Isabel Suero.

10 **Title of the work:** Hyperspectral textures for a better colour reproduction in virtual reality
Name of the conference: 15th Conferenza del Colore
Type of event: Conference   **Geographical area:** European Union
Corresponding author: Yes
City of event: Macerata, Marche, Italy
Date of event: 05/09/2019
End date: 07/09/2019
Organising entity: Gruppo del Colore – Associazione Italiana Colore
Type of contribution: Scientific paper
Francisco Díaz Barrancas; Halina Carmen Cwierz; Pedro José Pardo; Ángel Luis Pérez; María Isabel Suero.

11 **Title of the work:** Improvement of realism sensation in virtual reality scenes applying spectral and colour management techniques
Name of the conference: The 25th Symposium of the International Colour Vision Society
Type of event: Conference   **Geographical area:** European Union
Corresponding author: Yes
City of event: Riga, Latvija, Latvia
Date of event: 05/07/2019
End date: 08/07/2019
Organising entity: International Colour Vision Society
Type of contribution: Scientific paper
Francisco Díaz Barrancas; Halina Cwierz; Pedro José Pardo; Ángel Luis Pérez; María Isabel Suero.

12 **Title of the work:** Validity of virtual-reality-based systems applied to lighting and colour rendering research
Name of the conference: The 25th Symposium of the International Colour Vision Society
Type of event: Conference   **Geographical area:** European Union
Corresponding author: No
City of event: Riga, Latvija, Latvia
Date of event: 05/07/2019
End date: 08/07/2019
Organising entity: International Colour Vision Society
Type of contribution: Scientific paper
Pedro José Pardo; Halina Cwierz; Francisco Díaz Barrancas; Ángel Luis Pérez; María Isabel Suero.

13 **Title of the work:** IMPROVING PROGRAMMING LEARNING WITH AUGMENTED REALITY AND GAMIFICATION
Name of the conference: EDULEARN 2019
Type of event: Conference   **Geographical area:** National
Corresponding author: No
City of event: Palma de Mallorca, Balearic Islands, Spain
Date of event: 01/07/2019
End date: 03/07/2019
Organising entity: IATED
Type of contribution: Scientific paper
Halina Cwierz; Francisco Díaz Barrancas; Pedro José Pardo; Juan Ignacio Guisado; Cristina Ruiz Palma.

14 **Title of the work:** Un análisis preliminar de nuevos modelos de mutación dirigida en algoritmos genéticos.
Name of the conference: XVIII Conferencia de la Asociación Española para la Inteligencia Artificial
Type of event: Conference   **Geographical area:** National
Corresponding author: No
City of event: Granada, Andalusia, Spain
Date of event: 23/10/2018
End date: 26/10/2018
Organising entity: Asociación Española para la Inteligencia Artificial
Type of contribution: Scientific paper
Borja Rodríguez Puerta; Francisco Díaz Barrancas; Francisco Chávez De la O; Francisco Fernández de Vega.

15 **Title of the work:** Colour Management in Virtual Reality applied to Lighting Simulations
Name of the conference: International Colour Association (AIC) Conference 2018
Type of event: Conference   **Geographical area:** European Union

Corresponding author: No
City of event: Lisboa, Lisboa, Portugal
Date of event: 25/09/2018
End date: 29/09/2018
Organising entity: International Colour Association
Type of contribution: Scientific paper
Halina Cwierz; Francisco Díaz Barrancas; Pedro José Pardo; Ángel Luis Pérez; María Isabel Suero.

16 **Title of the work:** Is it possible to apply colour management technics in Virtual Reality devices?
Name of the conference: 14th Conferenza del Colore
Type of event: Conference **Geographical area:** European Union
Corresponding author: Yes
City of event: Firenza, Toscana, Italy
Date of event: 11/09/2018
End date: 12/09/2018
Organising entity: Grupo del Color- Asociación **Type of entity:** Associations and Groups
Italiana del Color
Type of contribution: Scientific paper
Francisco Díaz Barrancas; Pedro José Pardo; María Isabel Suero; Ángel Luis Pérez.

Other dissemination activities

1 **Title of the work:** III Semana de la ciencia y la Tecnología en Extremadura
Name of the event: Reto de Ada Byron
Type of event: Fairs and exhibitions
City of event: Mérida, Extremadura, Spain
Date of event: 15/11/2019
Organising entity: Servicio de difusión de la cultura científica

2 **Title of the work:** European Researcher ´Night
Name of the event: Noche de los investigadores 2019
Type of event: Fairs and exhibitions
City of event: Mérida, Extremadura, Spain
Date of event: 27/09/2019
Organising entity: Universidad de Extremadura **Type of entity:** University

3 **Title of the work:** European Researchers ´ Night
Name of the event: Noche de los investigadores 2018
Type of event: Fairs and exhibitions
City of event: Mérida, Extremadura, Spain
Date of event: 12/09/2018
Organising entity: Universidad de Extremadura **Type of entity:** University

4 **Title of the work:** European Researchers´Night
Name of the event: Noche de los investigadores 2015
Type of event: Fairs and exhibitions
City of event: Mérida, Extremadura, Spain
Date of event: 11/11/2015
Organising entity: Universidad de Extremadura **Type of entity:** University

R&D management and participation in scientific committees

Evaluation and revision of R&D projects and articles

Name of the activity: Review
Performed tasks: Review article
Entity where activity was carried out: Journal of   **Type of entity:** Associations and Groups
the Optical Society of America A
Start date: 27/01/2021

Other achievements

Stays in public or private R&D centres

1   **Entity:** Università Degli Studi di Milano
Faculty, institute or centre: Dipartimento di Informatica
City of entity: Milano, Lombardia, Italy
Start-End date: 01/10/2019 - 20/12/2019   **Duration:** 3 months
Goals of the stay: Doctorate
Provable tasks: Research stay

2   **Entity:** University of Granada   **Type of entity:** University
Faculty, institute or centre: Ciencias de la Educación
City of entity: Granada, Andalusia, Spain
Start-End date: 01/07/2017 - 31/07/2017   **Duration:** 1 month
Goals of the stay: Guest
Provable tasks: Research stay

Prizes, mentions and distinctions

1   **Description:** Programa Santader Yuzz 'Jóvenes con ideas'
Awarding entity: BANCO SANTANDER, S.A.
City awarding entity: Almendralejo, Extremadura, Spain
Conferral date: 20/06/2020

2   **Description:** Best Poster Award 2018
Awarding entity: Gruppo del Colore- Associazione   **Type of entity:** Associations and Groups
Italiana Colore
City awarding entity: Firenza, Toscana, Italy
Conferral date: 12/09/2018

3   **Description:** III Convocatoria Premios Investigar en Ciencias
Awarding entity: Universidad de Extremadura   **Type of entity:** University
City awarding entity: Badajoz, Extremadura, Spain
Conferral date: 19/02/2013