



Francisco Díaz Barrancas

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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.

Francisco Díaz-Barrancas 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. He is currently working toward the Ph.D. degree in the visual appearance in virtual reality devices.

He is a Research Assistant at the University of Extremadura (UEX) in Spain. He has been involved in several projects related to application of hyperspectral and virtual reality techniques to measure the color performance of LED light sources.



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**
City of birth: **Badajoz**
Contact aut. region/reg.: **Extremadura**
Email: **frdiaz@unex.es**
Personal web page: **<https://francisco-diaz-barrancas.github.io/>**

Current professional situation

Employing entity: Universidad de Extremadura **Type of entity:** University
Department: Expresión Gráfica, Centro Universitario de Mérida
Professional category: Personal de Apoyo a la Investigación
City employing entity: Merida, Extremadura, Spain
Email: frdiaz@unex.es
Start date: 01/10/2020
Type of contract: Temporary employment contract **Dedication regime:** Full time
Field of management activity: University

Previous positions and activities

	Employing entity	Professional category	Start date
	Universidad de Extremadura	Personal Científico e Investigador	19/10/2017

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: 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

2 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: 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

2 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

3 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

4 Training title: CREACIÓN DE VÍDEO-PRESENTACIONES 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

5 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



- 6 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
- 7 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
- 8 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
- 9 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
- 10 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
- 11 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
- 12 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

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

Scientific or technological activities

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

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: Firenze, Toscana, Italy

Date of event: 11/09/2018

End date: 12/09/2018

Organising entity: Grupo del Color- Asociación Italiana del Color

Type of entity: Associations and Groups

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 the Optical Society of America A

Type of entity: Associations and Groups

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 Santander 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 Italiana Colore **Type of entity:** Associations and Groups
City awarding entity: Firenze, 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