

MSCA-PF: Joint application in the Color Imaging Lab at the University of Granada

Prof. Juan Luis Nieves from the Department of Optics at the **University of Granada (Spain)**, welcomes postdoctoral candidates interested in applying for a Marie Skłodowska-Curie Postdoctoral Fellowships (MSCA-PF) in 2021 at this University.

Project: Computational, psychophysical and functional brain networks guiding the estimation of relevant colors that describe the color palette of paintings

In a previous research project we heuristically introduced the so-called “relevant colors” in a painting to describe the number of colors that would stand out for an observer when just glancing at a painting. These relevant colors would characterize the color palette of a scene as being obtained on the basis of the discernible colors that were colorimetrically different within the scene. We computationally obtained a number of 18 relevant colors, which were representative on average of the color content of every image. We increased the dimensions of the cubes in which we divide the CIELAB color space, and we established a dimension while also setting as the parameter the minimum threshold of colors in each cube, i.e., the minimum percentage of colors compared to the total that should be within the cube.

The purpose of this work is to apply different decision strategies (i.e. from a psychophysical, computational and neurophysiological point of view) to estimate the relevant colors describing a painting and to analyze possible functional brain networks guiding those strategies. Linear Support Vector Machine (SVM), Fuzzy Logic and/or other related algorithms could be implemented for both classification and regression problems. So different strategies will be analyzed to improve the way we have taken the division of the space into regions in every CIELAB direction. This research project will focus also on how to connect those approaches with a subjective determination of the relevant colors found in different paintings. Besides the relevant colors characterizing a painting could trigger changes in brain activity which could be captured using electroencephalography (EEG). Proper and public paintings image-databases will be used to test and run all experiments.

Research Area: Information Science and Engineering (ENG); Life Sciences (LIFE); Physics (PHY)

For a correct evaluation of your candidature, please send the documents below to **Prof. Juan Luis Nieves Gómez** (jnieves@ugr.es):

- CV
- Letter of recommendation (optional)

Deadline: 31/08/2021 12:00 - Europe/Brussels

Full info at <https://euraxess.ec.europa.eu/jobs/hosting/msca-pf-joint-application-university-granada-department-optics>

Please note that applicants must comply with the Mobility Rule (more information about the 2020 call: <http://sl.ugr.es/0aNV>, the 2021 call is not yet open).

Prof. Juan Luis Nieves

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