

Se busca candidato/a para solicitar beca FPU para la realización de tesis doctoral en el Departamento de Óptica (Color Imaging Lab), Facultad de Ciencias, Universidad de Granada

Dirigido a: Licenciados en Físicas, Telecomunicaciones, Ingeniería Electrónica y afines. Se valorarán especialmente aquellos expedientes de nota media igual o superior a 2.5

Duración: 4 años

Palabras clave: spectral devices, digital imaging, multispectral, sensors, identification, high dynamic range, design, optimization, urban scenes, prototype

Tema del proyecto:

The research project tackles the design and optimization of an imaging portable device that from the captured digital images allows the identification of singular elements of urban scenes, one of the more active topics in the computer vision field. The multispectral device, with few sensors, will be able capture high dynamic range images of urban scenes for a subsequent identification of singular elements in these scenes (buildings, streets, roads, persons, animals, plants, vehicles, sky, etc.) at each pixel of the image and independently of the illumination over the scene (natural and/or artificial). The imaging device will have more than three sensors, some of them with sensitivity on the near infrared spectral range, and its design will rely on color constancy algorithms that make possible to obtain illuminant invariant features, on spectral estimation algorithms and on low cost electronic devices.

The main aims of the project are the measurement of spectral reflectances of singular objects in the visible and near infrared ranges; the measurement of the spectral power distribution of typical illumination, natural and artificial, on urban scenes; the development and optimization of new color constancy algorithms at a pixel to obtain image features invariant to the illuminant, the use of techniques and/or algorithms to get high dynamic range images; the adaptation of illumination and reflectance spectral estimation algorithms for a later singular element identification; the optimal design of a multispectral and portable imaging device for the identification of singular elements on urban scenes.

Interesados contactar con:

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