Title (en)
SYSTEM AND METHOD FOR OBJECT RECOGNITION USING 3D MAPPING AND MODELING OF LIGHT

Title (de)
SYSTEM UND VERFAHREN ZUR OBJEKTERKENNUNG MITTELS DREIDIMENSIONALER ABBILDUNG UND MODELLIERUNG VON LICHT

Title (fr)
SYSTÈME ET PROCÉDÉ DE RECONNAISSANCE D'OBJET À L'AIDE D'UN MAPPAGE ET D'UNE MODÉLISATION 3D DE LA LUMIÈRE

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Abstract (en)
[origin: WO2020245444A1] The present invention refers to a method and a system for object recognition via a computer vision application, wherein at least one object (110) to be recognized is illuminated by at least one light source (121, 122) having light source specific radiance values, and radiance data of a scene (130) including the object are measured when the scene (130) is illuminated by the light source (121, 122). Further the scene is mapped by a scene mapping tool (150) rendering at least a partial 3D map of the scene (130). The data received from the scene mapping tool (150) are analysed and merged with the light source specific radiance values, and, based thereon, radiance of light incident at points in the scene (130), particularly at the at least one object (110), are calculated and combined with the measured radiance of light returned to the sensor (140) from points in the scene (130), particularly from the at least one object (110), thus forming a model of light spectral distribution and intensity at the at least one object (110) in the scene (130). An object specific luminescence and/or reflectance spectral pattern of the at least one object is extracted out of the model of light spectral distribution and intensity and matched with luminescence and/or reflectance spectral patterns stored in a data storage unit (160). Thus, a best matching luminescence and/or reflectance spectral pattern is identified.

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