Researchers design software to detect changes in colour vision

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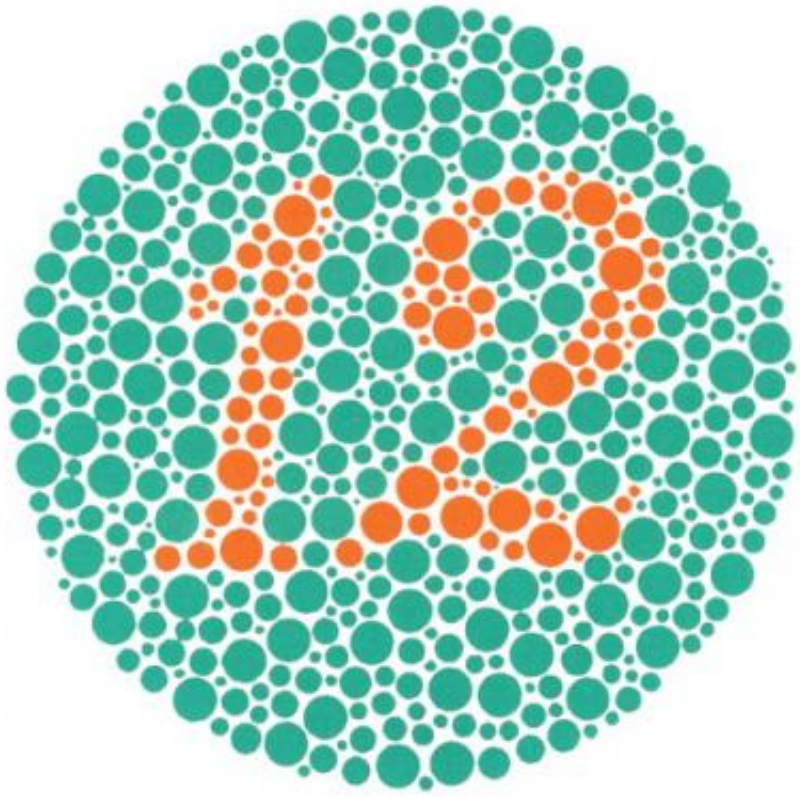

Image from Ishihara test used for diagnosis and classification of changes in colour vision, such as colour blindness.

Researchers at the University of Alicante have developed new software that will interpret the vision of people affected by alterations in colour vision.

The technology, developed by the UA Research Group in Optics and Visual Perception, in collaboration with researchers from the Vision Group at the University of Valencia, is applicable in a variety of sectors, for example, graphic design, the toy industry, accessibility, recruitment, human resources, and the field of optometry.

Colour perception can be key in fields as diverse as science, industry and leisure. In industry, there are sectors where the control of colour reproduction is basic as well as the proper viewing by users. "We can quote, for example, the design of video games, websites, paintings, books, educational, quality control in food and manufactured goods, etc.. Also, there are many occupations where professionals must possess good colour vision, even in some cases is a given. For example, airline pilots, fire fighters, police, mechanics, and in general any profession where they work with colour codes", Professor Dolores de Fez Saiz, head of the Research Group in Optics and Visual Perception explains.

"The range of the colours perceived by a person with impaired vision in colour is smaller than in the case of a normal subject, so it may happen that different objects in a scene look the same and can not be distinguished from each other. A proper design of the original colour range can avoid these problems, because although the subject with problems in colour vision does not perceive the colours properly, they will have information to distinguish them as different and therefore belonging to different objects, "said Dolores Fez.

The software has been developed to simulate the perception of a subject with different alterations of colour vision. "For this, it is only necessary to have a digital image or a video file and select one of the three types of

colour vision impairment. It also allows expert users to select different models of colour vision, adaptation conditions and output formats. In this way, we know if a particular scene can be interpreted correctly when viewed by the subject who has the problem, or if you lose some information", Dolores de Fez adds.

The technology has been tested in real conditions and can be customized according to the needs of the company or a particular disorder. It also can be used as a preliminary stage in the design of a product to the target customer with an alteration in colour perception to interpret correctly. Use of the software is simple and one does not need to be an expert in optics.

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