Visual and Physiological Optics: Optical Design, Image Processing and Machine Learning Algorithms

Guest Editor:

Dr. Francisco Javier Ávila Gómez

Departamento de Fisica Aplicada, Facultad de Ciencias, Universidad de Zaragoza, 50009 Zaragoza, Spain

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Message from the Guest Editor

The visual function is the neural processing of the spatiotemporal information that occurs at the retina. Then, a decoding of the visual information requires both good retinal image quality as an optical instrument and good visual perception processes.

Therefore, the assessment of the visual function must be carried-out in terms of pure optical quality measurements and psychophysical approaches. Whereas optical assessment does not require a patient response, the visual perception must be evaluated via interacting with the subject.

On the other hand, the assessment of the ocular structures needs high-resolution and high-speed acquisition imaging systems that usually require image processing algorithms to first improve the spatiotemporal information and then to extract semantic information from the clinical images. It is a constant challenge to develop optimized imaging instruments that are complemented with machine learning algorithms.

This Special Issue involving the optics of the eye, psychophysical aspects of the visual perception, new optical designs and the development of algorithms for image processing in visual and physiological optics.

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Special Issue

Editor-in-Chief

Prof. Dr. Raimondo Schettini
Department of Informatics,
Systems and Communication,
University of Milano-Bicocca,
viale Sarca, 336, 20126 Milan, Italy

Message from the Editor-in-Chief

The imaging term, specific with journal, is to be considered in its broadest sense. Image processing, image understanding and computer vision are all terms related to imaging acquisition, its processing and the extraction of relevant information from the scene to obtain the underlying knowledge. All tasks related to the above items are oriented toward specific applications in a broad range of areas and topics. The *Journal of Imaging* is conceived as an efficient vehicle in the scientific community for the communication and transmission of the progress and research results in the topics covered.

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