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Symmetry in Vision II

Guest Editors:

Dr. Bernard Tiddeman
Department of Computer Science, Aberystwyth University, Reception, Penglais, Aberystwyth, Ceredigion SY23 3FL, UK

Dr. D. Michael Burt
Department of Psychology, Durham University, South Road, Durham DH1 3LE, UK

Deadline for manuscript submissions:
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Message from the Guest Editors

Dear Colleagues,

Symmetry plays a central role in both natural and artificial vision systems. It is an important cue to biological fitness, so detecting symmetry, even in the presence of out-of-plane rotations, is a useful adaptive trait. Biological visual processing shows a degree of lateralization rather than the two hemispheres processing information in exactly the same manner, balancing the cost of maintaining duplicate and redundant visual processing in both hemispheres against the gains of the differential specialization. Understanding the pattern processing abilities of the right and left hemispheres could lead to improved understanding of the function of symmetry in nature. Measurement of (a)symmetry is important in a number of domains including aesthetics, biometrics, health, biology research or manufacturing quality control. Exploiting symmetry can help to make the training or application of vision systems, such as deep convolutional neural networks, more efficient and the resulting systems more compact. This Special Issue is devoted to cutting edge studies on how symmetry is, or can be, measured and exploited by biological and artificial visual systems.

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Editor-in-Chief

Prof. Dr. Sergei D. Odintsov
1. Institució Catalana de Recerca i Estudis Avançats (ICREA), Passeig Luis Companys, 23, 08010 Barcelona, Spain
2. Institute of Space Sciences (ICE-CSIC), C. Can Magrans s/n, 08193 Barcelona, Spain

Message from the Editor-in-Chief

Symmetry is ultimately the most important concept in natural sciences. It is not surprising then that very basic and fundamental research achievements are related to symmetry. For instance, the Nobel Prize in Physics 1979 (Glashow, Salam, Weinberg) was received for a unified symmetry description of electromagnetic and weak interactions, while the Nobel Prize in Physics 2008 (Nambu, Kobayashi, Maskawa) was received for the discovery of the mechanism of spontaneous breaking of symmetry, including CP symmetry. Our journal is named *Symmetry* and it manifests its fundamental role in nature.

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Symmetry Editorial Office
MDPI, St. Alban-Anlage 66
4052 Basel, Switzerland

Tel: +41 61 683 77 34
www.mdpi.com

mdpi.com/journal/symmetry
symmetry@mdpi.com
𝕏@Symmetry_MDPI