

Preface

Beyond the Sense of Sight



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The sense of sight is the most sophisticated way to visualize objects. Our brain analyzes their form, color, depth and movement based on signals sent from the retina, and produces 3-D virtual images of the object which we are looking at. As long as the object is located not very far from us, its distance is so well retrieved that we can even catch it simply by reaching out our hand. Accordingly, we tend to forget, in our daily life, that what we see is an image created by our brain.

Recent developments in physiology have revealed that the process by which we see is similar to solving an inverse problem with many images stored in the brain. In our dreams we visualize images without light. We therefore understand that the brain has memories of various kinds of images.

From the technical view point, the sense of sight is the greatest invention to visualize the outside world. It is crucial for not only humans, but also for almost all animals to survive on the Earth. However, it is only we humans who are not satisfied with images of the outside world provided by the sense of sight.

We find in the history of science many examples of how new technology of visualization has contributed to expanding our knowledge of nature. In this sense natural science may be regarded as an extension of the sense of sight. We publish this journal to enhance the progress of the technology of visualization which enables us to perceive invisible worlds. As a member of the editorial board, I sincerely hope that many papers from a variety of research fields will be submitted to this unique journal on visualization.

Managing Editor

Ryuji Kimura

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