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BIOLOGICAL SCIENCES

New approaches to 3D vision

Discussion meeting issue organized and edited by Paul Linton, Michael Morgan, Jenny Read, Dhanraj Vishwanath, Sarah Creem-Regehr and Fulvio Domini

About this issue

New approaches to 3D vision are enabling new advances in artificial intelligence and autonomous vehicles, a better understanding of animal navigation, and new insights into human perception in virtual and augmented reality. Traditionally, it's thought that 3D vision relies on recreating an accurate 3D model of the world. But the new approaches to 3D vision explored in this volume challenge this assumption. Instead, they investigate the possibility that computer vision, animal navigation, and human vision can rely on partial or distorted models, or no model at all. This theme issue also highlights the implications for artificial intelligence, autonomous vehicles, human perception in virtual and augmented reality, and the treatment of visual disorders, all of which are explored by individual articles.

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