

<<视觉科学>>

图书基本信息

书名：<<视觉科学>>

13位ISBN编号：9787312022197

10位ISBN编号：7312022197

出版时间：2009-5-1

出版时间：中国科学技术大学出版社

作者：吕忠林（主编）

页数：530

版权说明：本站所提供下载的PDF图书仅提供预览和简介，请支持正版图书。

更多资源请访问：<http://www.tushu007.com>

<<视觉科学>>

内容概要

本书收纳了中科大校友的25篇关于视觉科学的代表性文章。

书的内容主要分为两大部分： ，视觉神经科学； ，视觉感知与认知。

其中，第一部分中的 A部分（皮层前的处理过程）总共包含六章，分别涉及光感受器退化疾病的恢复、视皮层-顶盖系统的改变、视网膜神经节细胞与外膝体细胞的感受野特性以及视皮层对外膝体的反馈作用； B部分（皮层中的处理过程）用九章的篇幅涵盖了视皮层对图像和运动的处理、视皮层中视空间的映射和皮层反应特性的关系、注意的作用、知觉学习以及衰老对视皮层处理的影响等内容；

C部分（眼动系统）中的三章内容重点介绍了眼动神经元的反应特性和眼动指令信号的可靠性。

第二部分包括七章，介绍了基本的视觉感知过程，如早期视觉通路中的分辨能力、对距离的感知、对等亮度条件下彩色运动图形的感知、对拓扑结构的感知以及特征分类等。

此外，还涉及计算视觉、视觉工作记忆和蜜蜂的决策制定等主题。

书籍目录

Preface to the USTC Alumni's Series
The History and Current Status of Vision Research at USTC
Preface
Section
Visual Neurosciences
Pre-cortical Processing
Chapter 1 Rapid BDNF-induced Retrograde Synaptic Modification in A Developing Retinotectal System
Chapter 2 Ectopic Expression of A Microbial-Type Rhodopsin Restores Visual Responses in Mice with Photoreceptor Degeneration
Chapter 3 Organized Arrangement of Orientation-Sensitive Relay Cells in the Cat's Dorsal Lateral Geniculate Nucleus
Chapter 4 The Nucleus Isthmi and Dual Modulation of the Receptive Field of Tectal Neurons in Non-mammals
Chapter 5 Direct Visualization of the Dendritic and Receptive Fields of Directionally Selective Retinal Ganglion Cells
Chapter 6 Functional Alignment of Feedback Effects from Visual Cortex to Thalamus
Chapter 7 Perceptual Learning and Top Down Influences in Primary Visual Cortex
Chapter 8 A Processing Stream in Mammalian Visual Cortex Neurons for Non-Fourier Responses
Chapter 9 GABA and Its Agonists Improved Visual Cortical Function in Senescent Monkeys
Chapter 10 Pattern and Component Motion Selectivity in Cortical Area PMLS of The Cat
Chapter 11 Feature-based Attention Modulates Orientation-selective Responses in Human Visual Cortex
Chapter 12 Filling-in of Visual Phantoms in The Human Brain
Chapter 13 Categorization Training Results in Shape- and Category- Selective Human Neural Plasticity
Chapter 14 Reversible Blockade of Experience-dependent Plasticity by Calcineurin in Mouse Visual Cortex
Chapter 15 The Coordinated Mapping of Visual Space and Response Features in Visual Cortex
The Ocular-motor System
Chapter 16 Characteristics of Near Response Cells Projecting to the Oculomotor Nucleus
Chapter 17 Premotor Commands Encode Monocular Eye Movements
Chapter 18 Reliability of Oculomotor Command Signals Carried by Individual Neurons
Section
Visual Perception & Cognition
Chapter 19 Orientation-selective Adaptation and Tilt After-effect From Invisible Patterns
Chapter 20 Perceiving Distance Accurately by A Directional Process of Integrating Ground Information
Chapter 21 Topological Structure in Visual Perception
Chapter 22 The Mechanism of Isoluminant Chromatic Motion Perception
Chapter 23 Primal Sketch: Integrating Structure and Texture
Chapter 24 Parallel and Competitive Processes in Hierarchical Analysis: Perceptual Grouping and Encoding of Closure
Chapter 25 Visual Working Memory in Decision Making by Honey Bees

章节摘录

These authors find a preponderance of LGNd cells preferring horizontal and vertical stimuli and suggest that cortical afferents are involved in the generation of LGNd orientation sensitivity (see also Daniels et al. , 1977) . Other authors report that the orientation biases of LGNd relay cells strictly reflect those of their retinal afferents (Soodak et al. , 1987) . These authors favor the idea that the orientation sensitivity of LGNd relay cells originates in the retina and reflects the anatomically generated (Leventhal and Schall , 1983) , linear , orientation-sensitive response (Levick and Thibos , 1982) of the retinal ganglion cells providing their afferents. The present study is arguably the most exhaustive to date. We believe that some of the disagreements described above are more apparent than real and may have resulted because previous studies included only relatively small samples of cells and , thus , differences in laminar location , eccentricity , polar angle , cell type could not be adequately controlled. For example , our findings that relay cells preferring different orientations are clustered and that radial and tangential orientations are overrepresented makes claims regarding the overall distribution of preferred orientations based upon small samples of cells especially hard to interpret. For example , if cells are recorded mainly from regions of the LGNd subserving the horizontal and vertical meridians , then an apparent preponderance of these orientations should result. Our finding that the radial bias is strongest in regions of the LGNd subserving the horizontal meridian further complicates matters. It should be noted that our results are generally consistent with the idea that the orientation-sensitive response of most LGNd cells is a direct reflection of their retinal inputs (Soodak et al. , 1987) . Evidence for this stems from our finding that the overall distributions of the orientation biases of LGNd cells are similar to those reported previously for retinal ganglion cells (Levick and Thibos , 1982; Leventhal and Schall , 1983) and that the receptive fields of most of the cells we studied were consistent with the model proposed by Soodak et al. (1987) . Our results do not support the idea (Vidyasagar and Urbas , 1982; Vidyasagar , 1984) that LGNd relay cells are much more orientation sensitive than their retinal inputs. However , it should be noted that some of the most orientation-sensitive cells we studied exhibited "butterfly-shaped" orientation tuning curves even at relatively low spatial frequencies. A number

<<视觉科学>>

编辑推荐

《中国科学技术大学校友文库》之《视觉科学》一书主要收纳了中科大校友的25篇关于视觉科学的代表性文章。

书的内容主要分为两大部分：视觉神经科学；视觉感知与认知。

《Vision Science (视觉科学) (全英文)》适合从事相关研究工作的人员参考阅读。

版权说明

本站所提供下载的PDF图书仅提供预览和简介，请支持正版图书。

更多资源请访问:<http://www.tushu007.com>