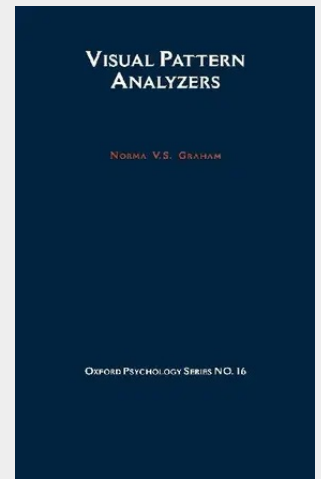


Graham

Visual Pattern Analyzers

This book looks at lower level visual processing, emphasizing psychophysical experiments which measure the detection and identification of near-threshold patterns and the mathematical models used to draw inferences from experimental results. Neurophysiological and psychophysical evidence is compared and contrasted, while introductory material on psychophysical methods, signal detection theory, and the mathematics of Fourier analysis ensure that the title is accessible to anyone interested in this field. Also included are lists of studies about analysers and parametric sensitivity on various pattern-vision dimensions.

The visual system must extract from the light that falls on the retina meaningful information about what is where in our environment. At an early stage it analyzes the incoming sensory data along many dimensions of pattern vision, e.g. spatial frequency, orientation, velocity, eye-of-origin. Visual Pattern Analyzers provides a definitive account of current knowledge about this stage of visual processing. Nowhere else can such a comprehensive summary of the lower level pattern analyzers be found. The book's emphasis is on psychophysical experiments measuring the detection and identification of near-threshold patterns -- and the mathematical models, such as multidimensional signal-detection theory, used to draw inferences from such experimental results -- but neurophysiological evidence is presented and compared critically to the psychophysical evidence. Introductory material on psychophysical methods, signal detection theory, and the mathematics of Fourier analysis is given in order to make the book more accessible to all who are interested in the lower or higher levels of visual perception. This volume will be of great value to researchers and graduate students in the fields of vision and perception. Within the scientific community there is wide interest in the visual system, and the book will be of use to investigators in many fields, including psychophysics, neuroscience, ophthalmology and optics, computer science, and cognitive and experimental psychology.



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