1. Record Nr. UNINA9911015634903321

Autore	Mancas Matei
Titolo	From Human Attention to Computational Attention : A Multidisciplinary Approach / / edited by Matei Mancas, Vincent P. Ferrera, Antoine Coutrot
Pubbl/distr/stampa	Cham : , : Springer Nature Switzerland : , : Imprint : Springer, , 2025
ISBN	3-031-84300-2
Edizione	[2nd ed. 2025.]
Descrizione fisica	1 online resource (409 pages)
Altri autori (Persone)	FerreraVincent P CoutrotAntoine
Disciplina	153.7/33
Soggetti	Neurosciences Computer vision Signal processing Artificial intelligence Computational neuroscience Neuroscience Computer Vision Signal, Speech and Image Processing Artificial Intelligence Computational Neuroscience
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	1 Why modeling attention in computers?, M. Mancas, V. Ferrera, N. Riche -- 2 What is attention?, M. Mancas -- 3 How to measure attention?, M. Mancas, V. Ferrera -- 4 Where: Human attention networks and their dysfunctions after brain damage, T. Seidel Malkinson, P. Bartolomeo -- 5 Attention and Signal Detection: A Practical Guide, V. Ferrera -- 6 Effects of Attention in Visual Cortex: Linking Single Neuron Physiology to Visual Detection and Discrimination, V. Ferrera -- 7 Modeling attention in engineering, M. Mancas -- 8 Bottom-Up Visual Attention for Still Images: a Global View, F. Stentiford -- 9 Bottom-up saliency models for still images: a practical review, N. Riche and M. Mancas -- 10 Bottom-up saliency

models for videos: a practical review, N. Riche and M. Mancas -- 11 Databases for saliency models evaluation, N. Riche -- 12 Metrics for saliency models validation, N. Riche -- 13 Study of parameters affecting visual saliency assessment, N. Riche -- 14 Saliency models evaluation, N. Riche -- 15 Object-based Attention: cognitive and computational perspectives, A. Belardinelli -- 16 Multimodal saliency models for videos, Antoine Coutrot, Nathalie Guyader -- 17 Towards 3D visual saliency modelling, J. Leroy, N. Riche -- 18 Applications of saliency models, M. Mancas, O. Le Meur -- 19 Attentive Content-Based Image Retrieval, D. Awad, V. Courboulay, A. Revel -- 20 Saliency and Attention for Video Quality Assessment, D. Culibrk -- 21 Attentive Robots, S. Frintrop -- 22 Attention modeling: what are the next steps?, M. Mancas, V. Ferrera, N. Riche -- Index.

Sommario/riassunto

The new edition of this popular book introduces the study of attention, focusing on attention modeling, and addressing such themes as saliency models, signal detection, and different types of signals, including real-life applications. The first edition was written at a moment when the Deep Learning Neural Network (DNNs) techniques were just at their beginnings in terms of attention. Deep learning has recently become a key factor in attention prediction on images and video, and attention mechanisms have become key factors in deep learning models. The second edition tackles the arrival of DNNs for attention computing in images and video, and also discusses the attention mechanisms within DNNs (attention modules, transformers, grad-cam-based saliency maps, etc.). From Human Attention to Computational Attention 2nd Edition also explores the parallels between the brain structures and the DNN architectures to reveal how biomimetics can improve the model designs. The book is truly multi-disciplinary, collating work from psychology, neuroscience, engineering, and computer science.