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Autore	Wang Xiaochun <1954->
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Soggetti	Computer vision Data mining Image processing - Digital techniques Machine learning Pattern recognition systems Computer science Computer Vision Data Mining and Knowledge Discovery Computer Imaging, Vision, Pattern Recognition and Graphics Machine Learning Automated Pattern Recognition Theory and Algorithms for Application Domains Visió per ordinador Mineria de dades Aprenentatge automàtic Processament digital d'imatges Reconeixement de formes (Informàtica) Llibres electrònics
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Nota di contenuto	Chapter 1 Introduction -- Chapter 2 Mathematical Preliminaries for Video Anomaly Detection Techniques -- Chapter 3 Probability Based Video Anomaly Detection Approaches -- Chapter 4 k-Nearest Neighbor Based Video Anomaly Detection Approaches -- Chapter 5 Gaussian Mixture Model Based Video Anomaly Detection.

Sommario/riassunto

Anomaly detection in video surveillance stands at the core of numerous real-world applications that have broad impact and generate significant academic and industrial value. The key advantage of writing the book at this point in time is that the vast amount of work done by computer scientists over the last few decades has remained largely untouched by a formal book on the subject, although these techniques significantly advance existing methods of image and video analysis and understanding by taking advantage of anomaly detection in the data mining community and visual analysis in the computer vision community. The proposed book provides a comprehensive coverage of the advances in video based anomaly detection, including topics such as the theories of anomaly detection and machine perception for the functional analysis of abnormal events in general, the identification of abnormal behaviour and crowd abnormal behaviour in particular, the current understanding of computer vision development, and the application of this present understanding towards improving video-based anomaly detection in theory and coding with OpenCV. The book also provides a perspective on deep learning on human action recognition and behaviour analysis, laying the groundwork for future advances in these areas. Overall, the chapters of this book have been carefully organized with extensive bibliographic notes attached to each chapter. One of the goals is to provide the first systematic and comprehensive description of the range of data-driven solutions currently being developed up to date for such purposes. Another is to serve a dual purpose so that students and practitioners can use it as a textbook while researchers can use it as a reference book. A final goal is to provide a comprehensive exposition of the topic of anomaly detection in video media from multiple points of view.