



This text reviews the field of digital image processing from the different perspectives offered by the separate domains of signal processing and pattern recognition. The book describes a rich array of applications, representing the latest trends in industry and academic research. To inspire further interest in the field, a selection of worked-out numerical problems is also included in the text. The content is presented in an accessible manner, examining each topic in depth without assuming any prior knowledge from the reader, and providing additional background material in the appendices. Features: covers image enhancement techniques in the spatial domain, the frequency domain, and the wavelet domain; reviews compression methods and formats for encoding images; discusses morphology-based image processing; investigates the modeling of object recognition in the human visual system; provides supplementary material, including MATLAB and C++ code, and interactive GUI-based modules, at an associated website.

This book constitutes revised and selected papers from the 18th International Conference on Mathematical Optimization Theory and Operations Research, MOTOR 2019, held in Ekaterinburg, Russia, in July 2019. The 40 full papers and 4 short papers presented in this volume were carefully reviewed and selected from a total of 170 submissions. The papers in the volume are organised according to the following topical headings: ?combinatorial optimization; game theory and mathematical economics; data mining and computational geometry; integer programming; mathematical programming; operations research; optimal control and applications.

A comprehensive digital image processing book that reflects new trends in this field such as document image compression and data compression standards. The book includes a complete rewrite of image data compression, a new chapter on image analysis, and a new section on image morphology.

"Embedded imaging devices such as digital still and video cameras, mobile phones, personal digital assistants, and visual sensors for surveillance and automotive applications make use of the single-sensor technology approach. An electronic sensor (Charge C" ????????????????

With crystal clarity, this book conveys the most current principles in digital image processing, providing both the background theory and the practical applications to various industries, such as digital cinema, video compression, and streaming media. This book contains tons of useful features, including: \* a chapter on the role of human vision in image visualization, \* the MATLAB codes used to generate most of the figures and tables listed in the book, as well as a few MATLAB projects, \* a 24-pg color insert \* case studies to illustrate the practical application of the theory.

Digital Image Processing Springer Science & Business Media

Meant for students and practicing engineers, this book provides a clear, comprehensive and up-to-date introduction to Digital Image Processing in a pragmatic style. An illustrative approach, practical examples and MATLAB applications given in the book help in bringing the theory to life.

This book constitutes the refereed proceedings of the 6th International Conference, ICISP 2014, held in June/July 2014 in Cherbourg, France. The 76 revised full papers were carefully reviewed and selected from 164 submissions. The contributions are organized in topical sections on multispectral colour science, color imaging and applications, digital cultural heritage, document image analysis, graph-based representations, image filtering and representation, computer vision and pattern recognition, computer graphics, biomedical, and signal processing.

The Indiana Department of Transportation (INDOT) has developed a guideline for evaluation of subsurface condition, a project-level evaluation for applicability of Indiana pavement preservation treatments (PPT). The developed guideline, using ground penetration radar (GPR) measurements, surface distress, and laboratory tests, determines the pavement subsurface distress severity and its distribution. The guideline also incorporates the newly developed water stripping severity test utilizing the digital image processing. The guideline has hierarchal evaluation system based on the type of data available for the test section. Level 1 is selected if GPR analysis data is available, level 2 is selected if surface distress data is available, and level 3 is used for all other cases. In addition, the subsurface distress distribution analysis tool (DCUAL) provides the locations of the PPT applicable sections. Case studies were conducted to provide aid to better understand the guideline, to present the example evaluation results upon the application of the guideline, and to validate the applicability of guidelines. Three test roads treated with PPTs within two to three years in Indiana were selected, and different evaluation levels were applied to the test roads. Level 1 and level 2 were applied for state road (SR) SR-70, and level 2 and 3 was applied for SR-257 and SR-43, respectively. Level 1 and level 2 analyses in the case study showed a good agreement with the case of the non-uniform subsurface distress distribution. In the process of determining the PPT applicability, pavements with the overall score of 60 or higher were found to be suitable for PPTs for all three levels of analysis and suitable for the Indiana State Roads having average annual daily traffic of less than 9000. Overall, the case study validated that the guideline provides a consistent, rational, and data-driven decision-making process for the applicability of the project-level pavement preservation program.

Digital image sequences (including digital video) are increasingly common and important components in technical applications ranging from medical imaging and multimedia communications to autonomous vehicle navigation. The immense popularity of DVD video and the introduction of digital television make digital video ubiquitous in the consumer domain. Digital Image Sequence Processing, Compression, and Analysis provides an overview of the current state of the field, as analyzed by leading researchers. An invaluable resource for planning and conducting research in this area, the book conveys a unified view of potential directions for further industrial development. It offers an in-depth treatment of the latest perspectives on processing, compression, and analysis of digital image sequences. Research involving digital image sequences remains extremely active. The advent of economical sequence acquisition, storage, and display devices, together with the availability of computing power, opens new areas of opportunity. This volume delivers the background necessary to understand the strengths and weaknesses of current techniques and the directions that consumer and technical applications may take over the coming decade.

For junior/graduate-level courses in Remote Sensing in Geography, Geology, Forestry, and Biology. This text focuses exclusively

