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Afterword

In the present book, we have provided detailed introductions to the nature, acquisition, representation, and characterization of color images. We have included discussions on not only images of naturally colored real-life entities, but also images of artificially colored objects and pseudocolor images. Pre-processing techniques to calibrate, standardize, and prepare color images for further processing have also been described.

We have given substantial attention to the development of image-processing methods for the removal of noise and artifacts, as well as to enhance color images for many different purposes and towards various goals. We have also devoted a chapter to the important topic of segmentation of color images for the purpose of detection of specific regions or objects of interest.

In order to maintain the present book as an introductory textbook to the fascinating subject of color image processing, we have started each chapter with fairly simple methods that are easy to comprehend and implement; however, the results achieved by such methods can be of limited accuracy and use. Indeed, to assist in the learning process, we have intentionally included a few examples where some methods have not led to good results. We have also provided details of advanced methods for each of the purposes mentioned above. In almost all cases, we have provided adequate details in the form of equations, flow charts, or algorithmic representations to facilitate clear understanding and implementation of the methods by an attentive reader. Within each chapter, we have provided several illustrations of application of each method using a variety of color images. In addition, we have described many practical applications of color image-processing techniques to biomedical images of various types to address real-life problems.

On the other hand, to limit the size and complexity of the book, we have chosen to leave aside a few advanced topics and specialized issues within the area of color image processing. The remarks we have provided in the last section of each chapter not only summarize the material presented in the chapter but also lead the reader to advanced material that we have elected to leave out of the present book; a reader interested in such material is guided to the references provided. In addition, we have not included advanced material on transforms and frequency-domain techniques for the analysis of vector-valued or color images; analysis of texture in color images; and techniques for coding, data compression, and telemedicine suitable for color images.

We are in the process of writing a second book on advanced techniques for color image processing with a selection of the topics that have not been included in the present book and additional applications.

We hope that the present book assists students and researchers in their exploration of the exciting area of color image processing.

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