Logic-based Nonlinear Image Processing

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Stephen Marshall

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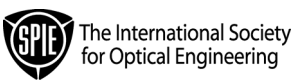

Introduction to the Series

Since its conception in 1989, the Tutorial Texts series has grown to more than 70 titles covering many diverse fields of science and engineering. When the series was started, the goal of the series was to provide a way to make the material presented in SPIE short courses available to those who could not attend, and to provide a reference text for those who could. Many of the texts in this series are generated from notes that were presented during these short courses. But as stand-alone documents, short course notes do not generally serve the student or reader well. Short course notes typically are developed on the assumption that supporting material will be presented verbally to complement the notes, which are generally written in summary form to highlight key technical topics and therefore are not intended as stand-alone documents. Additionally, the figures, tables, and other graphically formatted information accompanying the notes require the further explanation given during the instructor's lecture. Thus, by adding the appropriate detail presented during the lecture, the course material can be read and used independently in a tutorial fashion.

What separates the books in this series from other technical monographs and textbooks is the way in which the material is presented. To keep in line with the tutorial nature of the series, many of the topics presented in these texts are followed by detailed examples that further explain the concepts presented. Many pictures and illustrations are included with each text and, where appropriate, tabular reference data are also included.

The topics within the series have grown from the initial areas of geometrical optics, optical detectors, and image processing to include the emerging fields of nanotechnology, biomedical optics, and micromachining. When a proposal for a text is received, each proposal is evaluated to determine the relevance of the proposed topic. This initial reviewing process has been very helpful to authors in identifying, early in the writing process, the need for additional material or other changes in approach that would serve to strengthen the text. Once a manuscript is completed, it is peer reviewed to ensure that chapters communicate accurately the essential ingredients of the processes and technologies under discussion.

It is my goal to maintain the style and quality of books in the series, and to further expand the topic areas to include new emerging fields as they become of interest to our reading audience.

Arthur R. Weeks, Jr.
University of Central Florida

This book is dedicated to my late parents:

To my father, William George Marshall,
and to my mother, Clara Marshall, for their kindness and encouragement right up to the end of their lives.

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Contents

Acknowledgments **xiii**

Chapter 1 Introduction **1**
References 7

Chapter 2 What Is a Logic-Based Filter? **9**
2.1 Error Criterion 11
2.2 Filter Constraints 12
2.3 Window Constraint 13
2.4 Translation Invariance 13
2.5 Filter Windows 13
2.6 Filter Design 14
2.7 Minimizing the MAE 15
2.8 Summary 18
References 18

Chapter 3 How Accurate Is the Logic-Based Filter? **19**
3.1 Optimum Filter Error 19
3.2 Other Applications 23
3.2.1 Edge noise 23
3.2.2 Simple optical character recognition 25
3.2.3 Resolution conversion 26
3.3 Summary 27
References 28

Chapter 4 How Do You Train the Filter for a Task? **29**
4.1 Effect of Window Size 31
4.2 Training Errors 36
4.3 In Defense of Training Set Approaches 40
4.4 Summary 41
References 42

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Chapter 5 Increasing Filters and Mathematical Morphology 43
5.1 Constraints on the Filter Function 43
5.2 Statistical Relevance 54
5.3 Summary 55
References 56

Chapter 6 The Median Filter and Its Variants 57
6.1 The Grayscale Median as a Special Case of a Generalized WOS Filter 57
6.2 Binary WOS Filters 59
6.3 Positive and Negative Medians 59
6.4 Weighted Median Filters 60
6.5 Optimum Design of Weighted Rank and Median Filters 61
6.6 Weight-Monotonic Property 64
6.7 Design of Weighted Median Filters 66
6.8 Summary 70
References 70

Chapter 7 Extension to Grayscale 73
7.1 Stack Filters 73
7.2 Grayscale Morphology 79
7.3 Computational Morphology for Beginners 81
7.4 Elemental Erosion 82
7.5 Aperture Filters 88
7.6 Grayscale Applications 93
7.6.1 Film archive restoration 93
7.6.2 Removal of sensor noise 94
7.6.3 Image deblurring 96
7.7 Summary 98
References 98

Chapter 8 Grayscale Implementation 101
8.1 Grayscale Training Issues 101
8.1.1 Envelope filtering 101
8.2 Hardware Implementation 104
8.3 Stack Filter 107
8.4 Grayscale Morphology 112
8.5 Computational Morphology and Aperture Filters 113
8.6 Efficient Architecture for Computational Morphology and Aperture Filters 115
8.7 Summary 119
References 119

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Chapter 9 Case Study: Noise Removal from Astronomical Images 121
9.1 CCD Noise in Astronomical and Solar Images 121
9.2 Soft Morphological Filters 123
9.3 Results 127
9.3.1 Creation of a training set 127
9.3.2 Training 128
9.3.3 Application to real images 133
9.4 Hardware Implementation 134
9.5 Summary 138
References 138

Chapter 10 Conclusions 141
Reference 144

Index 145

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Stephen Marshall
October 2006

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