# Digital Color Imaging Handbook

Edited by Gaurav Sharma Xerox Corporation, Webster, New York, USA

A volume in the Electrical Engineering & Applied Signal Processing series Series Editor: Alexander Poularikis University of Alabama, Huntsville, USA

## A broad-based, authoritative view of color imaging science, algorithms, and technology.

Digital technology now enables unparalleled functionality and flexibility in the capture, processing, exchange, and output of color images. But harnessing its potential requires knowledge of color science, systems, processing algorithms, and device characteristics—topics drawn from a broad range of disciplines. One can acquire the requisite background with an armload of physics, chem-

NEW!

A COMPREHENSIVE,

ONE-STOP REFERENCE

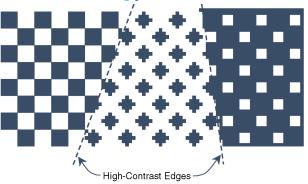
WORLD RENOWNED

CONTRIBUTORS

**OVER 340** 

ILLUSTRATIONS

**CRC PRESS** 



0900 FL

istry, engineering, computer science, and mathematics books and journals— or one can find it here, in the **Digital Color Imaging Handbook**.

Unprecedented in scope, this handbook presents, in a single concise and authoritative publication, the elements of these diverse areas relevant to digital color imaging. The first three chapters cover the basics of color vision, perception, and physics that underpin digital color imaging. The remainder of the text presents the technology of color imaging with chapters on color management, device color characterization, digital halftoning, image compression, color quantization, gamut mapping, computationally efficient transform algorithms, and color image processing for digital cameras.

Each chapter is written by world-class experts and largely self-contained, but cross references between chapters reflect the topics' important interrelations. Supplemental materials are available for download from the CRC Web site, including electronic versions of some of the images presented in the book.

## Features

- Provides a single, comprehensive source of information on the science and technology of color imaging
- Begins with fundamentals and connects to state-of-the-art research in all areas of color imaging systems
- Emphasizes connections between chapters to facilitate the understanding of digital color imaging from a systems perspective—increasingly important in today's interconnected world
- Covers recent innovations in the field of color imaging and image processing
- Includes extensive bibliographic references
- Offers supplementary materials on the Web at www.crcpress.com

Catalog no. 0900, December 2002, c. 784 pp. ISBN: 0-8493-0900-X, \$129.95 / £87.00

See reverse for contents and ordering information

## CONTENTS — Digital Color Imaging Handbook

Color Fundamentals for Digital Imaging, Gaurav Sharma, Xerox Corporation

Visual Psychophysics and Color Appearance, Garrett M. Johnson and Mark D. Fairchild, Rochester Institute of Technology

Physical Models for Color Prediction, Patrick Emmel, Clariant International

Color Management for Digital Imaging Systems, Edward J. Giorgianni, Thomas E. Madden and Kevin E. Spaulding, Eastman Kodak Company

Device Characterization, Raja Bala, Xerox Corporation

Digital Color Halftones, Charles M Hains, Shen-ge Wang, and Keith T. Knox, Xerox Corporation

Human Visual Model Based Color Halftoning, A. Ufuk Agar, Hewlett Packard Company, Farban A. Bagai, Sony Electronics, and Jan P. Allebach, Purdue University

Compression of Color Images, Ricardo de Queiroz, Xerox Corporation

Color Quantization, Luc Brun, Université Reims, Champagne Ardenne and Alain Trémeau, Université Jean Monnet de Saint-Etienne

 $S_u U$ 

 $n_{000}$ 

Gamut Mapping, Ján Morovič, University of Derby

Efficient Color Transformation Implementation, Raja Bala and R. Victor Klassen, Xerox Corporation

 $n_{111}$ 

 $n_{101}$ 

For priority

mail services,

please contact

your nearest

CRC PRESS

office.

Year

Month

S,t

Color Image Processing for Digital Cameras, Ken Parulski and Kevin E. Spaulding, Eastman Kodak Company

u < v

u > v

**Additional Title** 

\$1.99

\$3.99

£0.99

£2.99

.PO#

Check Enclosed \$

 $S_{\nu}V$ 

 $n_{001}$ 

Ordering Information: Orders must be prepaid or accompanied by a purchase order. Checks should be made payable to CRC Press. Please add the appropriate shipping and handling charge for each book

ordered. All prices are subject to change without notice. U.S./Canada: All orders must be paid in U.S. dollars

TAX: As required by law, please add applicable state and local taxes on all merchandise delivered to CA, FL, GA, IL, MA, NJ, NY, and Washington, DC. For Canadian orders, please add GST. We will add tax on all credit card orders. <u>European Orders:</u> All orders must be paid in U.K. £. VAT will be added at the rate applicable.

Textbooks: Special prices for course adopted textbooks may be available for certain titles. To review a

book for class adoption, contact our Academic Sales Department or submit your textbook evaluation request

online at www.crcpress.com/eval.htm Satisfaction Guaranteed: If the book supplied does not meet your

SHIPPING AND HANDLING

First Title

\$5.99

\$9.99

£2.99

£4.99

expectations, it may be returned to us in a saleable condition within 30 days of receipt for a full refund.

t < vt > v



Please use this ORDER FORM, CALL or ORDER ONLINE at WWW.CRCPRESS.COM

Please indicate quantities next to the title(s) ordered below:

DIGITAL COLOR IMAGING HANDBOOK

.Catalog no. 0900, ISBN: 0-8493-0900-X at \$129.95 / £87.00 each.

#### Other titles of interest:

ADAPTIVE IMAGE PROCESSING: A COMPUTATIONAL **INTELLIGENCE PERSPECTIVE** .Catalog no. 0283, ISBN: 0-8493-0283-8 at \$109.95 / £72.99 each.

THE IMAGE PROCESSING HANDBOOK. FOURTH EDITION ......Catalog no. 1142, ISBN: 0-8493-1142-X at \$139.95/ £93.00 each.

THE DIGITAL SIGNAL PROCESSING HANDBOOK .Catalog no. 8572, ISBN: 0-8493-8572-5 at \$159.95 / £107.00 each.

Name please print clearly

Company/Institution.

Address

City

Region **Delivery Time** USA/Canada 3-5 Days America/Asia/Australia 7-14 Days Europe 3-5 Days Middle East/Africa 7-21 Days 🗌 Visa MasterCard American Express

Signature and Telephone Number required on all orders

Telephone

E-Mail Address

If you would like to receive information from us by e-mail, please provide your e-mail address below.

**Corporate Offices** 

Country

### **ORDERING LOCATIONS**

State/Province.

In North & South America, Asia, and Australasia: **CRC PRESS** 

2000 N.W. Corporate Blvd. Boca Raton, FL 33431-9868, USA Tel: 1-800-272-7737 • Fax: 1-800-374-3401 From Outside the Continental U.S. Tel: 1-561-994-0555 • Fax: 1-561-361-6018 e-mail: orders@crcpress.com

In Europe, Middle East, and Africa: **CRC PRESS / ITPS** 

.Zip/Postal Code

Cheriton House. North Wav Andover, Hants, SP10 5BE, UK Tel: 44 (0) 1264 342932 Fax: 44 (0) 1264 342788 e-mail: crcpress@itps.co.uk

**CRC PRESS** 2000 N.W. Corporate Blvd. Boca Raton, FL 33431-9868, USA Tel: 1-800-272-7737 • Fax: 1-800-374-3401 From Outside the Continental U.S. Tel: 1-561-994-0555 • Fax: 1-561-361-6018 e-mail:\_orders@crcpress.com

**CRC PRESS UK** 23-25 Blades Court, Deodar Road London SW15 2NU. UK Tel: 44 (0) 20 8875 4370 Fax: 44 (0) 20 8871 3443 e-mail: enquiries@crcpress.com

www.crcpress.com 10.25.02rd