



A Computational Introduction to Digital Image Processing, Second Edition

By Alasdair McAndrew

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A Computational Introduction to Digital Image Processing, Second Edition

explores the nature and use of digital images and shows how they can be obtained, stored, and displayed. Taking a strictly elementary perspective, the book only covers topics that involve simple mathematics yet offer a very broad and deep introduction to the discipline.

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This second edition provides users with three different computing options. Along with MATLAB®, this edition now includes GNU Octave and Python. Users can choose the best software to fit their needs or migrate from one system to another. Programs are written as modular as possible, allowing for greater flexibility, code reuse, and conciseness. This edition also contains new images, redrawn diagrams, and new discussions of edge-preserving blurring filters, ISODATA thresholding, Radon transform, corner detection, retinex algorithm, LZW compression, and other topics.

Principles, Practices, and Programming

Based on the author's successful image processing courses, this bestseller is suitable for classroom use or self-study. In a straightforward way, the text

illustrates how to implement imaging techniques in MATLAB, GNU Octave, and Python. It includes numerous examples and exercises to give students hands-on practice with the material.

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Review

"This textbook does an excellent job covering the basics of image processing. I highly recommend it."

?Reza Malek-Madani, Professor of Mathematics, US Naval Academy

"This book is the most concise and readable introductory text on digital image processing I have ever encountered. It provides a gentle introduction to the field with little mathematics and plenty of examples. Each topic is clearly explained and can be practiced using ready-made computer programs written in three programming languages (MATLAB, Octave, and Python)."

?Mahamed G.H. Omran, PhD, Gulf University for Science & Technology (GUST), Kuwait

About the Author

Alasdair McAndrew is a senior lecturer and discipline leader in mathematics and physics at Victoria University in Melbourne, Australia. His teaching and research interests include image processing, cryptography, mathematics, and mathematics education. An avid technophile, he is the author of the CRC Press book *Introduction to Cryptography with Open-Source Software*. He holds a PhD from Monash University.

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