



Springer

1st
edition

2008, XII, 302 p.

Printed book

Hardcover

Printed book

Hardcover

ISBN 978-1-84800-137-4

£ 109,99 | CHF 153,50 | 129,99 € |

142,99 € (A) | 139,09 € (D)

Available

Discount group

Science (SC)

Product category

Monograph

Other renditions

Softcover

ISBN 978-1-4471-6042-7

Computer Science : Image Processing and Computer Vision

Davies, R., Twining, C., Taylor, C., University of Manchester Div. Imaging Science &, Manchester, UK

Statistical Models of Shape

Optimisation and Evaluation

- Addresses one of the key issues in shape modelling: that of establishing a meaningful correspondence between a set of shapes
- Uses a novel approach to establishing correspondence by casting model-building as an optimisation problem
- Includes practical examples of applications for both 2D and 3D sets of shapes
- Full implementation details, perviously unpublished, provided

The goal of image interpretation is to convert raw image data into meaningful information. Images are often interpreted manually. In medicine, for example, a radiologist looks at a medical image, interprets it, and translates the data into a clinically useful form. Manual image interpretation is, however, a time-consuming, error-prone, and subjective process that often requires specialist knowledge. Automated methods that promise fast and objective image interpretation have therefore stirred up much interest and have become a significant area of research activity. Early work on automated interpretation used low-level operations such as edge detection and region growing to label objects in images. These can produce reasonable results on simple images, but the presence of noise, occlusion, and structural complexity often leads to erroneous labelling. Furthermore, labelling an object is often only the first step of the interpretation process. In order to perform higher-level analysis, a priori information must be incorporated into the interpretation process. A convenient way of achieving this is to use a flexible model to encode information such as the expected size, shape, appearance, and position of objects in an image. The use of flexible models was popularized by the active contour model, or 'snake' [98]. A snake deforms so as to match image evidence (e.g., edges) whilst ensuring that it satisfies structural constraints. However, a snake lacks specificity as it has little knowledge of the domain, limiting its value in image interpretation.

Order online at springer.com/booksellers**Springer Nature Customer Service Center GmbH**

Customer Service

Tiergartenstrasse 15-17

69121 Heidelberg

Germany

T: +49 (0)6221 345-4301

row-booksellers@springernature.com

ISBN 978-1-84800-137-4 / BIC: UYT / SPRINGER NATURE: SCI22021

Prices and other details are subject to change without notice. All errors and omissions excepted. Americas: Tax will be added where applicable. Canadian residents please add PST, QST or GST. Please add \$5.00 for shipping one book and \$ 1.00 for each additional book. Outside the US and Canada add \$ 10.00 for first book, \$5.00 for each additional book. If an order cannot be fulfilled within 90 days, payment will be refunded upon request. Prices are payable in US currency or its equivalent.

Part of **SPRINGER NATURE**