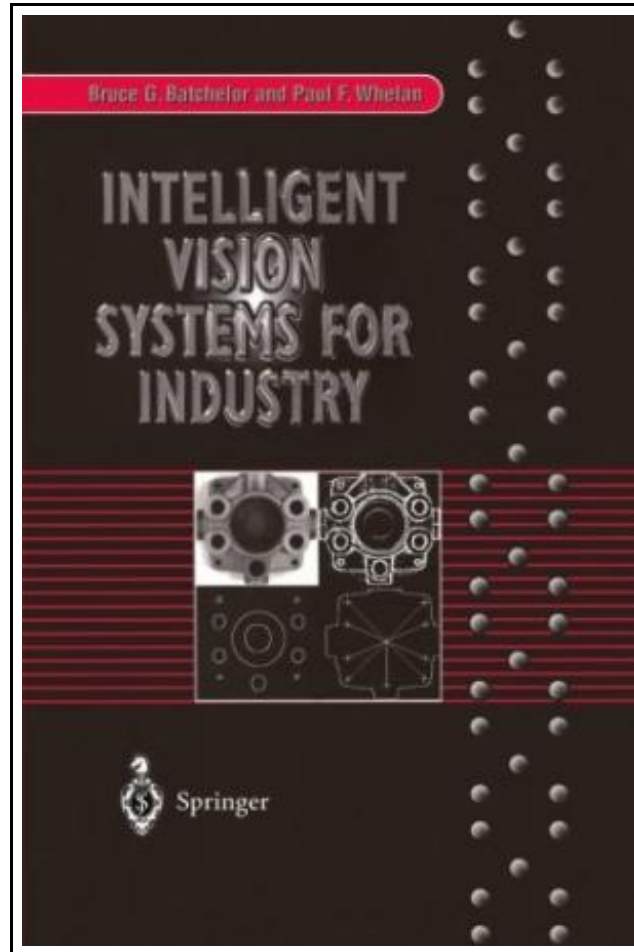# Intelligent Vision Systems for Industry

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Reviews

Just no words to explain. Indeed, it is actually play, nevertheless an amazing and interesting literature. Its been written in an exceptionally simple way and is particularly simply following i finished reading through this ebook by which in fact altered me, alter the way in my opinion.
(Leilani Rippin)

INTELLIGENT VISION SYSTEMS FOR INDUSTRY

Book Condition: New. Publisher/Verlag: Springer, Berlin | The application of intelligent imaging techniques to industrial vision problems is an evolving aspect of current machine vision research. Machine vision is a relatively new technology, more concerned with systems engineering than with computer science, and with much to offer the manufacturing industry in terms of improving efficiency, safety and product quality. Beginning with an introductory chapter on the basic concepts, the authors develop these ideas to describe intelligent imaging techniques for use in a new generation of industrial imaging systems. Sections cover the application of AI languages such as Prolog, the use of multi-media interfaces and multi-processor systems, external device control, and colour recognition. The text concludes with a discussion of several case studies that illustrate how intelligent machine vision techniques can be used in industrial applications. | 1 Basic Concepts.- 1.1 Industrial Vision Systems.- 1.1.1 Justification.- 1.1.2 Limitations of Present Systems.- 1.1.3 Flexible Manufacturing Systems.- 1.1.4 Process Control.- 1.2 Systems Engineering.- 1.2.1 Importance of Context.- 1.2.2 Industrial Examples.- 1.3 Intelligent Vision.- 1.3.1 Heuristics and Algorithms.- 1.3.2 Artificial Intelligence (AI) Languages.- 1.4 Book Outline.- 2 Basic Machine Vision Techniques.- 2.1 Representations of Images.- 2.2 Elementary Image Processing Functions.- 2.2.1 Monadic, Point-by-point Operators.- 2.2.2 Dyadic, Point-by-point Operators.- 2.2.3 Local Operators.- 2.2.4 Linear Local Operators.- 2.2.5 Non-linear Local Operators.- 2.2.6 N-tuple Operators.- 2.2.7 Edge Effects.- 2.2.8 Intensity Histogram.- 2.3 Binary Images.- 2.3.1 Measurements on Binary Images.- 2.3.2 Shape Descriptors.- 2.4 Binary Mathematical Morphology.- 2.4.1 Opening and Closing Operations.- 2.4.2 Structuring Element Decomposition.- 2.5 Grey Scale Morphology.- 2.6 Global Image Transforms.- 2.6.1 Hough Transform.- 2.6.2 Two-dimensional Discrete Fourier Transform.- 2.7 Texture Analysis.- 2.7.1 Statistical Approaches.- 2.7.2 Co-occurrence Matrix Approach.- 2.7.3 Structural Approaches.- 2.7.4 Morphological Texture Analysis.- 2.8 Implementation Considerations.- 2.8.1 Morphological System Implementation.- 2.9 Commercial Devices.- 2.9.1 Plug-in Boards: Frame-stores.- 2.9.2 Plug-in Boards: Dedicated Function.-...

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