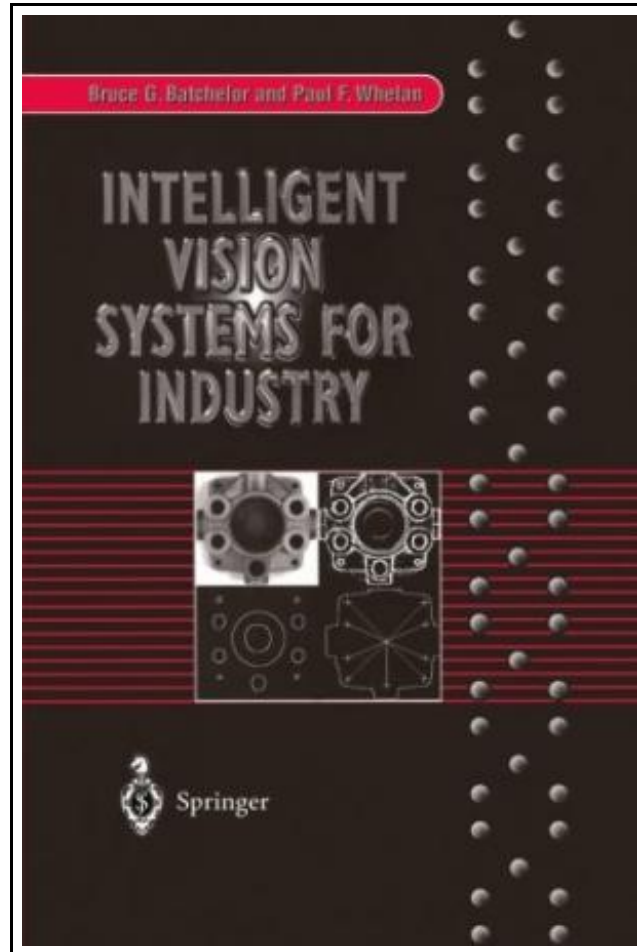# Intelligent Vision Systems for Industry

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Reviews

This pdf is indeed gripping and interesting. It is definitely simplistic but shocks within the 50 percent of your book. Once you begin to read the book, it is extremely difficult to leave it before concluding.
(Michael Spinka)

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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