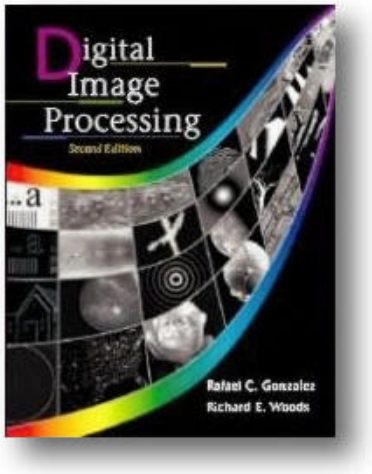

Digital Image Processing
Chapter 12
“Object Recognition”

Preview

The approaches to pattern recognition developed in this chapter are divided into two principal areas:

1) Decision-Theoretic
2) Structural

12.1 Patterns and Pattern Classes

12.2 Recognition Based on Decision-Theoretic Methods

12.2.1 Matching

Minimum distance classifier

Matching by Correlation

12.2.2 Optimum Statistical Classifiers

Bayes Classifier for Gaussian Pattern Classes

12.2.3 Neural Networks

Background

Perceptron for two pattern classes

Multilayer feedforward neural networks

Training by Backpropagation

Complexity of Decision Surfaces

12.3 Structural Methods

12.3.1 Matching Shape Numbers

References

Woods, Richard, Gonzalez, Rafael, “Digital Image Processing”, Second Edition, Prentice Hall