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2.10 THE DEVELOPMENT OF MULTISPECTRAL SENSOR SYSTEMS; 2.11 SUMMARY; CHAPTER 3. PATTERN RECOGNITION IN REMOTE SENSING; 3.1 THE SYNOPTIC VIEW AND THE VOLUME OF DATA; 3.2 WHAT IS A PATTERN?; 3.3 DISCRIMINANT FUNCTIONS 3.4 TRAINING THE CLASSIFIER: AN ITERATIVE APPROACH 3.5 TRAINING THE CLASSIFIER: THE STATISTICAL APPROACH; 3.6 DISCRIMINANT FUNCTIONS: THE CONTINUOUS CASE; 3.7 THE GAUSSIAN CASE; 3.8 OTHER TYPES OF CLASSIFIERS; 3.9 THRESHOLDING; 3.10 ON THE CHARACTERISTICS, VALUE, AND VALIDITY OF THE GAUSSIAN ASSUMPTION; 3.11 THE HUGHES EFFECT; 3.12 SUMMARY TO THIS POINT; 3.13 EVALUATING THE CLASSIFIER: PROBABILITY OF ERROR; 3.14 CLUSTERING: UNSUPERVISED ANALYSIS; 3.15 THE NATURE OF MULTISPECTRAL DATA IN FEATURE SPACE; 3.16 ANALYZING DATA: PUTTING THE PIECES TOGETHER; 3.17 AN EXAMPLE ANALYSIS PART III. ADDITIONAL DETAILS CHAPTER 4. TRAINING A CLASSIFIER; 4.1 CLASSIFIER TRAINING FUNDAMENTALS; 4.2 THE STATISTICS ENHANCEMENT CONCEPT; 4.3 THE STATISTICS ENHANCEMENT IMPLEMENTATION; 4.4 ILLUSTRATIONS OF THE EFFECT OF STATISTICS ENHANCEMENT; 4.5 ROBUST STATISTICS ENHANCEMENT; 4.6 ILLUSTRATIVE EXAMPLES OF ROBUST EXPECTATION MAXIMATION; 4.7 SOME ADDITIONAL COMMENTS; 4.8 A SMALL SAMPLE COVARIANCE ESTIMATION SCHEME; 4.9 RESULTS FOR SOME EXAMPLES; CHAPTER 5. HYPERSPECTRAL DATA CHARACTERISTICS; 5.1 INTRODUCTION; 5.2 A VISUALIZATION TOOL; 5.3 ACCURACY VS. STATISTICS ORDER 5.4 HIGH-DIMENSIONAL SPACES: A CLOSER LOOK 5.5 ASYMPTOTICAL FIRST AND SECOND ORDER STATISTICS PROPERTIES; 5.6 HIGH-DIMENSIONAL IMPLICATIONS FOR SUPERVISED CLASSIFICATION; CHAPTER 6. FEATURE DEFINITION; 6.1 INTRODUCTION; 6.2 AD HOC AND DETERMINISTIC METHODS; 6.3 FEATURE SELECTION; 6.4 PRINCIPAL COMPONENTS/KARHUNEN-LOEVE; 6.5 DISCRIMINANT ANALYSIS FEATURE EXTRACTION (DAFE); 6.6 DECISION BOUNDARY FEATURE EXTRACTION (DBFE); 6.7 NONPARAMETRIC WEIGHTED FEATURE EXTRACTION (NWFE); 6.8 PROJECTION PURSUIT; CHAPTER 7. A DATA ANALYSIS PARADIGM AND EXAMPLES 7.1 A PARADIGM FOR MULTISPECTRAL AND HYPERSPECTRAL DATA ANALYSIS

Sommario/riassunto

An outgrowth of the author's extensive experience teaching senior and graduate level students, this is both a thorough introduction and a solid professional reference.* Material covered has been developed based on a 35-year research program associated with such systems as the Landsat satellite program and later satellite and aircraft programs.* Covers existing aircraft and satellite programs and several future programs *An Instructor's Manual presenting detailed solutions to all the problems in the book is available from the Wiley editorial department.
