1.	Record Nr.	UNINA9910819874703321
	Autore	Devroye Luc
	Titolo	A Probabilistic Theory of Pattern Recognition / / by Luc Devroye, Laszlo Györfi, Gabor Lugosi
	Pubbl/distr/stampa	New York, NY : , : Springer New York : , : Imprint : Springer, , 1996
	ISBN	1-4612-0711-8
	Edizione	[1st ed. 1996.]
	Descrizione fisica	1 online resource (XV, 638 p.)
	Collana	Stochastic Modelling and Applied Probability, , 0172-4568 ; ; 31
	Disciplina	519.2
	Soggetti	Probabilities Pattern recognition Probability Theory and Stochastic Processes Pattern Recognition
	Lingua di pubblicazione	Inglese
	Formato	Materiale a stampa
	Livello bibliografico	Monografia
	Note generali	Bibliographic Level Mode of Issuance: Monograph
	Nota di bibliografia	Includes bibliographical references and indexes.
	Nota di contenuto	A Probabilistic Theory of Pattern Recognition -- Editor's page -- A Probabilistic Theory of Pattern Recognition -- Copyright -- Preface -- Contents -- 1 Introduction -- 2 The Bayes Error -- 3 Inequalities and Alternate Distance Measures -- 4 Linear Discrimination -- 5 Nearest Neighbor Rules -- 6 Consistency -- 7 Slow Rates of Convergence -- 8 Error Estimation -- 9 The Regular Histogram Rule -- 10 Kernel Rules -- 11 Consistency of the k-Nearest Neighbor Rule -- 12 Vapnik - Chervonenkis Theory -- 13 Combinatorial Aspects of Vapnik - Chervonenkis Theory -- 14 Lower Bounds for Empirical Classifier Selection -- 15 The Maximum Likelihood Principle -- 16 Parametric Classification -- 17 Generalized Linear Discrimination -- 18 Complexity Regularization -- 19 Condensed and Edited Nearest Neighbor Rules -- 20 Tree Classifiers -- 21 Data- Dependent Partitioning -- 22 Splitting the Data -- 23 The Resubstitution Estimate -- 24 Deleted Estimates of the Error Probability -- 25 Automatic Kernel Rules -- 26 Automatic Nearest Neighbor Rules -- 27 Hypercubes and Discrete Spaces -- 28 Epsilon Entropy and Totally Bounded Sets -- 29 Uniform Laws of Large Numbers -- 30 Neural Networks -- 31 Other Error Estimates -- 32 Feature Extraction -- Appendix -- Notation -- References -- Author Index -- Subject Index.

Sommario/riassunto

Pattern recognition presents one of the most significant challenges for scientists and engineers, and many different approaches have been proposed. The aim of this book is to provide a self-contained account of probabilistic analysis of these approaches. The book includes a discussion of distance measures, nonparametric methods based on kernels or nearest neighbors, Vapnik-Chervonenkis theory, epsilon entropy, parametric classification, error estimation, free classifiers, and neural networks. Wherever possible, distribution-free properties and inequalities are derived. A substantial portion of the results or the analysis is new. Over 430 problems and exercises complement the material.