| 1. | Record Nr. | UNINA9910777501403321 |
|---|---|---|
| | Titolo | Least squares support vector machines [[electronic resource] /] / Johan A.K. Suykens ... [et al.] |
| | Pubbl/distr/stampa | River Edge, NJ, : World Scientific, 2002 |
| | ISBN | 981-277-665-6 |
| | Descrizione fisica | 1 online resource (308 p.) |
| | Altri autori (Persone) | SuykensJohan A. K |
| | Disciplina | 006.3/1 |
| | Soggetti | Machine learning |
| | | Algorithms |
| | | Kernel functions |
| | | Least squares |
| | Lingua di pubblicazione | Inglese |
| | Formato | Materiale a stampa |
| | Livello bibliografico | Monografia |
| | Note generali | Description based upon print version of record. |
| | Nota di bibliografia | Includes bibliographical references and index. |
| | Nota di contenuto | Contents ; Preface ; Chapter 1 Introduction ; 1.1 Multilayer perceptron neural networks ; 1.2 Regression and classification ; 1.3 Learning and generalization ; 1.3.1 Weight decay and effective number of parameters ; 1.3.2 Ridge regression ; 1.3.3 Bayesian learning 1.4 Principles of pattern recognition 1.4.1 Bayes rule and optimal classifier under Gaussian assumptions ; 1.4.2 Receiver operating characteristic ; 1.5 Dimensionality reduction methods ; 1.6 Parametric versus non-parametric approaches and RBF networks 1.7 Feedforward versus recurrent network models Chapter 2 Support Vector Machines ; 2.1 Maximal margin classification and linear SVMs ; 2.1.1 Margin ; 2.1.2 Linear SVM classifier: separable case ; 2.1.3 Linear SVM classifier: non-separable case ; 2.2 Kernel trick and Mercer condition 2.3 Nonlinear SVM classifiers 2.4 VC theory and structural risk minimization ; 2.4.1 Empirical risk versus generalization error ; 2.4.2 Structural risk minimization ; 2.5 |

| Sommario/riassunto | This book focuses on Least Squares Support Vector Machines (LS-SVMs) which are reformulations to standard SVMs. LS-SVMs are closely related to regularization networks and Gaussian processes but additionally emphasize and exploit primal-dual interpretations from optimization theory. The authors explain the natural links between LS-SVM classifiers and kernel Fisher discriminant analysis. Bayesian inference of LS-SVM models is discussed, together with methods for imposing sparseness and employing robust statistics.  The framework is further extended towards unsupervised learning by considering P |