1. Record Nr. UNINA9910456197403321 Autore Riesen Kaspar Titolo Graph classification and clustering based on vector space embedding [[electronic resource] /] / Kaspar Riesen & Horst Bunke Singapore: Hackensack, N.J., World Scientific Pub. Co., 2010 Pubbl/distr/stampa **ISBN** 1-283-14450-6 9786613144508 981-4304-72-7 Descrizione fisica 1 online resource (330 p.) Collana Series in machine perception and artificial intelligence : : v. 77 Altri autori (Persone) **BunkeHorst** Disciplina 006.42 Soggetti Vector spaces Cluster theory (Nuclear physics) Electronic books. 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 Preface; Acknowledgments; Contents; 1. Introduction and Basic Concepts; 2. Graph Matching; 3. Graph Edit Distance; 4. Graph Data; 5. Kernel Methods; 6. Graph Embedding Using Dissimilarities; 7. Classification Experiments with Vector Space Embedded Graphs; 8. Clustering Experiments with Vector Space Embedded Graphs; 9. Conclusions: Appendix A Validation of Cost Parameters: Appendix B Visualization of Graph Data; Appendix C Classifier Combination; Appendix D Validation of a k-NN classifier in the Embedding Space; Appendix E Validation of a SVM classifier in the Embedding Space Appendix F Validation of Lipschitz EmbeddingsAppendix G Validation of Feature Selection Algorithms and PCA Reduction; Appendix H Validation of Classifier Ensemble; Appendix I Validation of Kernel k-Means Clustering: Appendix J Confusion Matrices: Bibliography: Index Sommario/riassunto This book is concerned with a fundamentally novel approach to graphbased pattern recognition based on vector space embedding of graphs. It aims at condensing the high representational power of graphs into a computationally efficient and mathematically convenient feature vector. This volume utilizes the dissimilarity space representation originally

proposed by Duin and Pekalska to embed graphs in real vector spaces.

Such an embedding gives one access to all algorithms developed in the past for feature vectors, which has been the predominant representation formalism in pattern recognition and r