1. Record Nr. UNINA9910812500603321

Autore	Motai Yuichi
Titolo	Data-variant kernel analysis / / Yuichi Motai
Pubbl/distr/stampa	Hoboken, New Jersey : , : Wiley, , 2015 ©2015
ISBN	1-119-01934-6 1-119-01935-4
Descrizione fisica	1 online resource (248 p.)
Collana	Wiley Series on Adaptive and Cognitive Dynamic Systems
Classificazione	COM051300
Disciplina	515/.9
Soggetti	Kernel functions Big data - Mathematics
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 at the end of each chapters and index.
Nota di contenuto	Cover; Title Page; Copyright; Contents; List of Figures; List of Tables; Preface; Acknowledgments; Chapter 1 Survey; 1.1 Introduction of Kernel Analysis; 1.2 Kernel Offline Learning; 1.2.1 Choose the Appropriate Kernels; 1.2.2 Adopt KA into the Traditionally Developed Machine Learning Techniques; 1.2.3 Structured Database with Kernel; 1.3 Distributed Database with Kernel; 1.3.1 Multiple Database Representation; 1.3.2 Kernel Selections Among Heterogeneous Multiple Databases; 1.3.3 Multiple Database Representation KA Applications to Distributed Databases; 1.4 Kernel Online Learning 1.4.1 Kernel-Based Online Learning Algorithms1.4.2 Adopt ""Online"" KA Framework into the Traditionally Developed Machine Learning Techniques; 1.4.3 Relationship Between Online Learning and Prediction Techniques; 1.5 Prediction with Kernels; 1.5.1 Linear Prediction; 1.5.2 Kalman Filter; 1.5.3 Finite-State Model; 1.5.4 Autoregressive Moving Average Model; 1.5.5 Comparison of Four Models; 1.6 Future Direction and Conclusion; References; Chapter 2 Offline Kernel Analysis; 2.1 Introduction; 2.2 Kernel Feature Analysis; 2.2.1 Kernel Basics; 2.2.2 Kernel Principal Component Analysis (KPCA) 2.2.3 Accelerated Kernel Feature Analysis (AKFA)2.2.4 Comparison of the Relevant Kernel Methods; 2.3 Principal Composite Kernel Feature Analysis (PC-KFA); 2.3.1 Kernel Selections; 2.3.2 Kernel Combinatory

Optimization; 2.4 Experimental Analysis; 2.4.1 Cancer Image Datasets; 2.4.2 Kernel Selection; 2.4.3 Kernel Combination and Reconstruction; 2.4.4 Kernel Combination and Classification; 2.4.5 Comparisons of Other Composite Kernel Learning Studies; 2.4.6 Computation Time; 2.5 Conclusion; References; Chapter 3 Group Kernel Feature Analysis; 3.1 Introduction
3.2 Kernel Principal Component Analysis (KPCA)3.3 Kernel Feature Analysis (KFA) for Distributed Databases; 3.3.1 Extract Data-Dependent Kernels Using KFA; 3.3.2 Decomposition of Database Through Data Association via Recursively Updating Kernel Matrices; 3.4 Group Kernel Feature Analysis (GKFA); 3.4.1 Composite Kernel: Kernel Combinatory Optimization; 3.4.2 Multiple Databases Using Composite Kernel; 3.5 Experimental Results; 3.5.1 Cancer Databases; 3.5.2 Optimal Selection of Data-Dependent Kernels; 3.5.3 Kernel Combinatory Optimization; 3.5.4 Composite Kernel for Multiple Databases
3.5.5 K-NN Classification Evaluation with ROC3.5.6 Comparison of Results with Other Studies on Colonography; 3.5.7 Computational Speed and Scalability Evaluation of GKFA; 3.6 Conclusions; References; Chapter 4 Online Kernel Analysis; 4.1 Introduction; 4.2 Kernel Basics: A Brief Review; 4.2.1 Kernel Principal Component Analysis; 4.2.2 Kernel Selection; 4.3 Kernel Adaptation Analysis of PC-KFA; 4.4 Heterogeneous vs. Homogeneous Data for Online PC-KFA; 4.4.1 Updating the Gram Matrix of the Online Data; 4.4.2 Composite Kernel for Online Data
4.5 Long-Term Sequential Trajectories with Self-Monitoring

Sommario/riassunto

"This book covers kernel analysis topics ranging from the fundamental theory of kernel functions to its applications"--