1. Record Nr. UNINA9910788289203321 Computational network theory: theoretical foundations and Titolo applications / / Edited by Matthias Dehmer, Frank Emmert-Streib, and Stefan Pickl Weinheim, Germany:,: Wiley-VCH Verlang GmbH & Co. KGaA,, 2015 Pubbl/distr/stampa ©2015 **ISBN** 3-527-69154-5 3-527-69151-0 Descrizione fisica 1 online resource (281 p.) Quantitative and network biology;; Volume 5 Collana 006.3 Disciplina Soggetti Electronic commerce Computational intelligence 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. Cover: Title Page: Copyright: Dedication: Contents: Color Plates: Nota di contenuto Preface: List of Contributors: Chapter 1 Model Selection for Neural Network Models: A Statistical Perspective; 1.1 Introduction; 1.2 Feedforward Neural Network Models; 1.3 Model Selection; 1.3.1 Feature Selection by Relevance Measures: 1.3.2 Some Numerical Examples: 1.3.3 Application to Real Data; 1.4 The Selection of the Hidden Layer Size: 1.4.1 A Reality Check Approach: 1.4.2 Numerical Examples by Using the Reality Check: 1.4.3 Testing Superior Predictive Ability for **Neural Network Modeling** 1.4.4 Some Numerical Results Using Test of Superior Predictive Ability1. 4.5 An Application to Real Data; 1.5 Concluding Remarks; References; Chapter 2 Measuring Structural Correlations in Graphs; 2.1 Introduction; 2.1.1 Solutions for Measuring Structural Correlations; 2.2 Related Work: 2.3 Self Structural Correlation: 2.3.1 Problem Formulation; 2.3.2 The Measure; 2.3.2.1 Random Walk and Hitting Time; 2.3.2.2 Decayed Hitting Time; 2.3.3 Computing Decayed Hitting Time; 2.3.3.1 Iterative Approximation; 2.3.3.2 A Sampling Algorithm for h(vi,B); 2.3.3.3 Complexity; 2.3.4 Assessing SSC 2.3.4.1 Estimating (Vg)2.3.4.2 Estimating the Significance of (Vg);

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Sommario/riassunto

This comprehensive introduction to computational network theory as a branch of network theory builds on the understanding that such networks are a tool to derive or verify hypotheses by applying computational techniques to large scale network data. The highly experienced team of editors and high-profile authors from around the world present and explain a number of methods that are representative of computational network theory, derived from graph theory, as well as computational and statistical techniques. With its coherent structure and homogenous style, this reference is equally suitable for