1. Record Nr. UNINA9910817948403321

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Titolo	A Primer on Machine Learning Applications in Civil Engineering
Pubbl/distr/stampa	Milton, : CRC Press LLC, 2019
ISBN	1-5231-4690-7 0-429-83666-X 0-429-83665-1 0-429-45142-3
Edizione	[1st ed.]
Descrizione fisica	1 online resource (281 pages)
Disciplina	624
Soggetti	Civil engineering
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di contenuto	Cover -- Half Title -- Title Page -- Copyright Page -- Dedication -- Contents -- Preface -- Acknowledgments -- A Primer on Machine Learning Applications in Civil Engineering -- Author -- 1: Introduction -- 1.1Machine Learning -- 1.2Learning from Data -- 1.3Research in Machine Learning: Recent Progress -- 1.4Artificial Neural Networks -- 1.5Fuzzy Logic (FL) -- 1.6Genetic Algorithms -- 1.7Support Vector Machine (SVM) -- 1.8Hybrid Approach (HA) -- Bibliography -- 2: Artificial Neural Networks -- 2.1Introduction to Fundamental Concepts and Terminologies -- 2.2Evolution of Neural Networks -- 2.3Models of ANN -- 2.4McCulloch-Pitts Model -- 2.5Hebb Network -- 2.6 Summary -- 2.7Supervised Learning Network -- 2.7.1Perceptron Network -- 2.7.2Adaptive Linear Neuron -- 2.7.3Back-Propagation Network -- 2.7.4Radial Basis Function Network -- 2.7.5Generalized Regression Neural Networks -- 2.7.6Summary -- 2.8Unsupervised Learning Networks -- 2.8.1Introduction -- 2.8.2Kohonen Self-Organizing Feature Maps -- 2.8.3Counter Propagation Network -- 2.8.4Adaptive Resonance Theory Network -- 2.8.5Summary -- 2.9 Special Networks -- 2.9.1Introduction -- 2.9.2Gaussian Machine -- 2.9.3Cauchy Machine -- 2.9.4Probabilistic Neural Network -- 2.9.5 Cascade Correlation Neural Network -- 2.9.6Cognitive Network -- 2.9.7Cellular Neural Network -- 2.9.8Optical Neural Network -- 2.9.9

Summary -- 2.10Working Principle of ANN -- 2.10.1Introduction -- 2.10.2Types of Activation Function -- 2.10.3ANN Architecture -- 2.10.4Learning Process -- 2.10.5Feed-Forward Back Propagation -- 2.10.6Strengths of ANN -- 2.10.7Weaknesses of ANN -- 2.10.8 Working of the Network -- 2.10.9Summary -- Bibliography -- 3: Fuzzy Logic -- 3.1Introduction to Classical Sets and Fuzzy Sets -- 3.1.1Classical Sets -- 3.1.2Fuzzy Sets -- 3.1.3Summary. 3.2Classical Relations and Fuzzy Relations -- 3.2.1Introduction -- 3.2.2Classical Relation -- 3.2.3Fuzzy Relation -- 3.2.4Tolerance and Equivalence Relations -- 3.2.5Summary -- 3.3Functions -- 3.3.1 Introduction -- 3.3.2Features of Membership Function -- 3.3.3 Fuzzification -- 3.3.4Membership Value Assignment -- 3.3.5 Summary -- 3.4Defuzzification -- 3.4.1Introduction -- 3.4.2Lamda Cut for Fuzzy Sets -- 3.4.3Defuzzification Methods -- 3.4.4Summary -- 3.5Fuzzy Arithmetic and Fuzzy Measures -- 3.5.1Introduction -- 3.5.2Fuzzy Arithmetic -- Addition and Subtraction -- Image of an Interval -- Multiplication -- Scalar Multiplication and Inverse -- Division -- Max v and min operations -- 3.5.3Fuzzy Extension -- 3.5.4Fuzzy Measures -- 3.5.5Measure of Fuzziness -- 3.5.6 Summary -- 3.6Fuzzy Rule Base and Approximate Reasoning -- 3.6.1 Introduction -- 3.6.2Fuzzy Proposition -- 3.6.3Formation of Rules -- 3.6.4Decomposition of Rules -- 3.6.5Aggregation of Fuzzy Rules -- 3.6.6Fuzzy Reasoning -- 3.6.7Fuzzy Inference System -- 3.6.7.1 Fuzzy Inference Methods -- 3.6.8Fuzzy Expert System -- 3.6.9 Summary -- 3.7Fuzzy Decision-Making -- 3.7.1Introduction -- Steps for Decision-Making -- 3.7.2Individual and Multi-Person Decision-Making -- 3.7.3Multi-Objective Decision-Making -- 3.7.4Multi-Attribute Decision-Making -- 3.7.5Fuzzy Bayesian Decision-Making -- 3.7.6Summary -- 3.8Fuzzy Logic Control Systems -- 3.8.1 Introduction -- 3.8.2Control System Design -- 3.8.3Operation of the FLC system -- 3.8.4FLC System Models -- 3.8.5Summary -- 3.9 Merits and Demerits of Fuzzy Logic -- 3.9.1Introduction -- 3.9.2 Merits of Fuzzy Logic -- 3.9.3Demerits of Fuzzy Logic -- 3.10Fuzzy Rule-Based or Inference Systems -- 3.10.1Introduction -- 3.10.2 Mamdani Fuzzy Inference System -- 3.10.3Takagi-Sugeno (TS) Fuzzy Inference System.
3.10.4A Linguistic Variable -- IF-THEN Rules -- IF X is High, Then Y is High -- 3.10.5Membership Functions -- 3.10.6Strategy of Fuzzy Logic Systems -- 3.10.7Summary -- References -- 4: Support Vector Machine -- 4.1Introduction to Statistical Learning Theory -- 4.2 Support Vector Classification -- 4.2.1Hard Margin SVM -- 4.2.2Soft Margin SVM -- 4.2.3Mapping to High-Dimensional Space -- 4.2.3.1 Kernel Tricks -- 4.2.3.2Normalizing Kernels -- 4.2.4Properties of Mapping Functions Associated with Kernels -- 4.2.5Summary -- 4.3 Multi-Class SVM -- 4.3.1Introduction -- 4.3.2Conventional SVM -- 4.3.3Decision Tree-Based SVM -- 4.3.4Pairwise SVM -- 4.3.5 Summary -- 4.4Various SVMs -- 4.4.1Introduction -- 4.4.2Least Square SVM -- 4.4.3Linear Programming SVM -- 4.4.4Sparse SVM -- 4.4.5Robust SVM -- 4.4.6Bayesian SVM -- 4.4.7Summary -- 4.5 Kernel-Based Methods -- 4.5.1Introduction -- 4.5.2Kernel Least Squares -- 4.5.3Kernel Principal Component Analysis -- 4.5.4Kernel Discriminate Analysis -- 4.5.5Summary -- 4.6Feature Selection and Extraction -- 4.6.1Introduction -- 4.6.2Initial Set of Features -- 4.6.3Procedure for Feature Selection -- 4.6.4Feature Extraction -- 4.6.5Clustering -- 4.6.6Summary -- 4.7Function Approximation -- 4.7.1Introduction -- 4.7.2Optimal Hyperplanes -- 4.7.3Margin Support Vector Regression -- 4.7.4Model Selection -- 4.7.5Training Methods -- 4.7.6Variants of SVR -- 4.7.7Variable Selections -- 4.7.8

Summary -- References -- 5: Genetic Algorithm (GA) -- 5.1 Introduction -- 5.1.1Basic Operators and Terminologies in GA -- Key Elements -- Breeding (Crossover) -- Selection -- Crossover (Recombination) -- 5.1.2Traditional Algorithm and GA -- 5.1.3 General GA -- 5.1.4The Schema Theorem -- Theorem: Schema Theorem (Holland) -- 5.1.5Optimal Allocation of Trails -- 5.1.6 Summary -- 5.2Classification of GA.
5.2.1Introduction -- 5.2.2Adaptive GA -- 5.2.3Hybrid GA -- 5.2.4 Parallel GA -- 5.2.5Messy GA -- 5.2.6Real Coded GA -- 5.2.7 Summary -- 5.3Genetic Programming -- 5.3.1Introduction -- 5.3.2 Characteristics of GP -- 5.3.2.1Human-Competitive -- 5.3.2.2High-Return -- 5.3.2.3Routine -- 5.3.2.4Machine Intelligence -- 5.3.3 Working of GP -- 5.3.3.1Preparatory Steps of Genetic Programming -- 5.3.3.2Executional Steps of Genetic Programming -- 5.3.3.3Fitness Function -- 5.3.3.4Functions and Terminals -- 5.3.3.5Crossover Operation -- 5.3.3.6Mutation -- 5.3.4Data Representation -- 5.3.4.1 Biological Representations -- 5.3.4.2Biomimetic Representations -- 5.3.4.3Enzyme Genetic Programming Representation -- 5.3.5 Summary -- Bibliography -- 6: Hybrid Systems -- 6.1Introduction -- 6.1.1Neural Expert Systems -- 6.1.2Approximate Reasoning -- 6.1.3 Rule Extraction -- 6.2Neuro-Fuzzy -- 6.2.1Neuro-Fuzzy Systems -- 6.2.2Learning the Neuro-Fuzzy System -- 6.2.3Summary -- 6.3 Neuro Genetic -- 6.3.1Neuro-Genetic (NGA) Approach -- 6.4Fuzzy Genetic -- 6.4.1Genetic Fuzzy Rule-Based Systems -- 6.4.2The Keys to the Tuning/Learning Process -- 6.4.3Tuning the Membership Functions -- 6.4.4Shape of the Membership Functions -- 6.4.5The Approximate Genetic Tuning Process -- 6.5Summary -- Bibliography -- 7: Data Statistics and Analytics -- 7.1Introduction -- 7.2Data Analysis: Spatial and Temporal -- 7.2.1Time Series Analysis -- 7.2.2 One-Way ANOVA -- 7.2.3Autocorrelation -- 7.2.4Rank von Neumann (RVN) Test -- 7.2.5Seasonal Mann-Kendall Test -- 7.3Data Pre-Processing -- 7.3.1Data Cleaning -- 7.3.2Data Integration -- 7.3.3 Data Transformation -- 7.3.4Data Reduction -- 7.3.5Data Discretization -- 7.4Presentation of Data -- 7.4.1Tabular Presentation -- 7.4.2Graphical Presentation -- 7.4.3Text Presentation -- 7.5Summary -- Bibliography.
8: Applications in the Civil Engineering Domain -- 8.1Introduction -- 8.2In the Domain of Water Resources -- 8.2.1Groundwater Level Forecasting -- Comparison between the LM, RBF and GRNN performance for well no. 2 -- Comparison between the LM, RBF, and GRNN Performance for Well No. 3 -- 8.2.2Water Consumption Modeling -- 8.2.3Modeling Failure Trend in Urban Water Distribution -- 8.2.4Time Series Flow Forecasting -- 8.2.5Classification and Selection of Data -- 8.2.6Overview of Research Methodology Adopted -- 8.3the Field of Geotechnical Engineering -- 8.4In the Field of Construction Engineering -- 8.4.1Using Fuzzy Logic System: Methodology and Procedures -- Mamdani Fuzzy Inference System (FIS) -- 8.5In the Field of Coastal and Marine Engineering -- 8.5.1Need of Forecasting -- 8.5.2from ANN Model -- 8.6In the Field of Environmental Engineering -- 8.6.1Dew Point Temperature Modeling -- 8.6.2Air Temperature Modeling Using Air Pollution and Meteorological Parameters -- 8.6.2.1Performance Analysis of Models for Seven Stations (Meteorological Parameters Only) ANFIS Model -- 8.6.2.2SVM model -- 8.7In the Field of Structural Engineering -- 8.8 In the Field of Transportation Engineering -- 8.8.1Soft Computing for Traffic Congestion Prediction -- 8.8.2Neural Networks in Traffic Congestion Prediction -- 8.8.3Fuzzy Systems in Traffic Congestion Forecasting -- 8.8.4Soft Computing in Vehicle Routing Problems --

8.9Other Applications -- 8.9.1Soil Hydraulic Conductivity Modeling -- Development of Models -- 8.9.2Modeling Pan Evaporation -- 8.9.2.1Evaluation -- 8.9.3Genetic Programming in Sea Wave Height Forecasting -- Bibliography -- 9: Conclusion and Future Scope of Work -- Conclusion -- Script Files -- Index.

Sommario/riassunto

Machine learning has undergone rapid growth in diversification and practicality, and the repertoire of techniques has evolved and expanded. The aim of this book is to provide a broad overview of the available machine-learning techniques that can be utilized for solving civil engineering problems. The fundamentals of both theoretical and practical aspects are discussed in the domains of water resources/hydrological modeling, geotechnical engineering, construction engineering and management, and coastal/marine engineering. Complex civil engineering problems such as drought forecasting, river flow forecasting, modeling evaporation, estimation of dew point temperature, modeling compressive strength of concrete, ground water level forecasting, and significant wave height forecasting are also included. Features Exclusive information on machine learning and data analytics applications with respect to civil engineering Includes many machine learning techniques in numerous civil engineering disciplines Provides ideas on how and where to apply machine learning techniques for problem solving Covers water resources and hydrological modeling, geotechnical engineering, construction engineering and management, coastal and marine engineering, and geographical information systems Includes MATLAB exercises