

Learning and Soft Computing: Support Vector Machines, Neural Networks, and Fuzzy Logic Models (Complex Adaptive Systems)

By Vojislav Kecman



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This textbook provides a thorough introduction to the field of learning from experimental data and soft computing. Support vector machines (SVM) and neural networks (NN) are the mathematical structures, or models, that underlie learning, while fuzzy logic systems (FLS) enable us to embed structured human knowledge into workable algorithms. The book assumes that it is not only useful, but necessary, to treat SVM, NN, and FLS as parts of a connected whole. Throughout, the theory and algorithms are illustrated by practical examples, as well as by problem sets and simulated experiments. This approach enables the reader to develop SVM, NN, and FLS in addition to understanding them. The book also presents three case studies: on NN-based control, financial time series analysis, and computer graphics. A solutions manual and all of the MATLAB programs needed for the simulated experiments are available.



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Editorial Review

Review

Kecman has many years of teaching and research experience, so naturally he does an excellent job of presenting the essence of learning and soft computing using neural networks, fuzzy logic, and statistics.

(**Zoran Gajic**, Department of Electrical and Computer Engineering, Rutgers University)

This book provides an excellent in-depth description of modern learning and soft computing methodologies. Accompanying software implementation of learning algorithms makes this text especially valuable for practitioners and graduate students interested in applications of predictive learning.

(**Vladimir Cherkassky**, Department of Electrical and Computer Engineering, University of Minnesota, Twin Cities)

This outstanding volume unifies the concepts of learning, neural networks, support vector machines, and fuzzy logic! It offers a clear presentation and numerous examples followed by end-of-chapter problems. These things along with the accompanying software make the book a favorite candidate for the leading academic text and an indispensable reference for soft computing professionals.

(**Jacek M. Zurada**, S.T. Fife Professor of Electrical and Computer Engineering, University of Louisville, and Editor-in-Chief, *IEEE Transactions on Neural Networks*)

About the Author

Vojislav Kecman is Professor in the Computer Science Department at Virginia Commonwealth University, Richmond, VA.

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