

---

# Neural Network Toolbox

---

Thank you categorically much for downloading **Neural Network Toolbox**. Most likely you have knowledge that, people have look numerous time for their favorite books like this Neural Network Toolbox, but stop occurring in harmful downloads.

Rather than enjoying a fine book later than a mug of coffee in the afternoon, otherwise they juggled next some harmful virus inside their computer. **Neural Network Toolbox** is nearby in our digital library an online entrance to it is set as public in view of that you can download it instantly. Our digital library saves in combination countries, allowing you to get the most less latency times to download any of our books behind this one. Merely said, the Neural Network Toolbox is universally compatible afterward any devices to read.

*Neural Network Toolbox*

*2020-07-14*

---

## LI OLSEN

---

Neural Network Architectures. Examples Using MATLAB Packt Publishing Ltd

Neural networks represent a powerful data processing technique that has reached maturity and broad application. When clearly understood and appropriately used, they are a mandatory component in the toolbox of any engineer who wants make the best use of the available data, in order to build models, make predictions, mine data, recognize shapes or signals, etc. Ranging from theoretical foundations to real-life applications, this book is intended to provide engineers and researchers with clear methodologies for taking advantage of neural networks in industrial, financial or banking applications, many instances of which are presented in the book. For the benefit of readers wishing to gain deeper knowledge of the topics, the book

features appendices that provide theoretical details for greater insight, and algorithmic details for efficient programming and implementation. The chapters have been written by experts and edited to present a coherent and comprehensive, yet not redundant, practically oriented introduction.

### **Machine Learning with Neural Networks Using MATLAB**

Tata McGraw-Hill Education

MATLAB has the tool Neural Network Toolbox or Deep Learning Tools that provides algorithms, functions, and apps to create, train, visualize, and simulate neural networks. You can perform classification, regression, clustering, dimensionality reduction, time-series forecasting, and dynamic system modeling and control. The toolbox includes convolutional neural network and autoencoder deep learning algorithms for image classification and feature learning tasks. To speed up training of large data sets, you can distribute computations and data across multicore processors, GPUs, and computer clusters using Parallel

Computing Toolbox. The more important features are the following: -Deep learning, including convolutional neural networks and autoencoders-Parallel computing and GPU support for accelerating training (with Parallel Computing Toolbox) - Supervised learning algorithms, including multilayer, radial basis, learning vector quantization (LVQ), time-delay, nonlinear autoregressive (NARX), and recurrent neural network (RNN)- Unsupervised learning algorithms, including self-organizing maps and competitive layers-Apps for data-fitting, pattern recognition, and clustering

*DEEP LEARNING with MATLAB. NEURAL NETWORKS by EXAMPLES*  
GRIN Verlag

Artificial neural networks and genetic algorithms both are areas of research which have their origins in mathematical models constructed in order to gain understanding of important natural processes. By focussing on the process models rather than the processes themselves, significant new computational techniques have evolved which have found application in a large number of diverse fields. This diversity is reflected in the topics which are subjects of the contributions to this volume. There are contributions reporting successful applications of the technology to the solution of industrial/commercial problems. This may well reflect the maturity of the technology, notably in the sense that 'real' users of modelling/prediction techniques are prepared to accept neural networks as a valid paradigm. Theoretical issues also receive attention, notably in connection with the radial basis function neural network. Contributions in the field of genetic algorithms reflect the wide range of current applications, including, for example, portfolio selection, filter design, frequency

assignment, tuning of nonlinear PID controllers. These techniques are also used extensively for combinatorial optimisation problems.

*Artificial Neural Nets and Genetic Algorithms* Createspace  
Independent Publishing Platform

Extract patterns and knowledge from your data in easy way using MATLAB About This Book\* Get your first steps into machine learning with the help of this easy-to-follow guide\* Learn regression, clustering, classification, predictive analytics, artificial neural networks and more with MATLAB\* Understand how your data works and identify hidden layers in the data with the power of machine learning. Who This Book Is For This book is for data analysts, data scientists, students, or anyone who is looking to get started with machine learning and want to build efficient data processing and predicting applications. A mathematical and statistical background will really help in following this book well. What You Will Learn\* Learn the introductory concepts of machine learning.\* Discover different ways to transform data using SAS XPORT, import and export tools,\* Explore the different types of regression techniques such as simple & multiple linear regression, ordinary least squares estimation, correlations and how to apply them to your data.\* Discover the basics of classification methods and how to implement Naive Bayes algorithm and Decision Trees in the Matlab environment.\* Uncover how to use clustering methods like hierarchical clustering to grouping data using the similarity measures.\* Know how to perform data fitting, pattern recognition, and clustering analysis with the help of MATLAB Neural Network Toolbox.\* Learn feature selection and extraction for dimensionality reduction

leading to improved performance. In Detail MATLAB is the language of choice for many researchers and mathematics experts for machine learning. This book will help you build a foundation in machine learning using MATLAB for beginners. You'll start by getting your system ready with the MATLAB environment for machine learning and you'll see how to easily interact with the Matlab workspace. We'll then move on to data cleansing, mining and analyzing various data types in machine learning and you'll see how to display data values on a plot. Next, you'll get to know about the different types of regression techniques and how to apply them to your data using the MATLAB functions. You'll understand the basic concepts of neural networks and perform data fitting, pattern recognition, and clustering analysis. Finally, you'll explore feature selection and extraction techniques for dimensionality reduction for performance improvement. At the end of the book, you will learn to put it all together into real-world cases covering major machine learning algorithms and be comfortable in performing machine learning with MATLAB. Style and approach The book takes a very comprehensive approach to enhance your understanding of machine learning using MATLAB. Sufficient real-world examples and use cases are included in the book to help you grasp the concepts quickly and apply them easily in your day-to-day work.

Neural Networks Using Matlab. Cluster Analysis and Classification  
CESAR PEREZ

Neural networks represent a powerful data processing technique that has reached maturity and broad application. When clearly understood and appropriately used, they are a mandatory

component in the toolbox of any engineer who wants make the best use of the available data, in order to build models, make predictions, mine data, recognize shapes or signals, etc. Ranging from theoretical foundations to real-life applications, this book is intended to provide engineers and researchers with clear methodologies for taking advantage of neural networks in industrial, financial or banking applications, many instances of which are presented in the book. For the benefit of readers wishing to gain deeper knowledge of the topics, the book features appendices that provide theoretical details for greater insight, and algorithmic details for efficient programming and implementation. The chapters have been written by experts and edited to present a coherent and comprehensive, yet not redundant, practically oriented introduction.

**Time Series Analysis with Neural Networks. Examples Across MATLAB** Morgan Kaufmann

Neural networks have been trained to perform complex functions in various fields, including pattern recognition, identification, classification, speech, vision, and control systems. Neural networks can also be trained to solve problems that are difficult for conventional computers or human beings. The toolbox emphasizes the use of neural network paradigms that build up to or are themselves used in- engineering, financial, and other practical applications. The following topics, developed in this book, explain how to use graphical tools for training neural networks to solve problems in function fitting, pattern recognition, clustering, and time series. Using these tools can give you an excellent introduction to the use of the Neural Network Toolbox software: - "Fit Data with a Neural Network" -

"Classify Patterns with a Neural Network" - "Cluster Data with a Self-Organizing Map" - "Neural Network Time-Series Prediction and Modeling"

MATLAB Functions for Neural Networks Models Springer Nature  
 Extract patterns and knowledge from your data in easy way using MATLAB About This Book Get your first steps into machine learning with the help of this easy-to-follow guide Learn regression, clustering, classification, predictive analytics, artificial neural networks and more with MATLAB Understand how your data works and identify hidden layers in the data with the power of machine learning. Who This Book Is For This book is for data analysts, data scientists, students, or anyone who is looking to get started with machine learning and want to build efficient data processing and predicting applications. A mathematical and statistical background will really help in following this book well. What You Will Learn Learn the introductory concepts of machine learning. Discover different ways to transform data using SAS XPORT, import and export tools, Explore the different types of regression techniques such as simple & multiple linear regression, ordinary least squares estimation, correlations and how to apply them to your data. Discover the basics of classification methods and how to implement Naive Bayes algorithm and Decision Trees in the Matlab environment. Uncover how to use clustering methods like hierarchical clustering to grouping data using the similarity measures. Know how to perform data fitting, pattern recognition, and clustering analysis with the help of MATLAB Neural Network Toolbox. Learn feature selection and extraction for dimensionality reduction leading to improved performance. In Detail MATLAB is the language of

choice for many researchers and mathematics experts for machine learning. This book will help you build a foundation in machine learning using MATLAB for beginners. You'll start by getting your system ready with the MATLAB environment for machine learning and you'll see how to easily interact with the Matlab workspace. We'll then move on to data cleansing, mining and analyzing various data types in machine learning and you'll see how to display data values on a plot. Next, you'll get to know about the different types of regression techniques and how to apply them to your data using the MATLAB functions. You'll understand the basic concepts of neural networks and perform data fitting, pattern recognition, and clustering analysis. Finally, you'll explore feature selection and extraction techniques for dimensionality reduction for performance improvement. At the end of the book, you will learn to put it all together into real-world cases covering major machine learning algorithms and be comfortable in performing machine learning with MATLAB. Style and approach The book takes a very comprehensive approach to enhance your understanding of machine learning using MATLAB. Sufficient real-world examples and use cases are included in the book to help you grasp the concepts quickly and apply them easily in your day-to-day work.

### **Neural Networks. Applications and Examples Using**

**MATLAB** Createspace Independent Publishing Platform  
 MATLAB has the tool Deep Learning Toolbox that provides algorithms, functions, and apps to create, train, visualize, and simulate neural networks. You can perform classification, regression, clustering, dimensionality reduction, timeseries forecasting, and dynamic system modeling and control. Dynamic

neural networks are good at timeseries prediction. You can use the Neural Net Time Series app to solve different kinds of time series problems It is generally best to start with the GUI, and then to use the GUI to automatically generate command line scripts. Before using either method, the first step is to define the problem by selecting a data set. Each GUI has access to many sample data sets that you can use to experiment with the toolbox. If you have a specific problem that you want to solve, you can load your own data into the workspace. With MATLAB is possible to solve three different kinds of time series problems. In the first type of time series problem, you would like to predict future values of a time series  $y(t)$  from past values of that time series and past values of a second time series  $x(t)$ . This form of prediction is called nonlinear autoregressive network with exogenous (external) input, or NARX. In the second type of time series problem, there is only one series involved. The future values of a time series  $y(t)$  are predicted only from past values of that series. This form of prediction is called nonlinear autoregressive, or NAR. The third time series problem is similar to the first type, in that two series are involved, an input series (predictors)  $x(t)$  and an output series (responses)  $y(t)$ . Here you want to predict values of  $y(t)$  from previous values of  $x(t)$ , but without knowledge of previous values of  $y(t)$ . This book develops methods for time series forecasting using neural networks across MATLAB

### **Computer Neural Networks on MATLAB** Springer

Explores methods of fault identification through programming and simulation in MATLAB Examines signal processing tools and their applications with examples Provides knowledge of artificial neural networks and their applications with illustrations Uses PNN

and BPNN to identify the different types of faults and obtain their corresponding locations Discusses the programming of signal processing using Wavelet Transform and S-Transform

### Big Data Analytics with Neural Networks Using MATLAB CESAR PEREZ

Build and run intelligent applications by leveraging key Java machine learning libraries About This Book Develop a sound strategy to solve predictive modelling problems using the most popular machine learning Java libraries. Explore a broad variety of data processing, machine learning, and natural language processing through diagrams, source code, and real-world applications This step-by-step guide will help you solve real-world problems and links neural network theory to their application Who This Book Is For This course is intended for data scientists and Java developers who want to dive into the exciting world of deep learning. It will get you up and running quickly and provide you with the skills you need to successfully create, customize, and deploy machine learning applications in real life. What You Will Learn Get a practical deep dive into machine learning and deep learning algorithms Explore neural networks using some of the most popular Deep Learning frameworks Dive into Deep Belief Nets and Stacked Denoising Autoencoders algorithms Apply machine learning to fraud, anomaly, and outlier detection Experiment with deep learning concepts, algorithms, and the toolbox for deep learning Select and split data sets into training, test, and validation, and explore validation strategies Apply the code generated in practical examples, including weather forecasting and pattern recognition In Detail Machine learning applications are everywhere, from self-driving cars, spam

detection, document search, and trading strategies, to speech recognition. Starting with an introduction to basic machine learning algorithms, this course takes you further into this vital world of stunning predictive insights and remarkable machine intelligence. This course helps you solve challenging problems in image processing, speech recognition, language modeling. You will discover how to detect anomalies and fraud, and ways to perform activity recognition, image recognition, and text. You will also work with examples such as weather forecasting, disease diagnosis, customer profiling, generalization, extreme machine learning and more. By the end of this course, you will have all the knowledge you need to perform deep learning on your system with varying complexity levels, to apply them to your daily work. The course provides you with highly practical content explaining deep learning with Java, from the following Packt books: *Java Deep Learning Essentials*, *Machine Learning in Java*, *Neural Network Programming with Java, Second Edition*. Style and approach This course aims to create a smooth learning path that will teach you how to effectively use deep learning with Java with other de facto components to get the most out of it. Through this comprehensive course, you'll learn the basics of predictive modelling and progress to solve real-world problems and links neural network theory to their application.

*Neural Network Design (2nd Edition)* CRC Press

Predictive analytics encompasses a variety of statistical techniques from predictive modeling, machine learning, and data mining that analyze current and historical facts to make predictions about future or otherwise unknown events. Different work fields with neural networks and predictive analytics

techniques are listed below: The multilayer perceptron (MLP), A radial basis function (RBF), Support vector machines (SVM), Fit regression models with neural networks, Time series neural networks, Hopfield and linear neural networks, Generalized regression and LVQ neural networks, Adaptive linear filters and non linear problems

**Neural Networks in Telecommunications** Packt Publishing Ltd

Getting the most out of neural networks and related data modelling techniques is the purpose of this book. The text, with the accompanying Netlab toolbox, provides all the necessary tools and knowledge. Throughout, the emphasis is on methods that are relevant to the practical application of neural networks to pattern analysis problems. All parts of the toolbox interact in a coherent way, and implementations and descriptions of standard statistical techniques are provided so that they can be used as benchmarks against which more sophisticated algorithms can be evaluated. Plenty of examples and demonstration programs illustrate the theory and help the reader understand the algorithms and how to apply them.

**NETLAB** Independently Published

MATLAB has the tool Neural Network Toolbox that provides algorithms, functions, and apps to create, train, visualize, and simulate neural networks. You can perform classification, regression, clustering, dimensionality reduction, time-series forecasting, and dynamic system modeling and control. The toolbox includes convolutional neural network and autoencoder deep learning algorithms for image classification and feature learning tasks. To speed up training of large data sets, you can distribute computations and data across multicore processors,

GPUs, and computer clusters using Parallel Computing Toolbox. The more important features are the following: -Deep learning, including convolutional neural networks and autoencoders - Parallel computing and GPU support for accelerating training (with Parallel Computing Toolbox) -Supervised learning algorithms, including multilayer, radial basis, learning vector quantization (LVQ), time-delay, nonlinear autoregressive (NARX), and recurrent neural network (RNN) -Unsupervised learning algorithms, including self-organizing maps and competitive layers -Apps for data-fitting, pattern recognition, and clustering - Preprocessing, postprocessing, and network visualization for improving training efficiency and assessing network performance -Simulink(R) blocks for building and evaluating neural networks and for control systems applications This book develops cluster analysis and classification techniques using neural networks

**MATLAB for Machine Learning** Createspace Independent Publishing Platform

Neural networks have been applied successfully in the identification and control of dynamic systems. The universal approximation capabilities of the multilayer perceptron make it a popular choice for modeling nonlinear systems and for implementing generalpurpose nonlinear controllers [HaDe99]. This topic introduces three popular neural network architectures for prediction and control that have been implemented in the Neural Network Toolbox software, and presents brief descriptions of each of these architectures and shows how you can use them: Model Predictive Control, NARMA-L2 (or Feedback Linearization) Control and Model Reference Control. Radial basis networks can require more neurons than standard feedforward

backpropagation networks, but often they can be designed in a fraction of the time it takes to train standard feedforward networks. They work best when many training vectors are available. Probabilistic neural networks can be used for classification problems. When an input is presented, the first layer computes distances from the input vector to the training input vectors and produces a vector whose elements indicate how close the input is to a training input. The second layer sums these contributions for each class of inputs to produce as its net output a vector of probabilities. Finally, a compete transfer function on the output of the second layer picks the maximum of these probabilities, and produces a 1 for that class and a 0 for the other classes. Self-organizing in networks is one of the most fascinating topics in the neural network field. Such networks can learn to detect regularities and correlations in their input and adapt their future responses to that input accordingly. The neurons of competitive networks learn to recognize groups of similar input vectors. Self-organizing maps learn to recognize groups of similar input vectors in such a way that neurons physically near each other in the neuron layer respond to similar input vectors. Self-organizing maps do not have target vectors, since their purpose is to divide the input vectors into clusters of similar vectors. There is no desired output for these types of networks. Learning vector quantization (LVQ) is a method for training competitive layers in a supervised manner (with target outputs). A competitive layer automatically learns to classify input vectors. However, the classes that the competitive layer finds are dependent only on the distance between input vectors. If two input vectors are very similar, the competitive layer

probably will put them in the same class. There is no mechanism in a strictly competitive layer design to say whether or not any two input vectors are in the same class or different classes. LVQ networks, on the other hand, learn to classify input vectors into target classes chosen by the user. This book develops the following topics: - "Neural Network Control Systems" - "Neural Network Predictive Controller in Simulink" - "NARMA-L2 Neural Controller in Simulink" - "Design Model-Reference Neural Controller in Simulink" - "Import-Export Neural Network Simulink Control Systems" - "Radial Basis Neural Networks" - "Probabilistic Neural Networks" - "Generalized Regression Neural Networks" - "Learning Vector Quantization Networks" - "Self-Organizing and LVQ" - "Cluster with a Competitive Neural Network" - "Cluster with Self-Organizing Map Neural Network" - "Self-Organizing and LVQ" - "Cluster with a Competitive Neural Network" - "Cluster with Self-Organizing Map Neural Network" - "Adaptive Neural Network Filters"

#### *MATLAB for Machine Learning Apress*

Big data analytics is the process of collecting, organizing and analyzing large sets of data (called big data) to discover patterns and other useful information. Big data analytics can help organizations to better understand the information contained within the data and will also help identify the data that is most important to the business and future business decisions. Analysts working with big data basically want the knowledge that comes from analyzing the data. To analyze such a large volume of data, big data analytics is typically performed using specialized software tools and applications for predictive analytics, data mining, text mining, forecasting and data optimization.

Collectively these processes are separate but highly integrated functions of high-performance analytics. Using big data tools and software enables an organization to process extremely large volumes of data that a business has collected to determine which data is relevant and can be analyzed to drive better business decisions in the future. Among all these tools highlights MATLAB. MATLAB implements various toolboxes for working on big data analytics, such as Statistics Toolbox and Neural Network Toolbox. This book develops Big Data Analytics applications using MATLAB Neural Network Toolbox. The toolbox includes convolutional neural network and autoencoder deep learning algorithms for image classification and feature learning tasks. To speed up training of large data sets, you can distribute computations and data across multicore processors, GPUs, and computer clusters using Parallel Computing Toolbox. The more important features are the following: - Deep learning, including convolutional neural networks and autoencoders - Parallel computing and GPU support for accelerating training (with Parallel Computing Toolbox) - Supervised learning algorithms, including multilayer, radial basis, learning vector quantization (LVQ), time-delay, nonlinear autoregressive (NARX), and recurrent neural network (RNN) - Unsupervised learning algorithms, including self-organizing maps and competitive layers - Apps for data-fitting, pattern recognition, and clustering - Preprocessing, postprocessing, and network visualization for improving training efficiency and assessing network performance - Simulink(R) blocks for building and evaluating neural networks and for control systems applications Neural networks are composed of simple elements operating in parallel. These elements are inspired by biological nervous



systems. As in nature, the connections between elements largely determine the network function. You can train a neural network to perform a particular function by adjusting the values of the connections (weights) between elements.

#### *Advanced Neural Networks With Matlab* Apress

Computer neural networks are a branch of artificial intelligence, inspired to behave in a manner similar to the human brain; they are trained and they learn from their training. Computer neural networks have a wide variety of applications, mostly hinged around modelling, forecasting, and general predictions. This book illustrates how to use computer neural networks on MATLAB in very simple and elegant manner. The language of the book is elementary as it is meant for beginners, readers are not assumed to have previous skills on the subject. Projects, in varying degrees, have been used to make sure that readers get a practical and hands-on experience on the subject. The book is meant for you if you want to get a quick start with the practical use of computer neural networks on MATLAB without the boredom associated with a lengthy theoretical write-up.

[Bayesian Nonparametrics via Neural Networks](#) Independently Published

MATLAB Neural Network Toolbox provides algorithms, pretrained models, and apps to create, train, visualize, and simulate both shallow and deep neural networks. You can perform classification, regression, clustering, dimensionality reduction, time-series forecasting, and dynamic system modeling and control. Deep learning networks include convolutional neural networks (ConvNets, CNNs) and autoencoders for image classification, regression, and feature learning. For small training sets, you can

quickly apply deep learning by performing transfer learning with pretrained deep networks. To speed up training on large datasets, you can use Parallel Computing Toolbox to distribute computations and data across multicore processors and GPUs on the desktop, and you can scale up to clusters and clouds (including Amazon EC2(R) P2 GPU instances) with MATLAB(R) Distributed Computing Server. The Key Features developed in this book are de next: - Deep learning with convolutional neural networks (for classification and regression) and autoencoders (for feature learning) - Transfer learning with pretrained convolutional neural network models - Training and inference with CPUs or multi-GPUs on desktops, clusters, and clouds - Unsupervised learning algorithms, including self-organizing maps and competitive layers - Supervised learning algorithms, including multilayer, radial basis, learning vector quantization (LVQ), time-delay, nonlinear autoregressive (NARX), and recurrent neural network (RNN) - Preprocessing, postprocessing, and network visualization for improving training efficiency and assessing network performance

#### **TIME SERIES FORECASTING USING NEURAL NETWORKS. EXAMPLES WITH MATLAB** Springer Science & Business Media

This book provides a clear and detailed coverage of fundamental neural network architectures and learning rules. In it, the authors emphasize a coherent presentation of the principal neural networks, methods for training them and their applications to practical problems.

[Practical MATLAB Deep Learning](#) Createspace Independent Publishing Platform

Machine Learning is a method used to devise complex models

and algorithms that lend themselves to prediction; in commercial use, this is known as predictive analytics. These analytical models allow researchers, data scientists, engineers, and analysts to produce reliable, repeatable decisions and results" and uncover "hidden insights" through learning from historical relationships and trends in the data. MATLAB has the tool Neural Network Toolbox that provides algorithms, functions, and apps to create, train, visualize, and simulate neural networks. You can perform classification, regression, clustering, dimensionality reduction, time-series forecasting, dynamic system modeling and control and most machine learning techniques. The toolbox includes convolutional neural network and autoencoder deep learning algorithms for image classification and feature learning tasks. To speed up training of large data sets, you can distribute computations and data across multicore processors, GPUs, and computer clusters using Parallel Computing Toolbox. The more important features are the following: -Deep learning, including convolutional neural networks and autoencoders -Parallel computing and GPU support for accelerating training (with Parallel Computing Toolbox) -Supervised learning algorithms, including multilayer, radial basis, learning vector quantization (LVQ), time-delay, nonlinear autoregressive (NARX), and recurrent neural network (RNN) -Unsupervised learning algorithms, including self-organizing maps and competitive layers -Apps for data-fitting, pattern recognition, and clustering -Preprocessing, postprocessing, and network visualization for improving training efficiency and assessing network performance

-Simulink(R) blocks for building and evaluating neural networks and for control systems applications

*Graph Representation Learning* CESAR PEREZ

MATLAB has the tool Neural Network Toolbox that provides algorithms, functions, and apps to create, train, visualize, and simulate neural networks. You can perform classification, regression, clustering, dimensionality reduction, time-series forecasting, and dynamic system modeling and control. The toolbox includes convolutional neural network and autoencoder deep learning algorithms for image classification and feature learning tasks. To speed up training of large data sets, you can distribute computations and data across multicore processors, GPUs, and computer clusters using Parallel Computing Toolbox. The more important features are the following: -Deep learning, including convolutional neural networks and autoencoders -Parallel computing and GPU support for accelerating training (with Parallel Computing Toolbox) -Supervised learning algorithms, including multilayer, radial basis, learning vector quantization (LVQ), time-delay, nonlinear autoregressive (NARX), and recurrent neural network (RNN) -Unsupervised learning algorithms, including self-organizing maps and competitive layers -Apps for data-fitting, pattern recognition, and clustering -Preprocessing, postprocessing, and network visualization for improving training efficiency and assessing network performance -Simulink(R) blocks for building and evaluating neural networks and for control systems applications this book develops Neural Networkd Time series using MATLAB