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Titolo	Neural Networks: Tricks of the Trade [[electronic resource] /] / edited by Genevieve B. Orr, Klaus-Robert Müller
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Edizione	[1st ed. 1998.]
Descrizione fisica	1 online resource (VIII, 432 p.)
Collana	Lecture Notes in Computer Science, , 0302-9743 ; ; 1524
Disciplina	006.3/2
Soggetti	Computers Artificial intelligence Microprocessors Pattern recognition Computational complexity Computation by Abstract Devices Artificial Intelligence Processor Architectures Pattern Recognition Complexity
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Bibliographic Level Mode of Issuance: Monograph
Nota di bibliografia	Includes bibliographical references and indexes.
Nota di contenuto	Speeding Learning -- Efficient BackProp -- Regularization Techniques to Improve Generalization -- Early Stopping - But When? -- A Simple Trick for Estimating the Weight Decay Parameter -- Controlling the hyperparameter search in MacKay's Bayesian neural network framework -- Adaptive Regularization in Neural Network Modeling -- Large Ensemble Averaging -- Improving Network Models and Algorithmic Tricks -- Square Unit Augmented Radially Extended Multilayer Perceptrons -- A Dozen Tricks with Multitask Learning -- Solving the Ill-Conditioning in Neural Network Learning -- Centering Neural Network Gradient Factors -- Avoiding roundoff error in backpropagating derivatives -- Representing and Incorporating Prior Knowledge in Neural Network Training -- Transformation Invariance in Pattern Recognition — Tangent Distance and Tangent Propagation --

Combining Neural Networks and Context-Driven Search for Online, Printed Handwriting Recognition in the Newton -- Neural Network Classification and Prior Class Probabilities -- Applying Divide and Conquer to Large Scale Pattern Recognition Tasks -- Tricks for Time Series -- Forecasting the Economy with Neural Nets: A Survey of Challenges and Solutions -- How to Train Neural Networks.

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Sommario/riassunto

It is our belief that researchers and practitioners acquire, through experience and word-of-mouth, techniques and heuristics that help them successfully apply neural networks to difficult real world problems. Often these "tricks" are theoretically well motivated. Sometimes they are the result of trial and error. However, their most common link is that they are usually hidden in people's heads or in the back pages of space-constrained conference papers. As a result newcomers to the field waste much time wondering why their networks train so slowly and perform so poorly. This book is an outgrowth of a 1996 NIPS workshop called Tricks of the Trade whose goal was to begin the process of gathering and documenting these tricks. The interest that the workshop generated motivated us to expand our collection and compile it into this book. Although we have no doubt that there are many tricks we have missed, we hope that what we have included will prove to be useful, particularly to those who are relatively new to the field. Each chapter contains one or more tricks presented by a given author (or authors). We have attempted to group related chapters into sections, though we recognize that the different sections are far from disjoint. Some of the chapters (e.g., 1, 13, 17) contain entire systems of tricks that are far more general than the category they have been placed in.

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