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Nota di contenuto	KALMAN FILTERING AND NEURAL NETWORKS; CONTENTS; Preface; Contributors; 1 Kalman Filters; 1.1 Introduction; 1.2 Optimum Estimates; 1.3 Kalman Filter; 1.4 Divergence Phenomenon: Square-Root Filtering; 1.5 Rauch-Tung-Striebel Smoother; 1.6 Extended Kalman Filter; 1.7 Summary; References; 2 Parameter-Based Kalman Filter Training: Theory and Implementation; 2.1 Introduction; 2.2 Network Architectures; 2.3 The EKF Procedure; 2.3.1 Global EKF Training; 2.3.2 Learning Rate and Scaled Cost Function; 2.3.3 Parameter Settings; 2.4 Decoupled EKF (DEKF); 2.5 Multistream Training 2.5.1 Some Insight into the Multistream Technique2.5.2 Advantages and Extensions of Multistream Training; 2.6 Computational Considerations; 2.6.1 Derivative Calculations; 2.6.2 Computationally Efficient Formulations for Multiple-Output Problems; 2.6.3 Avoiding Matrix Inversions; 2.6.4 Square-Root Filtering; 2.7 Other Extensions and Enhancements; 2.7.1 EKF Training with Constrained Weights; 2.7.2 EKF Training with an Entropic Cost Function; 2.7.3 EKF Training with Scalar Errors; 2.8 Automotive Applications of EKF Training; 2.8.1

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Filter; 6.1.3 The EM Algorithm; 6.2 Combining EKS and EM
6.2.1 Extended Kalman Smoothing (E-step)

Sommario/riassunto

State-of-the-art coverage of Kalman filter methods for the design of neural networks This self-contained book consists of seven chapters by expert contributors that discuss Kalman filtering as applied to the training and use of neural networks. Although the traditional approach to the subject is almost always linear, this book recognizes and deals with the fact that real problems are most often nonlinear. The first chapter offers an introductory treatment of Kalman filters with an emphasis on basic Kalman filter theory, Rauch-Tung-Striebel smoother, and the extended Kalman filter. O
