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Nota di contenuto	A Statistical Approach to Neural Networks for Pattern Recognition; Contents; Notation and Code Examples; Preface; Acknowledgments; 1 Introduction; 1.1 The perceptron; 2 The Multi-Layer Perceptron Model; 2.1 The multi-layer perceptron (MLP); 2.2 The first and second derivatives; 2.3 Additional hidden layers; 2.4 Classifiers; 2.5 Complements and exercises; 3 Linear Discriminant Analysis; 3.1 An alternative method; 3.2 Example; 3.3 Flexible and penalized LDA; 3.4 Relationship of MLP models to LDA; 3.5 Linear classifiers; 3.6 Complements and exercises; 4 Activation and Penalty Functions 4.1 Introduction4.2 Interpreting outputs as probabilities; 4.3 The fiuniversal approximatorfl and consistency; 4.4 Variance and bias; 4.5 Binary variables and logistic regression; 4.6 MLP models and cross-entropy; 4.7 A derivation of the softmax activation function; 4.8 The finaturalfl pairing and A,; 4.9 A comparison of least squares and cross-entropy; 4.10 Conclusion; 4.11 Complements and exercises; 5 Model Fitting and Evaluation; 5.1 Introduction; 5.2 Error rate estimation; 5.3

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 Implementation
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Sommario/riassunto

An accessible and up-to-date treatment featuring the connection between neural networks and statistics. A Statistical Approach to Neural Networks for Pattern Recognition presents a statistical treatment of the Multilayer Perceptron (MLP), which is the most widely used of the neural network models. This book aims to answer questions that arise when statisticians are first confronted with this type of model, such as: How robust is the model to outliers? Could the model be made more robust? Which points will have a high leverage? What are good starting values for the fitting algorithm?