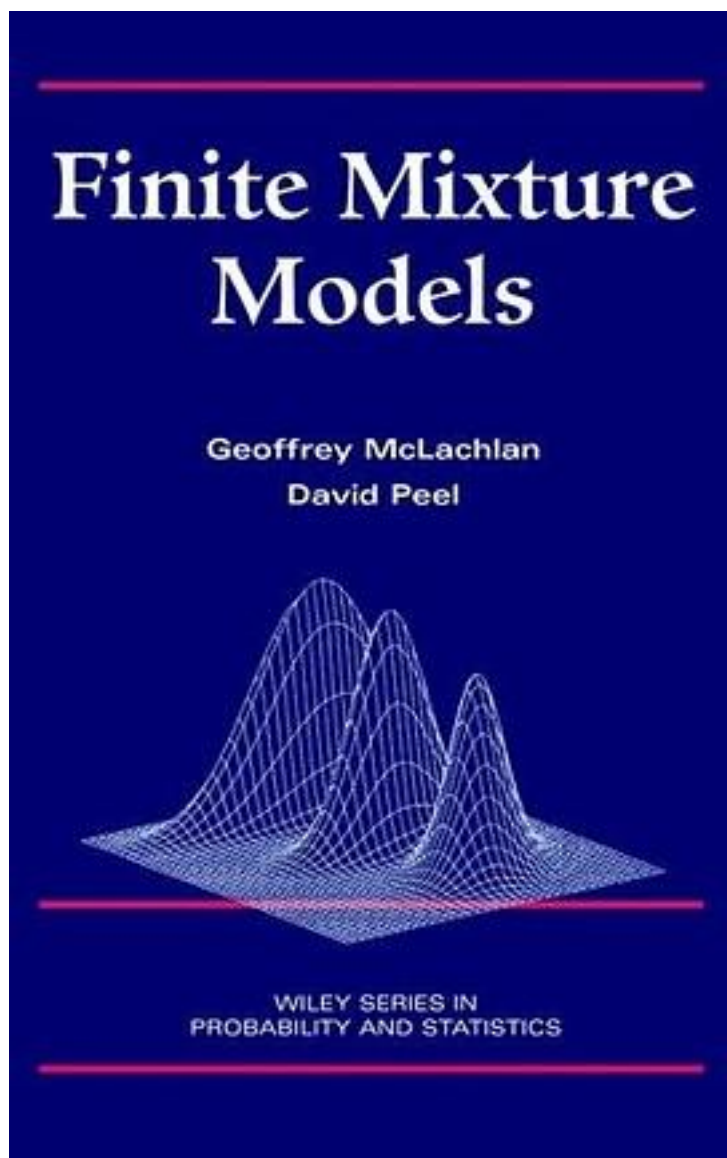


# Finite Mixture Models



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著者:McLachlan, Geoffrey J./ Peel, David

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An up-to-date, comprehensive account of major issues in finite mixture modeling

This volume provides an up-to-date account of the theory and applications of modeling via finite mixture distributions. With an emphasis on the applications of mixture models in both mainstream analysis and other areas such as unsupervised pattern recognition, speech recognition, and medical imaging, the book describes the formulations of the finite mixture approach, details its methodology, discusses aspects of its implementation, and illustrates its application in many common statistical contexts.

Major issues discussed in this book include identifiability problems, actual fitting of finite mixtures through use of the EM algorithm, properties of the maximum likelihood estimators so obtained, assessment of the number of components to be used in the mixture, and the applicability of asymptotic theory in providing a basis for the solutions to some of these problems. The author also considers how the EM algorithm can be scaled to handle the fitting of mixture models to very large databases, as in data mining applications. This comprehensive, practical guide:

- \* Provides more than 800 references-40% published since 1995
- \* Includes an appendix listing available mixture software
- \* Links statistical literature with machine learning and pattern recognition literature
- \* Contains more than 100 helpful graphs, charts, and tables

Finite Mixture Models is an important resource for both applied and theoretical statisticians as well as for researchers in the many areas in which finite mixture models can be used to analyze data.

Table of Contents

General Introduction.

ML Fitting of Mixture Models.

Multivariate Normal Mixtures.

Bayesian Approach to Mixture Analysis.

Mixtures with Nonnormal Components.

Assessing the Number of Components in Mixture Models.

Multivariate  $t$  Mixtures.

Mixtures of Factor Analyzers.

Fitting Mixture Models to Binned Data.

Mixture Models for Failure-Time Data.

Mixture Analysis of Directional Data.

Variants of the EM Algorithm for Large Databases.

Hidden Markov Models.

Appendices.

References.

Indexes.

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DAVID PEEL, PhD, is a research fellow in the Department of Mathematics at the University of Queensland, Australia.

Reviews

"This is an excellent book.... I enjoyed reading this book. I recommend it highly to both mathematical and applied statisticians." (Technometrics, February 2002)

"This book will become popular to many researchers...the material covered is so wide that it will make this book a standard reference for the forthcoming years." (Zentralblatt MATH, Vol. 963, 2001/13)

"the material covered is so wide that it will make this book a standard reference for the forthcoming years." (Zentralblatt MATH, Vol.963, No.13, 2001)

"This book is excellent reading...should also serve as an excellent handbook on mixture modelling..." (Mathematical Reviews, 2002b)

"...contains valuable information about mixtures for researchers..." (Journal of Mathematical Psychology, 2002)

"...a masterly overview of the area...It is difficult to ask for more and there is no doubt that McLachlan and Peel's book will be the standard reference on mixture models for many years to come." (Statistical Methods in Medical Research, Vol. 11, 2002)

"...they are to be congratulated on the extent of their achievement..." (The Statistician, Vol.51, No.3)

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