Cambridge Series in Statistical and Probabilistic Mathematics

Model Selection and Model Averaging Gerda Claeskens and Nils Lid Hjørt

## Model Selection and Model Averaging (Cambridge Series in Statistical and Probabilistic Mathematics)

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Choosing a model is central to all statistical work with data. We have seen rapid advances in model fitting and in the theoretical understanding of model selection, yet this book is the first to synthesize research and practice from this active field. Model choice criteria are explained, discussed and compared, including the AIC, BIC, DIC and FIC. The uncertainties involved with model selection are tackled with discussions of frequent and Bayesian methods; model averaging schemes are presented. Real-data examples are complemented by derivations providing deeper insight into the methodology, and instructive exercises build familiarity with the methods. The companion website features Data sets and R-code.

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"All data analyses are compatible with open-source R software, and data sets and R code are available from a companion web site."

Book News

"Overall, given the inviting style of the presentation and the quality of the material, this book could be quite a catch for graduate students as well as for practitioners where models really do make a difference." Ita Cirovic Donev, MAA Reviews

"'This is a good textbook for a master-level statistical course about model selection.' It covers many important concepts and methods about model selection." Mathematical Reviews

"This book is comprehensive in its treatment of the subject and will probably teach something new, even to the most experienced researchers in model selection. The authors have succeeded in bringing together a coherent volume, which gives a state of the art account of the current practice in model selection and comparison, containing a plethora of asymptotic (sometimes new) results, which can be used to compare different model choice criteria. Most importantly, this is the sole volume dedicated to this subject, taking a fully statistical as opposed to an information theoretic approach to the topic of model selection. This book will be attractive to a wide range of graduate students and researchers, users or developers of model choice criteria, of all statistical persuasions."

Cedric E. Ginestet, Statistics in Society

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#### About the Author

Gerda Claeskens is Professor in the OR and Business Statistics and Leuven Statistics Research Center at the Catholic University of Leuven, Belgium.

Nils Lid Hjort is Professor of Mathematical Statistics in the Department of Mathematics at the University of Oslo.

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