Applied Nonparametric Regression is the first book to bring together in one place the techniques for regression curve smoothing involving more than one variable. The computer and the development of interactive graphics programs have made curve estimation popular. This volume focuses on the applications and practical problems of two central aspects of curve smoothing – the choice of smoothing parameters and the construction of confidence bounds.

Härdle argues that all smoothing methods are based on a local averaging mechanism, and thus can be seen as essentially equivalent to kernel smoothing. To simplify the exposition kernel smoothers are introduced and discussed in great detail. Building on this exposition various other smoothing methods (among them splines and orthogonal polynomials) are presented and their merits discussed. All the methods presented can be understood on an intuitive level; however, exercises and supplemental materials are provided for those readers desiring a deeper understanding of the techniques.

The methods covered in this text have numerous applications in many areas using statistical analysis. Motivating examples stem from economics such as the estimation of Engel curves as well as biomedical and engineering problems. For practical applications of the methods a computing environment for eXploratory Regression – XploRe – is described.

"Nonparametric regression analysis has become central to economic theory. Härdle, by writing the first comprehensive and accessible book on the subject, has contributed enormously to making nonparametric regression equally central to econometric practice." –Charles F. Manski, University of Wisconsin, Madison

"This book represents an optimally estimated common thread for the numerous topics and results in the fast-growing area of nonparametric regression. The user-friendly approach taken by the author has successfully smoothed out most of the formidable asymptotic elaboration in developing the theory. This is an excellent collection for both beginners and experts."

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"This monograph on nonparametric regression presents a particularly clear and balanced view of the methodology and practice of this very important subject, and so is of use to theoreticians and practitioners alike."

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ISBN 0-521-4295

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Contents