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Clinical Prediction Models: A Practical Approach to Development, Validation and Updating

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Dr Steyerberg of the Erasmus MC, Rotterdam, The Netherlands aims to provide an insight and also a practical illustration on how modern statistical concepts and regression methods can be applied in medical prediction outcomes.

The book is published in the "Statistics for Biology and Health" series and will be of interest to those who work in medical cybernetics and indeed all cybernetics and systems researchers who are studying such medical problems and wish to apply statistical approaches and methodologies.

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It is worth examining the detailed contents list because this is a 500 + page book and individual chapters may be of particular value to potential readers. The contents of the book include:

- Introduction.
- Applications of prediction models.
- Study design for prediction models.
- Statistical models for prediction.
- Overfitting and optimism in prediction models.
- Choosing between alternative statistical models.
- Dealing with missing values.
- Case study on dealing with missing values.
- Coding of categorical and continuous predictors.
- Restrictions on candidate predictors.
- Selection of main effect.
- Assumptions in regression models: additivity and linearity.
- Modern estimation methods.
- Estimation with external methods.
- Evaluation of performance.
- Clinical usefulness.
- Validation of prediction models.
- Presentation formats.
- Patterns of external validity.
- Updating for a new setting.
- Updating for a multiple settings.
- Prediction of a binary outcome: 30-day mortality after acute myocardial infarction.
- Case study on survival analysis: prediction of secondary cardiovascular events.
- Lessons from case studies.

Book reports

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