Institut für
Mathematische Stochastik

Georg–August–Universität

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Einladung

Im Kolloquium Stochastik in der Praxis spricht

Dr. Kerrie Nelson,
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über das Thema

Modelling inter-rater agreement using mixed models

Der Vortrag findet statt am

Freitag, 4. November 2005 um 14:15 Uhr

im

Seminarraum der Stochastik, Maschmühlenweg 8 - 10

Es laden ein: die Dozenten des Instituts für Mathematische Stochastik

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Abstract:
Assessment of patients in common medical procedures, such as the diagnosis of breast cancer from a mammogram is often based upon the expert opinion of physicians. Strong agreement between raters is suggestive of an accurate diagnostic procedure. Substantial variability is often observed between raters in these subjective types of classifications. Current methods for assessing inter-rater agreement, including Cohen's kappa, are prone to bias and do not easily incorporate multiple raters or unbalanced data.
We propose the use of mixed models to accurately measure agreement between raters in a flexible and realistic manner, to yield inference about a general underlying medical diagnostic process, and to identify important factors that influence the rating process. This information can consequently be used in the training of biomedical professionals to improve their diagnosis skills. Measures of agreement which are easily interpretable and user-friendly are also proposed. The methods discussed are applied to a dataset comprising of ratings made by seven pathologists on 119 slides for the presence or absence of carcinoma in situ of the uterine cervix.