学术报告

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MATHEMATICS

Model-free conditional screening for ultrahigh-dimensional survival data via conditional distance correlation

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摘要： How to select the active variables which have significant impact on the event of interest is a very important and meaningful problem in the statistical analysis of ultrahigh-dimensional data. In many applications, researchers often know a certain set of covariates are active variables from some previous investigations and experiences. With the knowledge of the important prior knowledge of active variables, we propose a model-free conditional screening procedure for ultrahigh dimensional survival data based on conditional distance correlation. The proposed procedure can effectively detect the hidden active variables which are jointly important but are weakly correlated with the response. Moreover, it performs well when covariates are strongly correlated with each other. We establish the sure screening property and the ranking consistency of the proposed method and conduct extensive simulation studies, which suggests that the proposed procedure works well for practical situations. Then we illustrate the new approach through a real data set from the diffuse large-B-cell lymphoma study.

个人简介：现为首都师范大学教授，博士生导师，中国科协第十届全委会委员，曾任国务院学位委员会学科评议组专家。中国科学院系统科学研究所博士毕业。在大数据统计建模、高维统计及其稳健统计理论和方法、统计机器学习、金融统计、以及质量管理等领域取得过许多重要的研究成果，发表论文180余篇，其中包括发表在国际顶级的统计和计量经济学杂志JASA、AoS、JRSS(B)、Biometrika和JoE上。主持国家自然科学基金重点项目、杰青（B）项目以及多项面上项目、主要参加教育部重大科研基金项目、科技部863等项目。现担任《数学学报》和《应用数学学报》中、英文版以及《Statistical Theory and Related Fields》编委，中国现场统计研究会副理事长，全国工业统计教育研究会副理事长，北京应用统计学会会长，国际数理统计学会（中国分会）常务理事。曾获得教育部高等学校科学技术奖-自然科学奖二等奖；全国统计科学研究优秀成果奖一等奖等。

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