Acta Mathematica Sinica, English Series 2006 22 (4): 1063-1068 ISSN: 0583-1431 CN: 11-1914/R

22(4)

A Scoring Criterion for Learning Chain Graphs

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收稿日期 2003-11-28 修回日期 网络版发布日期 2006-7-15 接受日期 2004-4-2

摘要 A chain graph allows both directed and undirected edges, and contains the underlying mathematical properties of the two. An important method of learning graphical models is to use scoring criteria to measure how well the graph structures fit the data. In this paper, we present a scoring criterion for learning chain graphs based on the Kullback--Leibler distance. It is score equivalent, that is, equivalent chain graphs obtain the same score, so it can be used to perform model selection and model averaging.

关键词 Chain graph Markov equivalence Scoring criterion

分类号

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Abstract A chain graph allows both directed and undirected edges, and contains the underlying mathematical properties of the two. An important method of learning graphical models is to use scoring criteria to measure how well the graph structures fit the data. In this paper, we present a scoring criterion for learning chain graphs based on the Kullback--Leibler distance. It is score equivalent, that is, equivalent chain graphs obtain the same score, so it can be used to perform model selection and model averaging.

Key words Chain graph Markov equivalence Scoring criterion

DOI: 10.1007/s10114-005-0651-0

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