

研究、探讨

扩展关系数据模型下的Credal网络近似推理

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摘要 对扩展关系数据模型作进一步延伸, 构建了扩展乘积连接和扩展边缘连接操作。提出利用上述操作计算Credal网络中各结点联合概率分布和后验概率的方法, 从而实现了Credal网络的近似推理, 并给出了该近似推理的SQL语言实现算法, 算例结果表明该方法是有用的。建立了Credal网络的关系数据结构, 利用关系数据库的查询优化机制, 有效规避了Credal网络推理过程中Credal集顶点组合爆炸问题, 提高了Credal网络推理的效率。

关键词 [Credal网络](#) [扩展关系数据模型](#) [扩展乘积连接操作](#) [扩展边缘操作](#)

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Method of credal network approximation inference based on extended relational data model

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Abstract

The extended relational data model is extended with the two operators of extended product join and extended marginalization defined. A method to make Credal network approximation inference is proposed by computing the joint probability distribution and posterior probability of variables through the above operators. Furthermore its arithmetic is developed by SQL statement. Its validity and efficiency can be showed in the application case. The relational data structure of Credal network is constructed. Thus the query optimization mechanism of relational database can be fully used and the efficiency of Credal network inference can be improved greatly.

Key words [Credal network](#) [extended relational data model](#) [extended product join](#) [extended marginalization](#)

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