

# 基于贝叶斯-高斯模型的多本体映射算法

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**摘 要:** 语义网中, 本体映射是解决本体异构的关键. 在面对多本体模型同时映射的情况时, 提出一种新的基于贝叶斯-高斯模型的本体映射算法 IOBGM(Improved ontology Bayesian-Gaussian model). 该方法首先将本体模型转换成贝叶斯网络模型, 接下来结合传统基于贝叶斯网络模型的本体映射方法, 采用混合高斯模型对混合节点群进行聚类判定. 最后运用了迭代映射模式, 在获得初步映射节点对相似度的情况下通过迭代模块来对其他隐性相似节点进行二次相似度判定, 从而减少结果误差. 实验结果表明, IOBGM 系统在本体查全率方面有较为突出的表现, 在多本体映射的情况下具有一定的应用优势, 其稳定性和效率能够满足实用需求.

**关键词:** 本体异构; 本体映射; 贝叶斯网络; 高斯模型; 聚类判定; 迭代映射

## An Ontology Mapping Method Based on Bayesian and Gaussian Model

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**Abstract:** In Semantic Web, Ontology mapping is the key to solving ontology heterogeneous. In this paper, a new ontology model based on Bayesian-Gaussian is proposed in the face of multiple ontology mapping. First of all, the method transforms the ontology model into a Bayesian network model. Then, based on traditional Bayesian network model, the hybrid Gaussian model is used to cluster the mixed node groups. Finally, iterative mapping mode is used to reduce the error. In the case of obtaining the similarity degree of the initial mapping node, the similarity degree of other similar similarity nodes is determined by the iterative module. The experimental results show that the IOBGM system presented in this paper has outstanding performance on ontology recall rate, and has certain application advantages in the case of multi-ontology mapping. Its stability and efficiency can meet the practical requirements.

**Key words:** heterogeneous ontology; ontology mapping; bayesian network; gaussian model; clustering determination; iterative mapping

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