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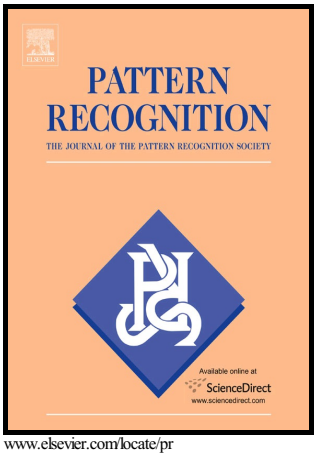

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A Survey on semi-supervised feature selection methods

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Abstract

Feature selection is a significant task in data mining and machine learning applications which eliminates irrelevant and redundant features and improves learning performance. In many real-world applications, collecting labeled data is difficult, while abundant unlabeled data are easily accessible. This motivates researchers to develop semi-supervised feature selection methods which use both labeled and unlabeled data to evaluate feature relevance. However, till-to-date, there is no comprehensive survey covering the semi-supervised feature selection methods. In this paper, semi-supervised feature selection methods are fully investigated and two taxonomies of these methods are presented based on two different perspectives which represent the hierarchical structure of semi-supervised feature selection methods. The first perspective is based on the basic taxonomy of feature selection methods and the second one is based on the taxonomy of semi-supervised learning methods. This survey can be helpful for a researcher to