Abstract

Reusing domain vocabularies in the context of developing the knowledge based Linked Open data system is the most important discipline on the web. Many editors are available for developing and managing the vocabularies or Ontologies. However, selecting the most relevant editor is very difficult since each vocabulary construction initiative requires its own budget, time, resources. In this paper a novel unsupervised machine learning based comparative assessment mechanism has been proposed for selecting the most relevant editor. Defined evaluation criterions were functionality, reusability, data storage, complexity, association, maintainability, resilience, reliability, robustness, learnability, availability, flexibility, and visibility. Principal component analysis (PCA) was applied on the feedback data set collected from a survey involving sixty users. Focus was to identify the least correlated features carrying the most independent information variance to optimize the tool selection process. An automatic evaluation method based on Bagging Decision Trees has been used to identify the most suitable editor. Three tools namely Vocbench, TopBraid EVN and Pool Party Thesaurus Manager have been evaluated. Decision tree based analysis recommended the Vocbench and the Pool Party Thesaurus Manager are the better performer than the TopBraid EVN tool with very similar recommendation scores.
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**Index Terms**

- Computer Science
- Information Systems

**Keywords**

- Principal component analysis
- Bagging Decision Trees
- Feature
- Clustering
- Decision Making