World Academy of Science, Engineering and Technology
International Journal of Computer and Information Engineering
Vol:9, No:08, 2015

Hybrid Approximate Structural-Semantic Frequent Subgraph Mining

Authors : Montaceur Zaghdoud, Mohamed Moussaoui, Jalel Akaichi

Abstract : Frequent subgraph mining refers usually to graph matching and it is widely used in when analyzing big data with large graphs. A lot of research works dealt with structural exact or inexact graph matching but a little attention is paid to semantic matching when graph vertices and/or edges are attributed and typed. Therefore, it seems very interesting to integrate background knowledge into the analysis and that extracted frequent subgraphs should become more pruned by applying a new semantic filter instead of using only structural similarity in graph matching process. Consequently, this paper focuses on developing a new hybrid approximate structuralsemantic graph matching to discover a set of frequent subgraphs. It uses simultaneously an approximate structural similarity function based on graph edit distance function and a possibilistic vertices similarity function based on affinity function. Both structural and semantic filters contribute together to prune extracted frequent set. Indeed, new hybrid structural-semantic frequent subgraph mining approach searches will be suitable to be applied to several application such as community detection in social networks.

Keywords : approximate graph matching, hybrid frequent subgraph mining, graph mining, possibility theory
Conference Title : ICADMA 2015 : International Conference on Advanced Data Mining and Applications
Conference Location : Barcelona, Spain
Conference Dates : August 17-18, 2015

Open Science Index, Computer and Information Engineering Vol:9, No:08, 2015 publications.waset.org/abstracts/34195.pdf