Similarity of Weighted Directed Acyclic Graphs

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Abstract— A previous similarity algorithm for weighted trees (node-labeled, arc-labeled, and arc-weighted) allows users to specify offer and seek trees including the relative importance of different product features and subfeatures. Higher weights are given to more important features. This algorithm can be augmented by clustering and indexing methods to realize the match-making component of a multi-agent system, which produces ranked pairings of seller and buyer agents. These techniques have also been used in e-Learning and can perhaps be modified for areas such as RNA secondary structure comparison.

In this poster, a similarity algorithm for weighted Directed Acyclic Graphs (DAGs) is developed, which caches and reuses the similarity (and/or simplicity) values computed for shared subDAGs in given DAGs. This will improve both the applicability and efficiency of the weighted-tree similarity algorithm.