

Content-Based Graph Matching System Using Graph Isomorphism and Sub Graph Isomorphism Algorithms

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Abstract

Finding graph isomorphism and sub graph isomorphism is an important problem in many applications which deal with data modelled as graphs. Graphs can represent biological networks at the molecular, protein, or species level. An important query is to find all matches of a pattern graph to a target graph. The goal of graph matching is to effectively retrieve documents relevant to user's queries. In this paper a graph-theoretical formulation of a content-based graph matching system using the graph isomorphism algorithm and sub-graph isomorphism algorithm is presented.

The proposed system retrieves the graph from the database for given the query graph. The system is divided into two parts. First, the construction of a graph database and representation of the object form of graph information. Second, searching or matching given query graph with the use of graph isomorphism algorithm and sub-graph isomorphism algorithm to retrieve the similar graphs from the database. This paper focuses on Graph representation of object form and graph searching algorithms.