Integration Informatics Laboratory
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Announcement
IsoSearch: Sub-graph Isomorphic Graph Querying System Release
at http://141.217.114.184/IsoSearch/

We are pleased to announce the release of an XSB [1, 2] based sub-graph
isomorphic query engine called IsoSearch [3]. The tool can be found at
http://141.217.114.184/IsoSearch/. The engine is capable of computing all
possible isomorphic subgraphs of a given node labelled data graph and a query
graph completely logically. IsoSearch is capable of handling large graph sizes
similar to human protein-protein interaction networks [4]. The size of the data
and query graph is limited by the capacity of XSB. However, the number of
maximum solutions is limited to 100 since we use XSB's findall feature to
collect all solutions for a graphical visualization. The solutions are displayed
as colored graphs for easy visualization.

The data and query graphs must be in the form of binary predicates called edge
and query respectively. These two graphs can be uploaded as text files, or
pasted in the interface. An example showing how to run this tool is available in
the interface along with a user manual in the help link.

This is a trial release, and we welcome your suggestions and comments on this
tool in our IsoSearch blog page. We are especially interested in reports of
problems while running your query or any error in our computational procedure.
Your suggestions will be used to improve our system.

Publications related to IsoSearch and other projects can be found at our
Integration Informatics Lab home page at http://integra.cs.wayne.edu/.

References:

[1] Prasad Rao, Konstantinos F. Sagonas, Terrance Swift,
    David Scott Warren, Juliana Freire: XSB: A System for
    Effciently Computing WFS. LPNMR 1997: 431-441.

[2] Konstantinos F. Sagonas, Terrance Swift, David Scott Warren:
    XSB as an Efficient Deductive Database Engine. SIGMOD
    Conference 1994: 442-453.

[3] Hasan Jamil, "A Novel Knowledge Representation Framework for
    Computing Sub-Graph Isomorphic Queries in Interaction Network
    Databases", 21st International Conference on Tools with
    Artificial Intelligence, Newark, United States of America,
    November 2009.

[4] Mohammad Shafkat Amin, Anupam Bhattacharjee, Hasan Jamil,
    "A Cytoscape based Integrative Framework for Efficient
    Sub-graph Isomorphic Protein-Protein Interaction Motif
    Lookup", ACM International Symposium on Applied Computing,
    Bioinformatics Track, Sierre, Switzerland, March 2010.

Note: A bibliographic search for logic based sub-graph isomorphism
procedures turned up empty. Any reference to other existing logic
based solutions will be appreciated.