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1st Workshop on Data Management and Control

Knowledge Bases Management using Mobile Agents Architecture

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Abstract - Intelligent and mobile agents are becoming increasingly important, and likely to appear in more and more applications in the near future. The paper discusses the possibilities of the knowledge bases management with a mobile agents architecture. Using this mobile agents architecture knowledge bases have been represented and processed.

Authentication hierarchy based on blind signature

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Abstract—Based on the blind signature scheme, it is discussed the way in which a finite set of users which want to communicate over a network, agreed on a symmetrical encryption and the way in which this key is created. The paper will review a solution in which the two parties are authenticated, based on a secret knowledge and a random string which could be the names of two, to which other data would be added in order to compete for the key's definition validity. The case, in which a hierarchy regarding the access to information will be given, is also treated in this paper.

A Quantum Algorithm for Database Multi-target Search

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Abstract - The factorized quantum search algorithm presented by Grover can locate one desired item in an unsorted database using $O(\sqrt{N})$ queries to factorized oracles. But the algorithm can only solve the problem finding the desired item out of an unsorted database with only one target item. The algorithm presented here proposes to solve the problem with more than one target items in an unsorted database. The goal is achieved by introducing auxiliary file, and converting a complex query request into a sequence of simple queries, and finally into a sequence of calls to the factorized quantum search algorithm.

The query complexity of proposed algorithm is $O(P * Q * M * \log_{4}\{N\})$, where P is the number of the potential simple query requests in the complex query request, Q is the maximum number of calls to the factorized quantum search algorithm of the simple queries, M is the number of the auxiliary files for the property on which the algorithm are searching for desired items.

Knowledge Transfer and Path-based Reasoning in Hyper-schemas

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Abstract—In [Tandareanu, 2008b] we introduced a new representation and reasoning concept derived from the semantic schema structure: the hyper-schemas of various orders. In this paper we give a detailed presentation of the syntactic and semantic computations corresponding to these hyperstructures which are formalized by means of a new knowledge transfer and of a path-based mechanism [Tandareanu, 2008a].

Study on Romanian Black Sea Resorts. Database and Algorithms for Exploring It

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Abstract— In Romania, one of the most popular places for holiday is the Black Sea. In this paper we propose a database model including information about hotels. This information refers to star classification, location, facilities, rates for accommodation, time period, number of days, etc. We create this database model starting from data presented in the catalogs or websites of tourism agencies. We present some algorithms which can be used to explore these data. Our study is focused on rates for accommodation according to the other features. Such a study can help tourists in order to make a good choice for their holiday and can also help hotel managers to develop their business.

Approximate reasoning with contrary observation and premise

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Abstract—The paper presents the results of the Generalized Modus Ponens inference process for a single input single output rule for different implication operators when observation is contrary to premise. The inferred conclusion is obtained using the t-norm

$$t(x; y) = \max((1 + \lambda)(x + y - 1) - \lambda xy, 0), \lambda \geq 1:$$