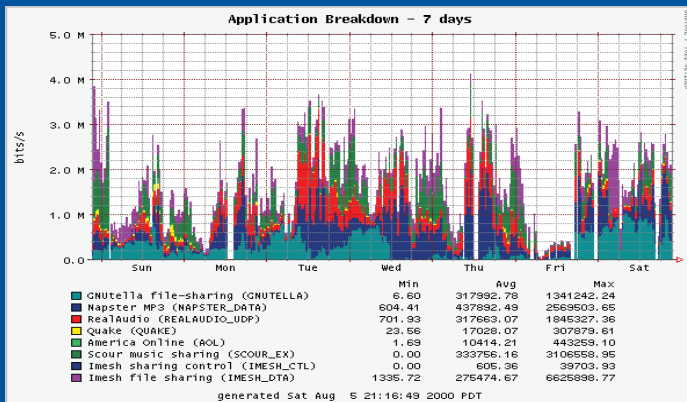
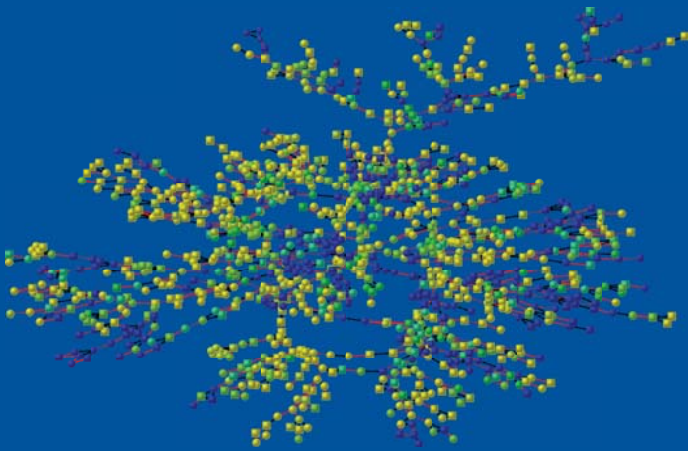




Software Analytics 2009



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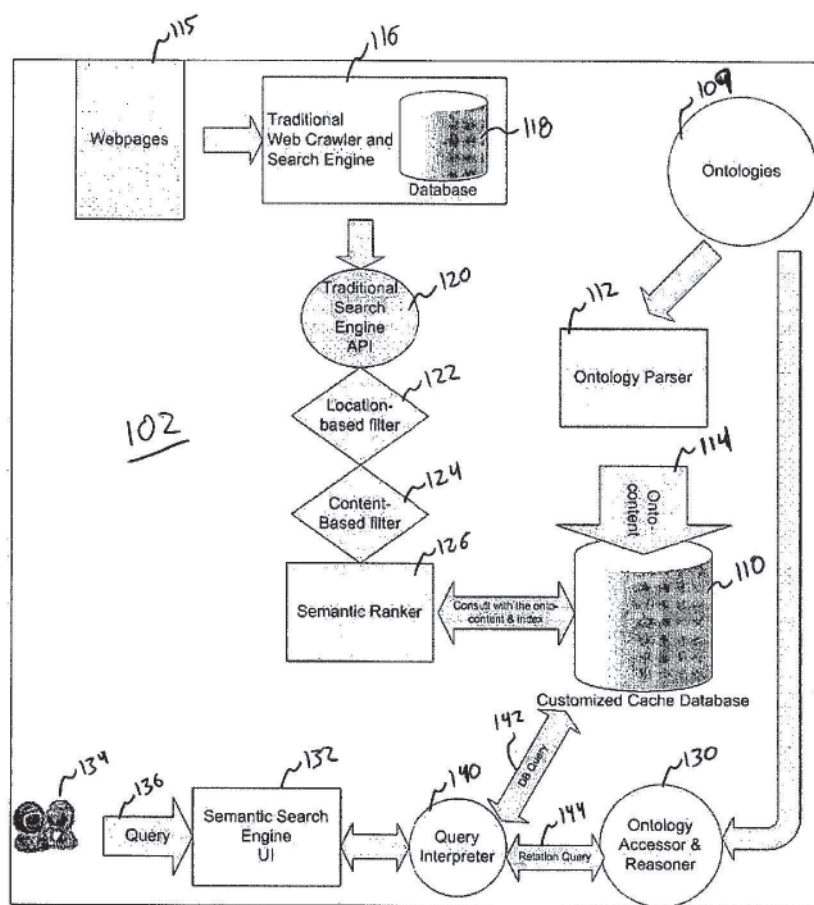
New Algorithm and Architecture for the Automatic and Optimal Design of Real-Time Object/Signal Detectors

SD2007-265

Inventors at UC San Diego have discovered a new and robust method for detecting objects in images, video streams, or signal streams. Many current object recognition methods require numerous training examples to be used to improve system performance. The current method does not have such training size limitations and can thus also be used for the design of real-time object/signal detectors in applications with limited training size availability.

Semantic Search Engine

SD2006-289



Published Patent Application: WO 2008/027503 A2 Patent Abstract:

Systems and methods for populating a database. An ontology is pursued to determine a plurality of keywords. A string-based search engine is utilized to perform a search of documents on a network based on the determined keywords, and at least one document is retrieved. A relation is established between the retrieved document and the ontology, and it is determined if the at least one document is to be stored in the database based on the established relation. If so, the document is stored in the database. The database can be used as part of a standalone or plug-in search engine for retrieving online documents.

Cover Credits (Top to Bottom)

- Macroscopic Internet data measurement and analysis: Dr. K.C. Claffy, P.I. - Technical POC Cooperative Association for Internet Data Analysis (CAIDA) University of California's San Diego Supercomputer Center
- James Fowler is an Associate Professor in the Center for Wireless and Population Health Systems at CALIT2 and the Political Science Department at the University of California, San Diego.
- Professo Manovich (right) with computer-science Ph.D. student So Yamaoka, a member of the Graphics, Visualization and and imaging Technology (Gravity) group at Calit2

Binary Digit Multiplications and Applications

SD2005-046

Description:

University inventors have invented a method for multiplying binary digits in a rapid and memory-efficient manner. It does not use the traditional positional-value system. This method has the additional benefit of using small computers with less memory and can generate bounds (upper and lower) on the significant digits in advance of having the complete multiplication result.

Applications include: linear programming, digit multiplication, computer graphics, and communications.

Published Patent Application: 20060136541

Patent Abstract:

A multiplying system for binary digits. The digits are multiplied in a rectangular memory array, where the digits are placed along the edges, and intersections between 1's form blocks of 1's in the memory array. The blocks of 1's are evaluated based on a weighting assigned to positions within the memory, either directly, or by reducing each block to a reduced block representation. The system can be used for multiplications, partial multiplications, and divisions, as well as applications thereof.

Method and System for Selecting Documents by Measuring Document Quality

SD2003-280

Description :

University researchers at the Jacobs School of Engineering have developed methods for document filtering based on quality, automatically operating to make value judgments for document retrieval. This invention has an application to computer discussion groups, where classification by quality would be too time-consuming if done manually. With this invention, quality ranking may be done automatically, where values and qualities may be assigned, for example, by interestingness, appropriateness, timeliness, humor, style of language, obscenity, sentiment, or combinations thereof.

Issued Patent: 7,200,606

Patent Abstract:

A system and method for document filtering and selection based on quality automatically operates to make value judgments for document retrieval. Items of data, e.g. documents, are automatically associated a value. Items of data may be then selected based upon value, which is not only for the specific subject or topic requested, but also desirable according to certain criteria, including each document's quality. A specific application of the invention is to a filter for computerized bulletin boards. Many of these systems, also known as discussion groups, have thousands of new messages per day. Readers and human editors do not have time to classify new messages by quality quickly. Messages may be ranked by quality automatically, to perform the same function performed by a human editor or moderator. Values and qualities may be assigned by interestingness, appropriateness, timeliness, humor, style of language, obscenity, sentiment, and any combinations thereof, for example.

Data Source Interaction System and Method SD2001-037

Description:

University researchers have a novel technique to perform information mediation across heterogeneous sources even when the sources are hard to integrate. This is accomplished by a novel mediator architecture that allows information sources to be converted into “knowledge sources”. Such a knowledge source not only exports its logical structure and query capabilities to the mediator, but export its ontology, domain constraints and any relationships not apparently obvious from the data. In addition, the mediator allows a domain expert to provide additional domain knowledge in a declarative manner -- this domain knowledge serves as the “glue” that the mediator uses to logically compute how two seemingly unconnected information sources are related. The “glue knowledge” is represented as a graph called the domain map. When a mediator answers a query against an integrated view, it places the results in the context of the domain map -- thus the partial results searched out from different data sources are all represented *in* the domain map, thus connecting them through a commonly accepted domain knowledge framework. This architecture has been successfully applied to different application areas including Neuroscience.

Issued Patent: US 7,533,107

Patent Abstract:

A method and program product for integrating different data sources has steps of obtaining semantic information from each of the different data sources creating a conceptual model of the data source using the semantic information, and accessing one or more secondary knowledge sources. The secondary information sources contain information regarding the relations of data from different of the databases, so that an integrated semantic model of all of the databases may be created. Queries can then be processed using the integrated semantic model.

System and Method for Delivering and Examining Digital Tickets SD1999-115

Description:

This is a novel Internet-based ticket delivery system that provides for secure instant ticket delivery for movies, sporting events, exhibits, and the like. In addition, the system has been utilized in two demonstration projects on campus to further show its utility and efficacy. An online demo can be experienced at <http://philby.ucsd.edu/triton/>.

UC San Diego is currently seeking commercial partners to develop and commercially provide this technology under license for the North American, South American, and European markets. A US patent (7,093,130) has already issued.

Faculty Winners of the Nobel Prize

Currently, we have nine UC San Diego faculty members who are recipients of the Nobel Prize.

Year Won	Recipient	Department
2008	Roger Tsien	Pharmacology
2003	Robert Engle	Economics
2003	Clive Granger	Economics
2002	Sydney Brenner	School of Medicine
1995	Paul Crutzen	Scripps Institution of Oceanography
1995	Mario Molina	Chemistry and Biochemistry
1990	Harry Markowitz	Economics
1975	Renato Dulbecco	School of Medicine
1974	George Palade	School of Medicine



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