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References to Application Areas

Edited by: Erik Sandewall
Linköping University, Sweden

This heading will be used for links to actual or potential application areas where reasoning about actions and change may have a role to play. One of the explicit goals of the present News Journal is to contribute to better links between our area of research and its applications.

[28.11.1997] A while ago we had a plea from Austin Tate and from the present editor about the importance of participating in application areas where methods for reasoning about actions and change are important. The following CfP for a journal issue is interesting from this point of view. Notice that it first mentions research topics in our area, and then it proceeds to invite papers that steer in another direction. Therefore, **although** this particular issue does not focus on actions and change, **still** our area is put forward as highly relevant. Food for thought! - The editor.

CALL FOR SUBMISSIONS

Special Issue of the Journal "Artificial Intelligence in Medicine"

Theme: NET-BASED DECISION SUPPORT IN MEDICINE

Guest-Editor: Lawrence Widman (University of Texas HSC - San Antonio)

Background

The rapid growth of networking, both as the universally accessible Internet and as institutional intranets, has changed one of the fundamental premises of research in artificial intelligence in medicine. Until now, data were often not available in electronic format and professional users would rarely use computers in the course of their daily health care activities. Over the past several years, however, much has changed. Hospitals and large physician practices have installed sophisticated information systems that are truely replacing the paper record and therefore resolve the economic and social barriers to data and to professional users, respectively. Also, the universal acceptance of Web software technology and the promise of Java as a hardware-independent delivery platform have gone far toward resolving technical barriers to the delivery of expert computer technology in the clinical setting. It is fit, therefore, to reexamine the topic of decision support for clinical practice in the context of the new network paradigm that promises to empower both users and software developers.

Many fields of medicine are well-suited as domains for development of decision support systems as their clinical aspects become quantitative, causal, and reasonably well computerized. For example, cardiovascular medicine presents a number of challenges to computer scientists: multilevel causal modeling, reasoning at multiple time scales, reasoning simultaneously in space (anatomic localization) and time, and complexity of interpretation of real clinical records. These challenges obtain in many other areas of medical practice as well. As a practical matter, improved decision support and monitoring tools that improve patient outcomes can reduce health care costs while improving the quality of care. For these reasons, this progress in this area is timely and interesting not only to computer scientists and computer-literate health care providers, but also to health care organizations such as hospital and third-party payors.

Objective of special issue

The objective behind this special issue on "Net-based Decision Support in Medicine" is to report on both applied and reasonable theoretical developments. Applied reports describe implementation and validation of architectures. Because widespread availability of Net connections is so new, reasonable theoretical reports describe prototype systems that explore novel and useful concepts and are therefore worthy of consideration before they are fully validated.

More specifically, papers are expected to cover pertinent topics in networked decision support in medicine. Some examples are:

- Client-server architectures for existing validated expert systems in which one or more design or optimization tradeoffs arose from limitations such as in network bandwidth, computing power in the client computer (e.g., wireless handheld units), interfaces with legacy and/or massive databases.
- Networking issues such as security and/or confidentiality that could not be resolved by straightforward application of asymmetric key cryptography or other standard means.
- Graphical user interface issues relating to the emerging standards of Web browsers, HTML and its extensions, and Java and its variants.
- System design issues arising from interconnection of groups of servers such as, for example, a database server, a UMLS vocabulary server, a computation server, and the client software.

Additional topics will be considered: please send them promptly to the editor (see below) for informal review.

Schedule

All the manuscripts submitted will be subject to a rigorous review process. The special issue will include 4-5 papers of 20-25 manuscript page each, plus an editorial. Manuscripts should be prepared in accordance with the journal "submission guidelines" which are available on request.

January 1, 1998
Submission of tentative title and abstract
to declare intention to submit paper.
Email may be send to widman@sones.uthscsa.edu

April 1, 1998
Receipt of full papers. Three copies of a manuscript
should be sent to:

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May 15, 1998
Notification of acceptance

July 1, 1998
Receipt of final-version of manuscripts

April, 1999
Publication of AIM special issue