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Conceptual Structures: Standards and Practices

7th International Conference
on Conceptual Structures, ICCS'99
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Proceedings



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Preface

With all of the news about the Internet and the Y2K problem, it is easy to forget that other areas of computer science still exist. Reading the newspaper or watching the television conveys a very warped view of what is happening in computer science. This conference illustrates how a maturing subdiscipline of computer science can continue to grow and integrate within it both old and new approaches despite (or perhaps due to) a lack of public awareness.

The conceptual graph community has basically existed since the 1984 publication of John Sowa's book, "Conceptual Structures: Information Processing In Mind and Machine." In this book, John Sowa laid the foundations for a knowledge representation model called conceptual graphs based on semantic networks and the existential graphs of C.S. Peirce. Conceptual graphs constitutes a very powerful and expressive knowledge representation scheme, inheriting the benefits of logic and the mathematics of graphs.

The expressiveness and formal underpinnings of conceptual graph theory have attracted a large international community of researchers and scholars. The International Conferences on Conceptual Structures, and this is the seventh in the series, is the primary forum for these researchers to report their progress and activities. As in the past, the doors were open to admit alternate representation models and approaches.

These proceedings include papers that illustrate the adaptivity of the conceptual graph community and the degree to which this area has matured. First, John Sowa has consented to have a proposed draft standard for conceptual graphs made part of these proceedings. The adoption of a standard within the community is a major landmark in maturity by which a community has reviewed and agreed upon a core set of concepts and practices. Second, there are a number of papers in which conceptual graph based systems compete against other technical approaches to solve the same kind of problem. The ability of this community to provide more than one application is a significant accomplishment. Third, one will notice a number of papers describing applications for very different kinds of problem domains that are based upon this technology. The presence of these papers provides a certain credibility that what has been a research area is now producing systems that can actually be used. Finally, the theory papers, which have long been a standard at this conference, are still present. In our opinion this indicates that researchers still find this to be a fertile field and a valuable approach for investigating tough computational problems.

These proceedings contain 34 papers and are organized into seven major sections: Conceptual Graph Modeling; Natural Language; Applications; SISYPHUS-I; Contexts, Logic, and CGs; Logic; and Position Papers. A new feature was introduced in this conference, position papers, which allow investigators entering into the field to present the basic direction in which their laboratory is heading without having to present the results of what may be rather immature work. In addition, a special track was incorporated into the program this year. The SISYPHUS-I track reports the work of conceptual graph researchers as measured against a standardized testbed application – a resource allocation problem.

We would like to thank the authors, editorial board members, and program committee members for helping to making this conference possible. Without the help

of Bheemeswara Reddy Dwarampudi and Dwyna M. Macdonald, these proceedings wouldn't have been produced. In addition, we would like to thank Bob Bekefi for his help in setting up the computer accounts for this effort.

Finally, on behalf of the organizing committee, we would like to thank the organizations that have sponsored this conference: The Bradley Department of Electrical and Computer Engineering at Virginia Tech, the Division of Continuing Education at Virginia Tech, and Monmouth University. This conference has been held in cooperation with the American Association for Artificial Intelligence.

William Tepfenhart and Walling Cyre

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