

SELECTED PAPERS FROM COOPIS '98 GUEST EDITORS' INTRODUCTION

JAMES GELLER

*Department of Computer and Information Science
New Jersey Institute of Technology Newark
NJ 07102-1982, USA*

FREDERICK H. LOCHOVSKY

*Department of Computer Science
University of Science and Technology Hong Kong, China*

This special issue contains six greatly extended and extensively revised papers that appeared originally at CoopIS '98, the *Third IFCIS International Conference on Cooperative Information Systems* which was held in cooperation with VLDB '98 in New York City in August 1998. In preparation for the conference, the program committee identified seven outstanding papers. The authors of six of these papers expressed their interest to revise their papers for a special journal issue. All submissions to this special issue went through a rigorous round of peer review and a round of editorial review, in addition to the conference review cycle.

We see this special issue as an opportunity to revisit the question of what "Cooperative Information Systems" is all about. The need for such a clarification becomes obvious from both the questions of conference authors and the disagreements at both formal and informal discussions at the conference.

From the outset, it appears that Cooperative Information Systems is one of those fields that is destined to disappear if it is successful. After all, "Who wants *uncooperative* information systems?" Nobody. Thus, once CoopIS is successful, all systems will become cooperative, and there will no longer be a need for a separate field of study. In this respect, CoopIS shares this distinction with other research programs such as those on "Secure Systems", "High Speed Systems," and "Efficient Systems".

But maybe one should mistrust the label and try to delve deeper into the subject matter. Indeed, one is well advised to mistrust labels, as every student should find out during his course of studies. Thus, a course "Introduction to Electrical Engineering" is quite possibly a course on "Maxwell's Equations" and an undergraduate course on "Algorithms" may well be limited to searching and sorting algorithms.

Participants at the conference remarked that Cooperative Information Systems sounded quite like "Computer Supported Cooperative Work (CSCW)" and how would the two fields differ? We feel that before this question is even raised, CSCW needs to find out for itself how it differs (or not!) from Groupware, Computer-Mediated Communication (CMC), Group Support Systems (GSS), Computer Supported Human Interaction (CSHI) and Computer-Mediated Human Interaction (CMHI).^a

Having gone amiss with the label, we are left with trying a top-down intensional approach, or a bottom-up extensional approach. The top-down approach was attempted in "Cooperative Information Systems: a Manifesto"^b The authors of the manifesto define Cooperative Information Systems as consisting of three facets, a Group Collaboration Facet, an Organizational Facet, and a Systems Facet. Each one of these facets is investigated in its own field(s) of study, and it is probably safe to say CSCW overlaps quite well with the Group Collaboration Facet.

Let us switch to the bottom-up approach. What topics are the papers in the proceedings of the previous CoopIS conference on? This should reflect the understanding of the Program Chairs and the Program Committee what CoopIS is about. If that does not provide a solution, we have an additional approach to this question. CoopIS is a young field. There are no formal educational programs in CoopIS. Thus, we can investigate in what areas CoopIS participants have published before CoopIS, and in what areas they have been educated.

At CoopIS '98, sessions were about Distributed Databases, Transactions, Multidatabases, Modeling (of Information), Workflows, Integration (of Information), Heterogeneous Distributed Information Services, Agents, and Web-Based Information Services. From this, a clear trend emerges. Some of the CoopIS papers deal with "classical" database issues, with a noticeable bias towards distributed data and towards information as value-added data. Other publications are "pushing the envelope" into areas which might not be welcomed at a "hard core database conference" such as the integration of databases with the Web.

The background of many of the CoopIS participants and Program Committee members confirms this impression. Looking at the papers themselves, while it is obvious that "the user" is given more attention than in "hard core database work", it also becomes clear that CoopIS is much more formal and algorithmic than work in CSCW. CoopIS seems less concerned with user modeling and systems evaluation with real users than CSCW. Maybe the latter comes as a surprise if one considers the three facets of the manifesto mentioned before, only one of which is system-oriented. Maybe the field needs to grow more into the three facet direction, by fostering interaction with the CSCW community?

^aWe thank Brian Whitworth of the Manukau Institute of Technology in New Zealand for his lucid summary of CSCW terminology in his manuscript "Groupware: Old wine in new bottles".

^bGiorgio De Michelis *et al.* which appeared in M. P. Papazoglou & G. Schlageter's recent book "Cooperative Information Systems" (1998, Academic Press).

Papers selected for this special issue were chosen solely based on quality, not on any real or perceived distribution of subject areas of interest. Nevertheless, even this selection confirms the impression of CoopIS as “databases pushing upwards (toward information) and outwards (toward Cooperation, Distribution and the Web)”.

Zhang *et al.* extend a technique of transaction processing, based on timestamps, towards a combination of short (classical) and long (cooperative) transactions. Schwarz *et al.* are also dealing with interrelated transactions. They present the inclusion of execution dependencies into the transaction closure framework.

Hung *et al.* argue that participants in an AMS (Activity Management System — a more general kind of a Workflow Management System) should be granted the minimal number of privileges necessary for them to perform their jobs.

Hainaut *et al.* describe a set of tools and a concomitant methodology for performing the difficult task of building federated database systems. Gal *et al.*, the recipients of the CoopIS '98 best paper award, describe methods for building and maintaining a semantic model of a complex Web site. This work relies on a repository, as opposed to a plain database, for satisfying the data needs of the application.

Chen *et al.* present a new agent architecture for enabling dynamic, distributed computing beyond what is possible with CORBA or DCOM. The important point about this architecture is that agents themselves can adapt to new problem situations, while maintaining their connections to other participants in the overall distributed system.

We conclude with expressing our gratitude to the authors who were put through a grueling schedule, and the editor in chief, Mike Papazoglou, for making the journal available for this special issue.