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IFIP is the global non-profit federation of societies of ICT professionals that aims at achieving a worldwide professional and socially responsible development and application of information and communication technologies.

IFIP is a non-profit-making organization, run almost solely by 2500 volunteers. It operates through a number of technical committees and working groups, which organize events and publications. IFIP's events range from large international open conferences to working conferences and local seminars.

The flagship event is the IFIP World Computer Congress, at which both invited and contributed papers are presented. Contributed papers are rigorously refereed and the rejection rate is high.

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Socially Aware Organisations and Technologies

Impact and Challenges

17th IFIP WG 8.1 International Conference
on Informatics and Semiotics in Organisations, ICISO 2016
Campinas, Brazil, August 1–3, 2016
Proceedings

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Preface

The 17th International Conference on Informatics and Semiotics in Organisations (ICISO 2016) is an IFIP WG 8.1 Working Conference and part of a series of international events devoted to the latest research and practice in informatics and organizational semiotics. As a pioneer event in the discussion of organizations and technologies from an integrated perspective, this edition of ICISO was especially concerned with the social context in which they exist. This focus is especially important at a time where social responsibility is no longer a differential but a mandatory characteristic of organizations, of their products and processes, as well as of their staff.

Organizational semiotics (OS) is a discipline that studies the nature, characteristics, function, and effect of information and communication in organizational contexts, supporting the understanding and articulation of relevant technical, formal, and social issues. The contribution of this discipline to the understanding, analysis, modelling, design, and implementation of organizational and technical information systems has attracted the attention of researchers and practitioners from many subject areas. The ICISO conferences have become the key focal point for participants from multidisciplinary backgrounds to exchange the development and the state of the art of their theoretical and practical work (see www.orgsem.org for earlier conferences since 1995).

In 2006, the ICISO conference was held for the first time in Brazil, discussing the interface between society, technology, and organizations. Ten years later, for the second time in Brazil, the conference promoted the debate on “Socially Aware Organizations and Technologies: Impact and Challenges,” bringing renowned researchers and professionals from different parts of the world, fostering partnerships, and joining different interested parties in the community. Organizational semiotics, as a study of sign, information, and human communication in organized contexts, will provide a holistic and comprehensive approach with which to examine the issues of the theme from scholarly and practical views. A semiotic perspective can accommodate the individual and the social, the human and the technical demands, at a level of detail that is required for studying, modelling, designing, and engineering organizational and technical systems. Research and practice in the increasingly complex contexts of a society mediated by information and communication technology urge us to rethink and revisit our theories, methods, and techniques, dealing with the challenges of the present and anticipating the questions of the near future.

We received 39 paper submissions from 15 countries, which demonstrates the global dimension of this conference. From these, 16 (41 %) were accepted for presentation as full papers. Moreover, nine manuscripts were accepted as short papers and six as posters. These numbers show the intention of preserving a high level of quality for future editions of this conference, at the same time welcoming new participants with work in progress in the field. The papers are organized into five topics: digital business ecosystems; knowledge management and engineering; organizational semiotics theory and research; semiotics of interactions and socially aware user interface design; trends challenges and

new issues in education, health, and eScience systems. Besides the presentation of scientific papers that show the trends and state of the art on the conference's topics, the event hosted a panel to discuss the future of organizations and technology, and a hands-on workshop in which participants were introduced to and put into practice a socially aware view on the understanding and design of contemporary systems.

The high quality of the papers demanded especial effort from the Program Committee, whose members are highly qualified researchers in the conference topic areas, performing two rounds of paper review. Moreover, ICISO also featured a number of keynote lectures delivered by internationally recognized experts, namely: Prof. Maria Lucia Santaella Braga, from São Paulo Catholic University, director of the Center of Research in Digital Media, one of the honorary presidents of the Latin-American Federation of Semiotics; and Prof. Jeffrey Bardzell, from HCI/Design and new media at the School of Informatics in the Indiana University, USA. We are also very pleased to have a special contribution from Prof. Ronald Stamper and the participation of Prof. Clarisse S. de Souza from PUC-Rio in the conference panel. These special contributions were significant highlights of the conference.

Building an interesting and successful program for the conference required the dedicated effort of many people. We would like to express our thanks to all authors including those whose papers were not included in the program. We would also like to express our gratitude to all the members of the Program Committee and additional reviewers, who helped us with their expertise and valuable time. Furthermore, we thank the invited speakers for their invaluable contribution and for taking the time to prepare their talks. Moreover, we thank the other ICISO 2016 chairs, Roberto Pereira, Heiko H Hornung, and Weizi Li, whose contribution to the conference organization was essential, as well as the valuable work of the student volunteers.

Finally, we gratefully acknowledge the funding agencies supporting the event (CNPq, Capes and FAPESP), and the professional and organizational support from the Institute of Computing, the Nucleus of Informatics Applied to Education, University of Campinas UNICAMP, Brazil, and Informatics Research Centre, Henley Business School, University of Reading, UK.

May 2016

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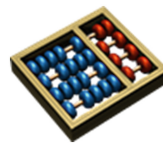
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Abstract of Keynotes

Signification, Design, and Inquiry

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Abstract. As the design of technology has increasingly become implicated in our personal lives, our social worlds, and our physical environments, innovative design methodologies have emerged to take on these challenges. One of these is research through design, which uses design processes not to develop traditional end-user products, but instead to contribute to theory and knowledge about human-computer interaction (HCI) and interaction design. As an emerging practice, research through design faces questions about how it works, what constitutes a good research outcome, how practitioners can build on each other's work, and how it can be made legible to other areas of HCI and interaction design, such as user-centered design. I will present work that seeks to develop epistemological resources for research through design practitioners, including those who are intrigued about it but don't know where to begin. Like other design researchers, I will argue that research through design is best not pursued as a scientific practice. My contribution to this debate is to consider research through design in relation to humanistic knowledge practices, including criticism and aesthetics. I will explore these themes through a dialogue between critical concepts and concrete examples, drawn from the maker movement, critical design, and social computing. And I will argue that research through design, among other things, is distinguished by its modes of signification, with implications for its uptakes into the broader HCI and interaction design communities.

What Is OS? Where did it Come from? How to Proceed? Where Is it Going?

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Abstract. I address these questions within my experience of investigating organisations as information systems. Gathering and analysing data were of little use without a clearer terminology. Even “information” was embarrassingly vague until recognised as a jumble of diverse properties of signs. Thus, “organisational semiotics” became our conceptual framework. Clarifying terminology for empirical investigations remains an important aspect of research. Collecting and analysing data may be only a popular research ritual unless it is justified within a carefully chosen scientific method: Popper’s refutationist method in our case. Popper emphasises the role of imagination in formulating hypotheses that combine clarity, novelty, conciseness and boldness with the precision that exposes them to empirical refutation. The researcher must not take for granted the orthodox theory but discover and question its dominant metaphor. In our case it was a century-old “information flow” metaphor that focuses attention on technology and bureaucracy, leaving the human and social aspects of information unaddressed. This observation revealed the paucity of useful the invariants whose discovery is characteristic of good science. We adopted a “knowledge field” paradigm, leading to previously unknown organisational invariants with huge potential for engineering better organisations. Wide reading, inter-disciplinary interests and sheer delight in ideas motivate research work.

Is Artificial Consciousness Possible?

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Abstract. Against all the arguments that deny the possible simulation of consciousness, there are already numerous computer architectures able to emulate if not all, at least some of the skills of a conscious mind. Taking into account that the goal of a cognitive architecture is to summarize the various results of psychic cognition in a comprehensive computer model, there are already several different architectures, for example, and without any intention of completeness: Qubic (Quantum and Bio-inspired cognitive Architecture for machine Consciousness); Global Workspace, by Baars; CLARION, by Ron Sun, an architecture capable of simple reactive activities to complex cognition. In the connectionist matrix there are several proposals, including still as an example, Pentti Haikonen's architecture that instead of rules, ambitiously proposes to reproduce perceptual processes, internal images, inner speech, pain and pleasure with their internal cognitive functions. Whatever these architectures may be, they still come up against the crucial question whether machines can emulate creativity, emotions and free will. This is where I justify the input of C.S. Peirce's semiotic theory of consciousness not as a solution to the thorny problems that still exist, but as an original vision that can bring us new data on the two issues more finely defining human consciousness: self-consciousness, on the one hand, and the unconscious, on the other.

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