Lecture Notes in Computer Science 3585

Commenced Publication in 1973
Founding and Former Series Editors:
Gerhard Goos, Juris Hartmanis, and Jan van Leeuwen

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Human-Computer Interaction – INTERACT 2005

IFIP TC13 International Conference
Rome, Italy, September 12-16, 2005
Proceedings

Springer

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Library of Congress Control Number: 2005932209

CR Subject Classification (1998): H.5.2, H.5.3, H.5, H.4, I.2.10, K.3, K.4, K.8

ISSN 0302-9743
ISBN-10 3-540-28943-7 Springer Berlin Heidelberg New York
ISBN-13 978-3-540-28943-2 Springer Berlin Heidelberg New York

Typesetting: Camera-ready by author, data conversion by Scientific Publishing Services, Chennai, India
Printed on acid-free paper SPIN: 11555261 06/3142 5 4 3 2 1 0

General Chair's Welcome

It is my privilege to welcome you to Rome, to our INTERACT 2005 conference where, I hope, you will find interesting and stimulating presentations, tutorials, workshops and demos but, above all, we hope you will meet and interact with researchers to share ideas and projects within our field: human-computer interaction.

As a matter of fact, **interaction** is defined as a "mutual or reciprocal action or influence", and observing the two partners (user and computer) while they interact, we would like our future programs to provide creative (unpredictable) responses, after partial execution of the applications, in order to reach the wanted goal.

We live in a world where our lives are dramatically pre-organized, where we can only choose amongst a pre-emptied set of alternatives, mostly repeating all our actions on a day-by-day basis as if we were…machines.

The purpose of scientific research, in our case Computer Science, is to try to better understand the physical – in this case computational – aspects of true life and, if possible, improve the quality of life itself. Within the six different areas where Computer Science must still move forward [1] (Computation, Communication, Interaction, Recollection, Automation and Design), our field of Human-Computer Interaction may well profit from results obtained in all of them, since the tasks we would like to perform require a blended combination of knowledge from such areas.

Sometimes this research area is within the Departments of Computer Science but in some cases it is within Computer Engineering, Communication Sciences or even Psychology in academic institutions and operates within the research and development divisions of some of the most advanced high-tech software companies.

Many authors have underlined the relevance of a number of natural sciences, in cooperation with computer technology, required to improve the quality of interaction, the understanding of commands for given applications, the state of a multimedia computing system, the focus of attention on the screen during program execution. Cognitive science, learning theory, the roles of short term and long term memory together with perception and attention, constitute the necessary ingredients for a soundly based approach to the design of humane interfaces and interactive systems.

We would like to have programs that help us run our lives, but certainly not to be totally run by them! Programs that help us to choose a doctor, rent a house, book a flight, drive us to the correct location, suggest a book to read, translate a full sentence: all trying to satisfy our personal tastes and needs, yet be constrained by our economical resources.

It is a well-known fact that the number of people that will use computers in the future increases but also that different kinds of persons will depend on such machines. Children, adolescents, adults, senior citizens and handicapped persons, may be helped in their jobs/tasks but need tailored applications and an adequate recognition of their skills. As technology becomes more cost-effective, computers are less used for computing but more as communication devices that help humans to elaborate on facts and processes, to enable distant synchronous and asynchronous cooperation (including e-learning), to display information in a meaningful way (as in maps, graphs, diagrams, etc.) and provide answers to a wide variety of problems encountered in jobs, personal tasks and even entertainment.

We will be, sooner or later, not only handling personal computers but also multi-purpose cellular phones, complex personal digital assistants, devices that will be context-aware, and even wearable computers stitched to our clothes…we would like these personal systems to become transparent to the tasks they will be performing. In fact the best interface is an invisible one, one giving the user natural and fast access to the application he (or she) intends to be executed.

The working group that organized this conference (the last of a long row!) tried to combine a powerful scientific program (with drastic refereeing) with an entertaining cultural program, so as to make your stay in Rome the most pleasant one all round: I do hope that this expectation becomes true.

July 2005

Stefano Levialdi, IEEE Life Fellow
INTERACT 2005
General Chairman

[1] Peter J. Denning, ACM Communications, April 2005, vol. 48, N° 4, pp. 27-31.

Editors' Preface

INTERACT is one of the most important conferences in the area of Human-Computer Interaction at the world-wide level. We believe that this edition, which for the first time takes place in a Southern European country, will strengthen this role, and that Rome, with its history and beautiful setting provides a very congenial atmosphere for this conference.

The theme of INTERACT 2005 is *Communicating Naturally with Computers*. There has been an increasing awareness among interactive systems designers of the importance of designing for usability. However, we are still far from having products that are really usable, considering that usability may have many different meanings depending on the application domain. We are all aware that too often many users of current technology feel frustrated because computer systems are not compatible with their abilities and needs and with existing work practices. As designers of tomorrow's technology, we are responsible for creating computer artefacts that would permit natural communication with the various computing devices, so that communicating with computers would be more like communicating with people, and users might enjoy more satisfying experiences with information and communication technologies. This need has given rise to new research areas, such as ambient intelligence, natural interaction, end-user development, and social interaction.

The response to the conference has been positive in terms of submissions and participation. The contributions, especially the long papers, of which only 70 submissions were accepted out of 264, were carefully selected by the International Programme Committee. The result is a set of interesting and stimulating papers that address such important issues as haptic and tangible interfaces, model-based design, novel user interfaces, search techniques, social interaction, accessibility, usability evaluation, location-awareness, context of use, interaction with mobile devices, intelligent interfaces, multimodal interfaces, visualization techniques, video browsing, interfaces for children, and eye-tracking. The interest shown in the conference has truly been world-wide: if we consider both full and short papers we have authors from 24 countries in 5 continents.

There is a good balance of contributions from academia and industry. The final programme of the symposium includes three technical invited speakers: Bill Buxton on Sketching and Experience Design; Flavia Sparacino on Intelligent Architecture: Embedding Spaces with a Mind for Augmented Interaction; and Steven Pemberton on the Future of Web Interfaces. In addition to the 70 full papers, the programme includes 53 short papers, as well as interactive demos that will allow participants to have direct experience of innovative results, tutorials, workshops, SIGs, panels, and a doctoral consortium.

Particularly noteworthy in the programme are some topics that have been stimulating increasing interest. By way of example, those related to interaction with mobile devices, given that recent years have seen the introduction of many types of computers and devices (e.g., cellphones, PDAs, etc.) and the availability of such a wide range of devices has become a fundamental challenge for designers of interactive software systems. Users need to be able to seamlessly access information and services, regardless of the device they are using. Even when the system or the

environment changes dynamically, they would like to see their interfaces migrate dynamically from one device to another, allowing them to continue their tasks from where they left off. In general, the continuous development of new research topics shows how the field is able to dynamically evolve and face both new and longstanding challenges. The results obtained are never an arrival point, but they form the basis for new research and results, and INTERACT is one of the best forums in which to present and discuss them.

We are also happy to announce that for the first time the INTERACT proceedings will be made available in a digital library. This is an important and useful innovation for both authors and the HCI community, as the entire contents will remain accessible and searchable over the years even for all those who have not attended the conference.

Last, but not least, let us thank all those who contributed to the success of the conference, including the authors, the International Programme Committee and the organizers. We are also grateful for the financial support of the sponsoring organizations. A special thanks goes to our collaborators Carmelo Ardito, Silvia Berti, Paolo Buono, Antonio Piccinno and Carmen Santoro for their invaluable support in editing these proceedings and organizing the conference.

July 2005

Maria Francesca Costabile and Fabio Paternò
INTERACT 2005
Conference Co-chairs

IFIP TC13

Established in 1989, the International Federation for Information Processing Technical Committee on Human-Computer Interaction (IFIP TC13) is an international committee of 29 member national societies and 5 Working Groups, representing specialists in human factors, ergonomics, cognitive science, computer science, design and related disciplines. INTERACT is its flagship conference, staged biennially in different countries in the world. The next INTERACT conference, INTERACT 2007, will be held in Brazil.

IFIP TC13 aims to develop a science and technology of human-computer interaction by encouraging empirical research, promoting the use of knowledge and methods from the human sciences in design and evaluation of computer systems; promoting better understanding of the relation between formal design methods and system usability and acceptability; developing guidelines, models and methods by which designers may provide better human-oriented computer systems; and, co-operating with other groups, inside and outside IFIP, to promote user-orientation and "humanisation" in system design. Thus, TC13 seeks to improve interactions between people and computers, encourage the growth of HCI research and disseminate these benefits world-wide.

The main orientation is towards users, especially the non-computer professional users, and how to improve human-computer relations. Areas of study include: the problems people have with computers; the impact on people in individual and organisational contexts; the determinants of utility, usability and acceptability; the appropriate allocation of tasks between computers and users; modelling the user to aid better system design; and harmonising the computer to user characteristics and needs.

While the scope is thus set wide, with a tendency towards general principles rather than particular systems, it is recognized that progress will only be achieved through both general studies to advance theoretical understanding and specific studies on practical issues (e.g., interface design standards, software system consistency, documentation, appropriateness of alternative communication media, human factors guidelines for dialogue design, the problems of integrating multi-media systems to match system needs and organizational practices, etc.).

IFIP TC13 stimulates working events and activities through its Working Groups. WGs consist of HCI experts from many countries, who seek to expand knowledge and find solutions to HCI issues and concerns within their domains, as outlined below.

In 1999, TC13 initiated a special IFIP Award, the Brian Shackel Award, for the most outstanding contribution in the form of a refereed paper submitted to and delivered at each INTERACT. The award draws attention to the need for a comprehensive human-centred approach in the design and use of information technology in which the human and social implications have been taken into account. Since the process to decide the award takes place after papers are submitted for publication, the award is not identified in the Proceedings.

WG13.1 (Education in HCI and HCI Curricula) aims to improve HCI education at all levels of higher education, coordinate and unite efforts to develop HCI curricula and promote HCI teaching;

WG13.2 (Methodology for User-Centred System Design) aims to foster research, dissemination of information and good practice in the methodical application of HCI to software engineering;

WG13.3 (HCI and Disability) aims to make HCI designers aware of the needs of people with disabilities and encourage development of information systems and tools permitting adaptation of interfaces to specific users;

WG13.4 (also WG2.7) (User Interface Engineering) investigates the nature, concepts and construction of user interfaces for software systems, using a framework for reasoning about interactive systems and an engineering model for developing user interfaces;

WG13.5 (Human Error, Safety and System Development) seeks a framework for studying human factors relating to systems failure, develops leading edge techniques in hazard analysis and safety engineering of computer-based systems, and guides international accreditation activities for safety-critical systems;

WG13.6 (Human-Work Interaction Design) aims at establishing relationships between extensive empirical work-domain studies and HCI design. It will promote the use of knowledge, concepts, methods and techniques that enables user studies to procure a better apprehension of the complex interplay between individual, social and organisational contexts and thereby a better understanding of how and why people work in the ways that they do.

New Working Groups are formed as areas of significance to HCI arise.
Further information is available at the IFIP TC13 website: http://www.ifip-hci.org/

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