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# Information Quality in e-Health

7th Conference of the Workgroup  
Human-Computer Interaction and Usability Engineering  
of the Austrian Computer Society, USAB 2011  
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Proceedings

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# Preface

The topic of the USAB 2011 conference is of tremendous importance: information quality in healthcare. We envision this as the means to bridge the hiatus theoreticus, and as a means to bring technology and medicine closer together. While some aspects of human factors of technology have already been incorporated into medical informatics, information quality combines aspects understood by both fields.

Medical information systems are already highly sophisticated; however, while computer performance has increased exponentially, human cognitive evolution cannot advance at the same speed. Consequently, the focus on interaction and communication between humans and computers is of increasing importance in medicine and healthcare. The daily actions of medical professionals must be the central concern of any innovation. Simply surrounding and supporting them with new and emerging technologies is not sufficient if these increase rather than decrease the workload. Information systems are a central component of modern knowledge-based medicine and health services; therefore, it is necessary for knowledge management to continually be adapted to the needs and demands of medical professionals within this environment of steadily increasing high-tech medicine. Information processing, in particular its potential effectiveness in modern health services and the optimization of processes and operational sequences, is also of increasing interest.

It is particularly important for medical information systems (e.g., hospital information systems and decision support systems) to be designed with the daily schedules, responsibilities and exigencies of the medical professionals in mind. Within the context of this symposium our end users are medical professionals and justifiably expect the software technology to provide a clear benefit: to support them efficiently and effectively in their daily activities.

In biomedicine, healthcare, clinical medicine and the life sciences, professional end users are confronted with an increased mass of data. Research in human-computer interaction (HCI) and information retrieval (IR) or knowledge discovery in databases and data mining (KDD) has long been working to develop methods that help users to identify, extract, visualize and understand useful information from these masses of high-dimensional and mostly weakly structured data. HCI and IR/KDD, however, take very different perspectives in tackling this challenge; and historically, they have had little collaboration. Our goal is to combine these efforts to support professionals in interactively analyzing information properties and visualizing the relevant information without becoming overwhelmed. The challenge is to bring HCI and IR/KDD researchers to work together and hence reap the benefits that computer science/informatics can provide to the areas of medicine, healthcare and the life sciences.

Working in an interdisciplinary area requires the ability to communicate with professionals in other disciplines and the willingness to accept and incorporate their points of view.

USAB 2011 was organized in order to promote a close collaboration between software engineers, biomedical engineers, psychology researchers and medical professionals.

USAB 2011 received a total of 103 submissions. We followed a careful and rigorous two-level, double-blind review, assigning each paper to a minimum of three and maximum of six reviewers from our international scientific board. On the basis of the reviewers' results only 18 full papers were accepted (an acceptance rate of approx. 18%). Additionally, 29 short papers and 2 posters were accepted; resulting in a total of 49 regular papers plus 2 keynote papers (51 contributions) from 21 different countries: USA, UK, Japan, India, Iran, Korea, Finland, Italy, Cyprus, Germany, Austria, Portugal, Switzerland, Poland, The Netherlands, Belgium, Slovenia, Croatia, Greece, Turkey, and Slovakia.

The organizers saw USAB 2011 as a bridge within the scientific community, between technology and medicine. The people who gathered together to work for this conference showed great enthusiasm and dedication.

We cordially thank each and every person who contributed towards making USAB 2011 a success, for their participation and commitment: the authors, reviewers, partners, organizations, supporters, the team of the Research Unit Human-Computer Interaction for Medicine and Health Care (HCI4MED) of the Institute of Medical Informatics, Statistics and Documentation of the Medical University Graz and all the volunteers. Without their help, this bridge would never have been built.

November 2011

Andreas Holzinger  
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