

# Special Issue on Human-Computer Interaction

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Published online: 15 March 2012  
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Human-Computer Interaction (HCI; original name: man-machine interaction) is a term known since more than 30 years. The aim of HCI research is to intelligently assist users in improving the interaction with computers (in the sense that this interaction should become more user-friendly and better tailored to the needs and abilities of the users and the capabilities of the involved devices). HCI has its roots in other disciplines, especially in ergonomics and human factors. It is a multi-disciplinary research field, populated by researchers and practitioners from areas like psychology, cognitive science, ergonomics, sociology, computer science, graphic design, business, and more.

This special issue on HCI reflects some of the main roads of current research in HCI. It represents a nice multifaceted mix of world-renowned experts from many different disciplines. A good starting point for reading is the very first article of this special issue, “Human-Computer Interaction—Introduction and Overview”, which takes the reader from research to practice, from computer science to cognitive psychology, and from past to future. One of the highlights of this issue is the interview with Turing award winner Alan Kay, who reflects on past, present and future of HCI.

I wish to thank the KI editors for inviting me as a guest editor for this special issue of their journal. Furthermore, I want to thank all authors who have invested so much energy in their research work and contributed to this special issue on HCI. I should also not forget to mention the many reviewers who really helped to strongly improve this issue with lots of valuable comments and suggestions.

I wish all readers a pleasant reading.

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## 1 Content

### 1.1 Fachbeiträge

- Jeffrey Bradshaw, Marco Carvalho, Larry Bunch, Tom Eskridge, Paul Feltovich, Matt Johnson, and Dan Kidwell: *Sol—An Agent-Based Framework for Cyber Situation Awareness*
- Shah Rukh Humayoun, Antonella Poggi, Tiziana Catarci, and Alan Dix: *Task-based User-system Interaction*
- Margit Pohl, Sylvia Wiltner, Silvia Miksch, Wolfgang Aigner, and Alexander Rind: *Analysing Interactivity in Information Visualisation*
- Daniel Sonntag: *Collaborative Multimodality*
- Gerrit van der Veer: *Designing for a Moving Target*

### 1.2 Projekte

- Daniel Cernea, Peter-Scott Olech, Achim Ebert, and Andreas Kerren: *Measuring Subjectivity—Supporting Evaluations with the Emotiv EPOC Neuroheadset*
- Orsolya Emoke Juhasz, Thora Tenbrink, and Barbara Gruter: *Visual Versus Verbal Location Information on the iPhone*

### 1.3 Interview

- Interview with Alan Kay (Viewpoints Research Institute, president)

### 1.4 Dissertationen

- Shah Rukh Humayoun: *Incorporating Usability Evaluation in Software Development Environments*

## 2 Service

The following compilation of resources related to Human-Computer Interaction should provide the reader with a starting basis for further reading and publishing in this domain.

### 2.1 HCI in the Web

- ACM SIGCHI (Special Interest Group on Computer Human Interaction): <http://www.sigchi.org>
- Gesellschaft für Informatik e.V. (GI), Fachbereich „Mensch-Computer-Interaktion“: [www.gi.de/gliederungen/fachbereiche/mensch-computer-interaktion-mci](http://www.gi.de/gliederungen/fachbereiche/mensch-computer-interaktion-mci)
- IFIP Technical Committee on Human-Computer Interaction (TC13): [www.tc13-ifip.org](http://www.tc13-ifip.org)
- IEEE Computer Society, Task Force on Human Centered Computing: <http://www.human-centered.org>

### 2.2 Conferences and Workshops

- CHI: <http://www.sigchi.org/conferences>
- ECCE: <http://www.eace.net>
- ECSCW: <http://www.ecscw.org>
- HCI International: <http://www.hci-international.org>
- INDIA HCI: <http://www.indiahci.org>
- INTERACT: [www.interact-ifip.org](http://www.interact-ifip.org)
- IUI: <http://www.iuiconf.org>
- UIST: <http://www.acm.org/uist>
- HCIV (workshop series): <http://www.hciv.de>

### 2.3 Books and Journals

- B. Buxton. *Sketching User Experience: Getting the Design Right and the Right Design*. Morgan Kaufmann, 2007

- S. Card, T. Moran, A. Newell. *The Psychology of Human-Computer Interaction*. Lawrence Erlbaum, 1986.
- A. Dix, J. Finlay, G. Abowd, R. Beale. *Human-Computer Interaction*. Prentice Hall, 3rd edition, 2004
- A. Ebert, A. Dix, N. Gershon, M. Pohl. *Human Aspects of Visualization*. Springer, 2011
- A. Kerren, A. Ebert, J. Meyer. *Human-Centered Visualization Environments*. Springer, 2007
- J. Lazar, J. Feng, H. Hochheiser. *Research Methods in Human-Computer Interaction*. Wiley, 2010
- J. Maeda. *The Laws of Simplicity*. MIT Press, 2006
- A. Sears, J. Jacko. *Human-Computer Interaction Handbook*. Lawrence Erlbaum, 2nd edition, 2007
- J. Preece, Y. Rogers, H. Sharp. *Interaction Design: Beyond Human-Computer Interaction*. 3rd edition, Wiley, 2011
- B. Shneiderman, C. Plaisant. *Designing the User Interface: Strategies for Effective Human-Computer Interaction*. 5th edition, Pearson Addison-Wesley, 2009
- G. van der Veer. *Human Computer Interaction: A Multi-disciplinary Approach*. McGraw Hill, 2004
- G. van der Veer, J. Carroll. *Cognitive Task Modeling (Synthesis Lectures on Human-Centered Informatics)*. Morgan & Claypool, 2011
- ACM: *interactions* (ACM magazine)
- ACM: *Transactions on Computer-Human Interaction*

### 2.4 Tools for GUI Design and Prototyping

- Adobe Flash Catalyst: <http://www.adobe.com/products/flashcatalyst.html>
- Apple Cocoa Interface Builder (part of Xcode): <http://developer.apple.com/technologies/tools>
- Microsoft Expression Blend/Silverlight: <http://www.microsoft.com/expression>
- Qt Creator IDE: <http://qt.nokia.com/products>