# Child Computer Interaction: Workshop on UI Technologies and Educational Pedagogy

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## Abstract
Given the growth of Child Computer Interaction research and of the rapid adoption of interactive technologies as teaching tools, next generation HCI technologies play an important role in the future of education. Educators rely on technology to improve/adapt learning to the pedagogical needs of learners, thus the HCI community needs to examine how these concepts can be matched to contemporary paradigms in Educational pedagogy. The classroom is a challenging environment for evaluation, thus new interaction techniques need to be established to prove the value of new HCI interactions in the educational space. This workshop provides a forum to discuss key HCI issues facing next generation education ranging from whole class interactive whiteboards, small group interactive multi-touch tables, and individual personal response systems in the classroom and fits into the CHI 2011 featured community Child Computer Interaction.

**Keywords:** Next generation HCI, Child-Computer Interaction, Education, pedagogy, multitouch, gestures, large displays.

**ACM Classification Keywords:** H.5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous.

**General Terms:** Design, Human Factors.

## Topics of Interest

Focus will be on emerging UI technologies and their potential impact on education

- Gestural input, multitouch, large displays multi-display interaction, response systems
- Mobile Devices/mobile & pervasive learning
- Tangible, VR, AR & MR, Multimodal interfaces, universal design, accessibility
- Console gaming, 3D input devices, 3D displays
- Co-located interaction, presentations, tele-presence, interactive video
- Child Computer Interaction, Educational Pedagogy, learner-centric, adaptive "smart" applications
- Empirical methods, case studies, linking of HCI research with educational research methodology
- Usable systems to support learning and teaching: Ecology of learning, any where, anytime, (UX of cloud computing to support teaching and learning)

## Workshop Plan

*Before the workshop*

We will publish the workshop proceedings on our web site, and highlight the contributions of the previous year. This will attract higher quality submissions for the workshop, and will increase the exposure of the workshop before and after the actual event.

The call for papers and participation will be distributed in several research communities, including Tabletops and Interactive Surface, UIST, IUI, and industry trade shows. We also plan to promote the workshop through the CHI website, last year's workshop site, and our Facebook group. The previous year's workshop was very successful and we expect word of mouth to attract others to our workshop.

*At the workshop*

The workshop will have interdisciplinary appeal. We expect participation by scientists working in all areas covered by the conference, as well as those from several other disciplines (e.g. education sector, cognitive science, information visualization, interaction design, psychology). We intend to take advantage of the disciplinary diversity at the workshop to begin a dialog and set the stage for future cooperation. Industry scientists and engineers working in application areas (e.g. interactive technology and novel interfaces for education) will also be encouraged to attend the workshop. The workshop will include 10-12 presentations, several demos, and a panel discussion. We will especially encourage young scientists and Ph.D. students to submit papers. To promote exchange of ideas, a dedicated discussant will be appointed for each paper. This person will have the task of preparing comments and questions and moderating the discussion about the paper. All participants will receive the papers before the workshop and are asked to prepare one discussion question for each paper. This question can relate to a particular strength, to open areas of the paper, or to ideas for future work.

In addition to the workshop organizers, we have already prepared a list of additional program committee members. PC members and the organizers will advertise the workshop in different related mailing lists and will proactively ask potential participants to submit

a paper. The workshop webpage (http://ChildComputerInteraction.edwardtse.com) will be used to advertise the workshop and will provide all related information regarding focus, submission and attendance. Our goal is to have at least three reviews for each submission, so that the PC members can use their own background as well as the perspectives of at least three other researchers to make the decisions regarding the final program of the workshop. We would like to include papers of workshops in the supplementary proceedings of CHI 2011 if possible. This will attract higher quality submissions for the workshop, and will increase the exposure of the workshop before and after the actual event. We plan to publish revised versions of selected papers in a special journal issue, e.g. an article in the Interactions Magazine.

A single day workshop is expected to provide sufficient time for prospective presentations and discussions. At this year's workshop, we want to further deepen the exchange of ideas and support the direct discussion between the participants. Presentations will be given consecutively. The following discussion phase is subdivided into two parts: (1) *encounter sessions*, where presenters spread out in the room, giving the audience the possibility to directly approach and talk to them (comparable to the discussions during poster sessions) and (2) *plenary sessions*, where both presenters and participants engage in an open, moderated discussion. The plenary session also gives the opportunity to note down important aspects, which can serve as input for the wrap up session in the afternoon. This results in the following agenda:

- 10 min. – Introduction and motivation for workshop
- 30 min. – Quick group introduction activity
- 20 min. – Collection of key interests from workshop attendees.

*Mid Morning break*

- 1 hour – Paper presentations from workshop attendees about HCI design challenges in creating technologies for education
- 30 min. – Encounter session
- 30 min. – Plenary session

*Lunch break*

- 1 hour – Video sharing about educational practices and technology applications.
- 30 min. – Encounter sessions
- 30 min. – Plenary session

*Short Afternoon break*

- 1 hour – Team wrap up session to summarize the workshop's outcomes and produce a workshop poster.

## Organizers

To capture the broadest range of opinions in our workshop, we constructed a team of experts with unique background experiences.

Edward Tse is a Project Research Leader at SMART Technologies. He helped in transitioning the SMART Table from a research concept to a commercial product and continues to lead development of new educational product concepts and product innovations.

Johannes Schöning is a senior researcher German Research Centre for Artificial Intelligence DFKI in Saarbrücken, Germany. His research interests include spatial information systems, intelligent user interfaces, Mobile augmented reality and DIY multi-touch surfaces.

Jochen Huber is a doctoral researcher at Technische Universität Darmstadt, Germany. He is involved with the research training group on e-learning funded by the German Research Foundation (DFG). His interests include designing novel interaction techniques for mobile learning scenarios and interaction with large multimedia information spaces.

Lynn Marentette is a school psychologist who also has a background in HCI, ubiquitous computing, games, and educational technology. She works in educational settings that have rapidly become "technology rich".

Richard Beckwith is a Research Psychologist with Intel Labs' Interaction and Experience Research division. Before Intel, he was a Research Associate Professor at Northwestern University. He did his PhD work at Teachers College, Columbia University.

Yvonne Rogers is a professor of Human-Computer Interaction in the Computing Department at the Open University in the UK. Her research focuses on augmenting and extending everyday, learning and work activities with a diversity of interactive and novel technologies.

Max Mühlhäuser is a professor of Computer Science, leading the tele-cooperation group at Technische Universität Darmstadt, Germany. He has over 300 publications in the areas of ubiquitous computing (systems, HCI, and security aspects), E-learning, and distributed multimedia software engineering.

## Program Committee

The workshop organizers will serve as the program committee. Each workshop organizer will review a number of submissions to determine the final selection of papers.

Workshop organizers are also expected to publicize the event in more scientific communities, and they will play an important role in making the selection from the submitted papers, based on peer reviews. Our goal is to review each submission from a pedagogical and HCI perspective. PC members will then consolidate their reviews into a final program for the workshop.

## Main Contact

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