chi+med
making medical devices safer

Update 3

February 2011

Welcome to the third CHI+MED project update. We start our second year with advances in the science of people, devices and situations, a growing community of research staff, and plans for more workshops. Since our last newsletter we've participated in an all-project meeting in October, with a research keynote given by Prof Todd Johnson of the University of Kentucky, and in January the group met for a facilitated 'Creativity@home' day exploring public engagement opportunities (see below).

Ann Blandford, a.blandford@ucl.ac.uk

New publications

In addition to several papers presented during CHI 2010, the group had three short articles in the Autumn 2010 edition of "Interfaces", a quarterly publication from the British Computer Society. Several further papers have recently been accepted or submitted for conferences such as CHI2011 and BCS-HCI 2011. More information can be found in our research publications section. BCS-HCI 2011 has the theme of "Health, Wealth and Happiness", and Gregory Abowd (who chairs the CHI+MED steering committee) will be presenting a keynote talk there.

Richard Young, r.m.young@ucl.ac.uk

New colleagues

We are delighted to welcome the most recent members of CHI+MED: Abigail Cauchi, Mark Davies and Karen Li (Swansea), Paolo Masci and Huayi Huang (Queen Mary) as well as Paul Noble, Atish Rajkomar, Sandy Gould and Sarah Wiseman (UCL). You can see a full list of researchers and collaborators here.

New ways of engaging

Since our last update we've been developing additional ways of reaching our wider audiences via social media sites and also looking at ways to use online tools (such as LinkedIn and bulletin boards) to help effective communication within the project. You can now find CHI+MED on Twitter and YouTube, with commentary on the wider application of our research on our new blog.

Dominic Furniss has created a series of short films which highlight aspects of poor interaction design; these have been used in a variety of settings including on the CHI+MED blog and in teaching MSc students. ***Paul Curzon*** has used one of the videos, "Microwave racing", with school children; their feedback has been very enthusiastic.

Paul has also developed a web-based tool to help CHI+MED capture evidence about these types of interactions so that we can evaluate how well we're getting our information out, and engaging with our stakeholders.

Jo Brodie, jo.brodie@ucl.ac.uk;

Creativity@home

We held a one-day meeting in January, funded by the EPSRC's Creativity@home scheme, to understand more about the benefits of stakeholder engagement (for the CHI+MED project, for the stakeholders and for the individuals working on the project) and to cultivate ideas for new ways of engaging with them. Another workshop is scheduled for March.

CHI+MED workshops

Scientists from CHI+MED will be hosting the EICS4Med 2011 (Engineering Interactive Computing Systems for Medicine and Health Care) workshop at EICS in Pisa, in June.

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Chris Vincent (from UCL) will be organising a workshop for invited medical device designers to discuss their current development practices and their needs for resources, tools and techniques to support practice – all with a focus on interaction design. This will feed back into the future activities of the rest of the programme, ensuring that the basic science of CHI+MED is relevant to the needs of practice.

Chris Vincent, c.vincent@ucl.ac.uk

Project updates

Reasoning about System Design

Delivering medical treatment to patients is a complex task carried out by a team of care-givers. A key issue in helping them to avoid mistakes is the way the whole work system has been designed. It is important to design the physical layout, the procedures followed and the tools used from an understanding of the care-givers' needs. The DiCoT (Distributed Cognition in Teamwork) method is a structured way of reasoning about a work system design from the point-of-view of its users. We are formalising DiCoT – that is providing a mathematical description of it. The expected benefits of this formalisation are:

(i) to provide human-computer interaction experts (and, to a lesser extent, stakeholders) with a non-ambiguous but intuitive language to describe medical work practice and work setting
(ii) to enable formal methods experts to devise analytical tools and methodologies to reason about medical system designs, to show, for example, that necessary properties about their safety do indeed hold
(iii) to support both human-computer interaction and formal methods experts in reasoning about DiCoT itself, in order to better understand and improve the approach.

Paolo Masci, paolo.masci@eecs.qmul.ac.uk

Working creatively with industry

Karen Li and ***Abigail Cauchi*** attended the 7th NHS Training For Innovation Stakeholder workshop in London in December. This provided an opportunity to meet medical device educators from NAMDET and learn about their e4E project (e-learning for Electronics, an online training package for high risk medical devices, funded by the Department of Health).

An ongoing theme of CHI+MED's work is learning about the needs of the medical device industry so that our research findings can be used effectively by designers and users to increase patient safety. Appropriate training is one of several needs and CHI+MED is investigating ways of contributing expertise (for example on human factors) to training programmes. Raising awareness among trainers of the CHI+MED project and how it can help them is an important first step.

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