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Extended Abstract
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Machine Learning 2018: Playful and artistic smart material interfaces- Anton Nijholt -University of Twente

Anton Nijholt
University of Twente, Netherlands

In this discussion we cause to notice the developing field of savvy material interfaces. These epic composites, that at times are as of now celebrated as the response for the 21st century mechanical necessities are by and large alluded to as materials that are fit for detecting the earth and effectively reacting to natural changes by changing their physical properties. That is, shrewd materials have physical properties which can be changed or constrained by outer upgrades like electric or attractive fields, light, temperature or stress. Shape, size and shading are among the properties which will be changed. Brilliant material interfaces are physical interfaces that use these materials to detect the earth and show reactions by changing their physical properties. Some normal shrewd materials show up inside the kind of polymers, earthenware production, memory metals or hydro-gels. This discussion targets animating innovative work in interfaces that utilize such brilliant materials. Shrewd material interfaces are frequently applied in a few areas and utilized for different purposes: practical, open and masterful . We will likewise examine our own encounters with shrewd material interfaces. We will show tests of innovative curios structured by understudies of the Fine Arts Academy in Venice and by grade younger students utilizing thermo-chromic and conductive ink for the plan of â€electronicâ Origami. In this paper we draw attention to the emerging field of smart material interfaces. These novel composites, that in some cases are already celebrated as the answer for the 21st century's technological needs, are generally referred to as materials that are capable of sensing the environment and actively responding to environmental changes by changing their physical properties. Smart materials have physical properties that can be changed or controlled by external stimuli such as electric or magnetic fields, light, temperature or stress. Shape, size and color are among the properties that can be changed. Smart material interfaces are physical interfaces that utilize these materials to sense the environment and display responses by changing their physical properties. Common smart materials appear in the form of polymers, ceramics, memory shape alloys or hydro-gels. This paper aims at stimulating research and development in interfaces that make novel use of such smart materials. Emerging pervasive technologies like smart textiles make it possible to develop new and more accessible healthcare services for patients independently of their location or time. However, none of these new e-health solutions guarantee a complete user acceptance, especially in cases requiring extensive interaction between the user and the solution. So far, researchers have focused their efforts on new interactions techniques to improve the perception of privacy and confidence of the people using e-health services. In this way, the use of smart everyday objects arises as an interesting approach to facilitate the required interaction and increase user acceptance. Such Smart Daily Objects together with smart textiles provide researchers with a novel way to introduce sophisticated sensor technology in the daily life of people. This work presents a sensorized smart toy for assessment of psychomotor development in early childhood. The aim of this work is to design, develop, and evaluate the usability and playfulness of a smart textile-enabled sensorized toy that facilitates the user engagement in a personalized monitoring healthcare activity. To achieve this objective the monitoring is based on a smart textile sensorized toy as catalyzer of acceptance and multimodal sensing sources to

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monitor psychomotor development activities during playtime.

Biography

Anton Nijholt received his PhD in computer science from the Vrije Universiteit in Amsterdam. He held positions at various universities, both inside and outside the Netherlands. In 1989 he was appointed Full Professor at the University of Twente in the Netherlands. His main research interests are Human-computer interaction with a focus on playful interfaces, entertainment computing, and humor generation. He edited various books, most recently on playful interfaces, social collective intelligence, and Brain-computer interaction. A new book on 'Playable Cities' will appear in 2016. Together with many of the more than fifty PhD students he supervised, he wrote numerous journal and conference papers on these topics. He did acted as program chair and general chair of many large international conferences, including ACE (Advances in Computer Entertainment), ICMI (International Conference on Multimodal Interfaces), ICEC (International Conference on Computer Entertainment), ACII (Affective Computing and Intelligent Interaction), CASA (Computer Animation and Social Agents), INTETAIN (Intelligent Technologies for Interactive Entertainment), FG (Faces & Gestures), and IVA (Intelligent Virtual Agents). Recent (2015-2016) keynote talks at various conferences have been on humor engineering in smart environments, playable cities and on the future of brain-computer interfaces for non-clinical applications. He is a Chief editor of the specialty section Human-Media Interaction of the journals Frontiers in Psychology, Frontiers in Digital Humanities and Frontiers in ICT. He is co-editor of the Springer Book Series Gaming Media and Social Effects. Since 2015 he is also Global Research fellow at the Imagineering Institute, Iskandar, Malaysia, where he continues his investigations in playfulness and humor in interfaces and smart environments.

Email: a.nijholt@utwente.nl

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