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» Interfaces and Human Computer Interaction 2016
» Game and Entertainment Technologies 2016
» Computer Graphics, Visualization, Computer Vision and Image Processing 2016

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GAME AND ENTERTAINMENT
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FOREWORD

These proceedings contain the papers of the International Conferences on Interfaces and Human Computer Interaction 2016, Game and Entertainment Technologies 2016 and Computer Graphics, Visualization, Computer Vision and Image Processing 2016 which were organised by the International Association for Development of the Information Society, from 2 - 4 July, 2016. These conferences are part of the Multi Conference on Computer Science and Information Systems 2016, 1 - 4 July, which had a total of 606 submissions.

The Interfaces and Human Computer Interaction (IHCI) 2016 conference aims to address the main issues of concern within Interface Culture and Design with a particular emphasis on the affective aspects of design, development and implementation of interfaces and the generational implications for design of human and technology interaction. This conference aims to explore and discuss innovative studies of technology and its application in interfaces and welcomes research in progress, case studies, practical demonstrations and workshops in addition to the traditional submission categories.

This conference seeks to cover both technological as well as non-technological issues related to these developments.

Submissions were accepted under the following topics:
- Affective User-Centred Analysis, Design and Evaluation
- The Value of Affective Interfaces / Systems / Application / Interaction
- Generational Differences and Technology Design
- Measurement of Success of Emotional Technology / Interfaces
- Supporting User Populations from Specific Generations
- Supporting User Populations with Physical Disabilities
- Supporting User Populations with Intellectual Disabilities
- Creativity Support Systems
- Emotional Design Issues / Methods / Experiences for Novel Interfaces including Tangible, Mobile and Ubiquitous Computing, Mixed Reality Interfaces and Multi-Modal Interfaces
- Usability
- User Studies and Fieldwork
- Methodological Implications of Emotional User Studies
- Participatory design and Cooperative Design Techniques
- Ethical Issues in Emotional Design
- HCI and Design Education
- Eliciting User Requirements

The Game and Entertainment Technologies (GET) 2016 conference aims to bring together research and practice from creative, social and business practitioners and researchers in this challenging field. The focus of this conference is on design, development and evaluation of games, entertainment technologies and the nature of play.
Known to have been enjoyed since at least 30 BC, games and entertainment are a universal part of human experience and present in all cultures. Games and entertainment activities contribute to the social, emotional, psychological and physical well-being of human society. As game and entertainment technologies become increasingly more pervasive we are continually challenged in our work, learning and personal life by increased access to virtual spaces and communities that offer opportunities for everyday needs and aesthetic experiences. The ‘Creative Industries’ require design and development structures, techniques and methodologies that enrich, enhance and encourage new interaction modes, metaphors and in-depth co-creation.

Topics of interest include, but are not limited to the following areas:

- Development Methodologies
- Design Issues
- Controversial Issues – we welcome debate and dissension, for example; games as art, entertainment as purely for monetary returns etc
- Special Effects
- Animation
- Mobile and Ubiquitous Games and Entertainment
- Serious Games –Applications, Critiques
- Philosophical Issues
- Prototypes
- Social and Cultural Uses of/for Play
- Tools and Technologies
- Skills, Strategy, Rules and Chance
- Genre
- Immersiveness and Engagement
- Research methodologies in Creative Practice
- Usability and Playability
- User/Player Centered Design
- Psychological, Social, and Cultural Differences in Perception and Participation
- Communities, Networks, Social Interaction and Social Capital
- Cross-Cultural and Intercultural Approaches
- Assessment of Exploratory Learning Approaches
- Emerging Practices

The Computer Graphics, Visualization, Computer Vision and Image Processing (CGVCVIP) 2016 conference intends to address the research issues in the closely related areas of Computer Graphics, Visualization, Computer Vision and Image Processing. The conference encourages the interdisciplinary research and applications of these areas.

Submissions were accepted under the following 5 main topics:

- Computer Graphics
- Visualization
- Computer Vision
- Image Processing
- Other Related Topics
These events received 192 submissions from more than 30 countries. Each submission has been anonymously reviewed by an average of five independent reviewers, to ensure that accepted submissions were of a high standard. Consequently, only 29 full papers were approved which means an acceptance rate of 15%. A few more submissions were accepted as short papers, reflection paper, posters and doctoral paper. An extended version of the best papers will be published in the IADIS International Journal on Computer Science and Information Systems (ISSN: 1646-3692) and/or in the IADIS International Journal on WWW/Internet (ISSN: 1645-7641) and also in other selected journals, including journals from Inderscience.

Besides the presentation of full papers, short papers, reflection paper, posters and a doctoral consortium, the conferences also included two keynote presentations from internationally distinguished researchers. We would therefore like to express our gratitude to Professor Jan Gulliksen (KTH Royal Institute of Technology, Sweden) and Professor Alfred Inselberg (Senior Fellow San Diego, Supercomputing Center & Computer Science and Applied Mathematics Departments, Tel Aviv University, Israel) for accepting our invitation as keynote speakers.

This volume has taken shape as a result of the contributions from a number of individuals. We are grateful to all authors who have submitted their papers to enrich these conferences proceedings. We wish to thank all members of the organizing committee, delegates, invitees and guests whose contribution and involvement are crucial for the success of the conference.

Last but not the least, we hope that everybody has a good time in Madeira, and we invite all participants for the next edition of these conferences.

Katherine Blashki, Noroff University College, Norway
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KEYNOTE LECTURE

HUMAN COMPUTER INTERACTION AND SOCIETAL IMPACT – CAN HCI INFLUENCE PUBLIC POLICY MAKING AND IT POLITICS?

Professor Jan Gulliksen, KTH Royal Institute of Technology, Sweden

ABSTRACT

Research and research funding organizations are becoming more and more aware of the need to conduct research that proves some form of utility to the society and has some form of practical impact. There are several different ways of making research that has practical relevance and that can contribute to changing and improving society. This talk aims at discussing ways to plan, conduct research with the aim of improving the society and also show how we should make use of our research knowledge and positions to influence politics and public policy making.
Full Papers
WHEN DESIGNERS ARE NON-DESIGNERS: OPEN ENDEDNESS VS. STRUCTURE OF DESIGN TOOLS

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ABSTRACT

In this paper, we explore types of toolsets that are suitable for design thinking processes, when design teams consist of non-designers. We have conducted a series of workshops to experiment with open-ended, semi-structured and structured tools, using design thinking for libraries as a research case. Our results clearly indicate that semi-structured tools fare best regarding variety of outputs, breadth of ideas and engagement of participants.

KEYWORDS

Design thinking, team creativity, tools for design thinking.

1. INTRODUCTION

Design thinking (DT) provides a tremendous opportunity for designers and non-designers alike to create new and sustained creative and innovation-oriented practices. Design thinking has been advocated across many areas of business, e.g., (Brown, 2009; Lockwood, 2009; Martin, 2009) and has emerged as a desirable orientation towards innovation within many organizations. DT has been outlined as a co-design method in teams, often multidisciplinary and including users and other stakeholders. It has been framed as a process, both in the academic literature (Bjögvinsson et al., 2012; Cross, 2011, 1982; Schön, 1983) and in the commercial design practice (IDEO, 2014). While framing of the process as a design practice may differ among authors, it can be described as a sequence of actions related to problem definition (understanding of the problem space, users and their needs), ideation, prototyping, and evaluation. These practices that are based on DT processes are supported through use of diverse methods, tools and techniques, frequently including design ethnography, different forms of mapping (affinity, mind, concept), brainstorming, visual representations of ideas (sketching, storyboarding), prototyping and evaluation techniques (ranging from rapid idea evaluation, to prototype testing).

The design thinking approach to innovation has been in focus within several different academic fields, design (Buchanan, 1992; Cross, 2011), service design (Polaine et al., 2013; Stickdorn and Schneider, 2012), management (Johansson-Sköldberg et al., 2013; Lockwood, 2009) and interaction design and HCI (Culén and Fålsstad, 2015; Finken et al., 2014) among others. However, findings from these diverse fields, especially when it comes to multidisciplinary teams, their creativity and tools that should support it, are still not fully explored. In particular, little research is drawn from fields such as psychology or creativity studies that address team compositions and tools that support design-thinking practices in organizations. The importance of team composition and tools that the team works with grows when teams include non-professional designers or are even exclusively composed of non-designers.

In this paper, then, we focus on how to make tools that are suitable for DT processes when design teams consist of non-professional designers, supported by at least one researcher experienced in DT, and with at least one member with background in either design or art. As all authors are researchers engaged with design thinking and design thinking practices in the context of libraries, DT tool set design for libraries was chosen as a case for this paper. The paper describes reflections and lessons learned from three workshops that were conducted with four matched teams of participants. The teams included library employees, students in library