Ubiquitous Gaming Interaction Design Workshop

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Digital games are ingrained in the 21st century culture and lifestyle. Driven by some of the most advanced digital technologies, the increasing affordability of high quality game content on multiple personal devices means that it is more feasible to generate engaging gaming interactions for powerful player cognitive and affective responses. Such ubiquitous Human Computer Interaction paradigm presents unique challenges in games design and user interaction modelling. This workshop will focus on both technical and social aspects research topics, bringing together researchers in this cross-cutting area to discuss new approaches and issues related to the challenges. Novel applications of applied games (e.g. serious games) that demonstrate the use of ubiquitous gaming in health, education, and training are particularly welcome as part of the main theme of the workshop.

1. INTRODUCTION

Since the dawn of human civilization, playing games has been a vital part of human social and cultural establishment. Digital games technology has revolutionised the way of game play and extended gaming interactions beyond the boundary of physical environments. Games are now available on multiple personal devices with a wider support of advanced gaming technologies ranging from virtual reality headset (OculusRift (2016)) for creating a sense of complete immersion in a 3D world to wearable motion controllers for generating realistic user interactions with 3D virtual objects (LeapMotion (2016)). ‘Ubiquitous Games’ is defined by (Weiser (1991)) as the disappearance of computing into the background if everyday objects.

So the question is no longer should the gaming technologies be used in enhancing our lives, but rather, how it can be implemented to the our societal benefit. The two-way interaction between player and computer games is essential to understand both technical and social aspects of digital gaming, as such interaction is the primary form of technology used by individuals. It is agreed by research communities that digital games can engage players and motivate them to perform complex tasks with sustained interests. Therefore, how we interact within games and what gaming technology is the most appropriate in a defined context have a direct influence on applied games applications in learning, health and training (O’Rourke el al (2014)). Research on game design methodologies and gaming interaction is a relatively new emerging field, since little is known in how games can be implemented to achieve the intended effectiveness and outcomes.

We propose a Ubiquitous Gaming Interaction Design Workshop with the aim to bring together researchers
and professionals working in the areas of games development, HCI, ICT and wearable computing to discuss the fundamental question, e.g. how can ubiquitous games be developed in such a way so that any software or hardware used in gaming will enhance the quality of user experiences. The main objective of the workshop thus is to present new approaches and address challenges in game design and gaming interaction modelling with topics to be included but not limited to:

- Enhancing games with new game types and new design approaches
- Mobile gaming
- Location-based gaming
- MMO gaming (Massively Multiplayer Online games)
- Game design for novel gaming interfaces
- Player interaction modelling
- Digital game design theory and practice
- Applied games applications (education, health and training)

Ubiquitous gaming is an exciting new area of research. Papers to be presented in this workshop will show that games can be used as a domain to investigate questions related to HCI and ubiquitous computing in general as well as explore gaming in its own right.

2. WORKSHOP FORMAT

The workshop will be a one-day event comprising a mix of sessions of paper presentations (20 to 15 minutes per presentation), two invited keynotes, and a panel discussion session with gaming demonstrations. Intended keynote speakers are:

- Staffan Björk, Associate Professor of interaction design, Department of Applied IT, University of Gothenburg, Sweden.
- Kam Star, Funder of PlayGen, London, UK

2.1. Audience

The workshop will be of interest to researchers working in games design and development, user interaction modelling, HCI and mobile computing as well as practitioners working in digital industry related to games and ubiquitous computing. The workshop will be free for university students and staff who are not presenting at the event, increasing the dissemination of the research. The organisers of the workshop are members of academic staff in the Department of Creative Technology at Bournemouth University (BU). The department has one of the UK largest education programmes in Games Technology and Programming, and it is the home to Games and Music Technology Research Centre. Therefore, it is expected that the workshop will be attended also by academics and students from BU.

2.2. Resources

The department has the state of the art resources for digital games including the latest gaming device, Virtual Reality Headsets, and wearable motion controllers, Xbox and Play Stations, which can be provided for hosting digital gaming related events.

2.3. Publication Strategy

The workshop proceedings will be published in the BCS HCI conference workshop proceedings. However, selected high quality papers may be recommended for publications in appropriate journals. Intended journals are:

- Personal and Ubiquitous Computing, Springer.
- ACM Computers in Entertainment

3. CHAIRS

Chair: Dr Wen Tang is an Associate Professor of Games Technology in the Department of Creative Technology, Bournemouth University. Her research expertise is in 3D computer graphics and games technologies, specifically 3D physically based computer graphics algorithms and interactive techniques for digital games and virtual environments. To date, she has published over 70 peer reviewed journal and international conference papers, usually as first or senior author, some of which are in top journals and conferences (e.g. IEEE Transactions on Biomedical Engineering, The Visual Computing, ACM Virtual Reality Software Technology), 5 book chapters, 4 edited conference proceedings, and US patent. She has been invited times times been chair of EUROGRAPHICS UK Annual Conferences. Awards include Lee 400 Education Award (one of the two recipients) for the best PhD projects in Manchester in 1997, 4 best paper prizes in 2004, 2006, 2010 and 2014, and the first prize of in the Digital City Fellowship Showcase in 2007. She has been Principal Investigator for a total of close to £1 m funding from Innovate UK, EPSRC, and North East Regional Development Agency. Her research is both fundamental (e.g. 3D computational algorithms with real time performance), technical (e.g. 3D virtual reality system design and development) and applied (e.g. applications of games and virtual reality techniques in health, training and education).
Co-chair: Dr Christos Gatzidis is a Principal Academic of Games Technology in the Department of Creative Technology, Bournemouth University. He is the programme director responsible for the design development and operations of BSc Games Technology and BSc Games Programming courses. He is a Visiting Research Fellow at the School of Informatics, Department of Information Science, City University London, where he completed his PhD, titled “Evaluating Non-Photorealistic Rendering for 3D Urban Models in the Context of Mobile Navigation”. Furthermore, he has a Masters in Arts in Computer Animation from Teesside University and a BSc in Computer Studies (Visualisation) from the University of Derby. He has contributed to several refereed conference, book and journal publications and is also a member of the advisory board of the Bentham Open Virtual Reality, IGI Global International Game-Based Learning and IBIMA International Journal of Interactive Worlds journals. In addition to that, Recently awarded research grants include the EU-funded Leonardo Transfer of Innovation GameiT project (250,000 Euros across 7 partners) which focused on a pedagogy framework for game-based learning in educational settings.

Co-chair: Dr Feng Tian is an Associate Professor of Games Technology in the Department of Creative Technology, Bournemouth University. He has been researching in the areas of Computer Graphics, Computer Animation, NPR, etc. and has published over 80 papers in peer reviewed international journals and conferences. Prior to joining in Bournemouth University, he was an Assistant Professor in the School of Computer Engineering, Nanyang Technological University NTU, Singapore. As a visiting scholar, he has been visiting and collaborating with a number of universities, including Paris University XI, France, New South-Wales University, Australia, Tokyo Institute of Technology, Japan, etc. And in terms of teaching in BU, Dr Tian has led, developed and delivered all new materials for lecture, lab, assignments and exam, for a number of new units, including Games Programming, Games Engineering, Object Oriented Techniques, Games Design and Programming, etc. based on different game/graphics engines such as XNA, OpenGL and Unity3D.

REFERENCES


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Oculus Rift: Let your mind explore, 2016

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