2013 18th International Conference on Computer Games: AI, Animation, Mobile, Interactive Multimedia, Educational & Serious Games

(CGAMES 2013)

Louisville, Kentucky, USA
30 July – 1 August 2013

IEEE

IEEE Catalog Number: CFP1394P-POD
ISBN: 978-1-4799-0819-6

Contents

Programme Committee 6

International Programme Committee 7

Preface 8

Proceedings 9

Games Applications 10

Measuring the Effects of Social Networking Features on Player Motivation and Engagement 11
Lindsay F Wells, Ian J Lewis, and Kristy L de Salas

Do Achievement Systems Undermine Intrinsic Player Motivation? 19
Adam N Zulkifly, Ian J Lewis, and Kristy L de Salas

Identifying Types of Achievements 23
Kristy L de Salas and Ian J Lewis

Measuring the Steps: Generating Action Transitions Between Locomotion Behaviours 31
Christos Mousas, Paul F. Newbury, and Christos-Nikolaos

Teaching Graphics for Games using Microsoft XNA 36
Radu P Mihail, Judy Goldsmith, Nathan Jacobs, and Jerzy Jaromczyk

C# Interpreter and Unity 3D for Educational Programming Games 41
Paul Smith, Thomas P Hartley, and Qasim Mehdi

Computational Intelligence 48

Spyke3D: a new Computer Games oriented BDI Agent Framework 49
Luca Palazzo, Gianluca Dolcini, Paolo Sernani, Luca Ippoliti, Lorenzo Salladini, and Aldo F Dragoni

Applications of Games with a Purpose 54
Suhas Aggarwal

Monitoring of Patient Fluid Intake Using the Xbox Kinect 60
Robert Burgess, Tom Hartley, and Q Mehdi

Emerging Games Platforms, Technologies and Applications 65

Features of Achievement Systems 66
Ian J Lewis, Kristy L de Salas, and Lindsay F Wells

HyperNet Games: Leveraging SDN Networks to Improve Multiplayer Online Games 74
Shufeng Huang and James Griffioen

A study of gesture-based first person control **79**
Jeff Chastine, Nicole Kosoris, and Joshua Skelton

Examining the Effects of Avatar Customization and Narrative on Engagement and Learning in Video **87**
Raymond W Ng and Robb Lindgren

Games Development **91**

Immersion and Realism in Video Games - The Confused Moniker Video Game Engrossment **92**
Daniel K Wilcox-Netepczuk

Helios: An HTML5 Game Teaching Proportional Reasoning To Child Players **96**
Michael G Christel, Scott M Stevens, Arseniy Klishin, Sean Brice, Matt Champer, and Sam Collier

Bringing Auto Dynamic Difficulty to Commercial Games: A Reusable Design Pattern Based Approach **103**
Muhammad I Chowdhury and Michael J Katchabaw

Level of Detail Based Network Adapted Synchronization for Cloud Gaming **111**
Richard E Ewelle, Yannick Francillette, Ghulam Mahdi, Abdelkader Gouaïch, and Nadia Hocine

Learning Physics Through Computer Games **119**
Gary J Hookway, Qasim H Mehdi, Tom Hartley, and Nsikak Bassey

Asymmetric Game Design and Player Location: An Empirical Study on Mobile Play Experiences **127**
Jon A Preston, Yu Feng, and Joshua Skelton

Building Multi-User Virtual Worlds **132**
Joseph Defazio, Travis Faas, and Rebecca Finch

Games Simulation, Graphics and Visualisation **138**

Real-time Rendering of Burning Solid Objects in Video Games **139**
Dhanyu E Amarasinghe and Ian Parberry

Transfer Facial Expressions with Identical Topology **144**
Alice J. Lin and Fuhua Cheng

Sensor fusion for interactive real-scale modelling and simulation systems **149**
Mohammad Mirzae, Jean-Remy Chardonnet, Christian Pere, and Frederic Merienne

Real-time Rendering of Melting Objects in Video Games **154**
Dhanyu Amarasinghe and Ian Parberry

Game Asset Considerations for Facial Animation **159**
Boqian Liu and Timothy A Davis

A Hybrid Control Scheme for Facial Rigging **164**
Boqian Liu and Timothy A Davis

Serious Games 168

Helping children with Intellectual Disability to understand healthy eating Habits with an IPad based Serious Game 169
Alejandro Rodriguez, Asier Lopez, Amaia Mendez Zorrilla, and Begoña García Zapirain

Continuous Probability Modifier Functions and Risk Assessment 174
Catherine Cavagnaro and John Tiller

Switch- Side Chain-Chess 182
Azlan Iqbal

A Data-Driven Approach to Visualize the Effects of Rheumatoid Arthritis on Hands 188
Kaitlin A Burton, Frederick A Hallock, and Radu P Mihail

Atomic Zone: An Immersive Interactive Web Documentary Built with The Unity3D Game Engine 191
Nicholas Sciannameo, Rodrigo Cano, Noreen Durkin, Eric Hamel, Scott Stevens, and Michael Christel

Track and feel: The effects of user-generated content on engagement and Learning in video games 197
Yao Zhou and Robb Lindgren

Performance Metrics for Serious Games: Will The (Real) Expert Please Step Forward? 202
Christian S Loh and Yanyan Sheng

Autism Spectrum Disorder children interaction skills measurement using Computer Games 207
Nuria Aresti Bartolomé, Amaia Mendez Zorrilla and Begoña García Zapirain

Learning the Concepts of Java Inheritance in a Game 212
Jinghua Zhang, Elvira R. Caldwell, and Emanuel Smith

Experience Report: A Sustainable Serious Educational Game Capstone Project 217
C Shaun Longstreet and Kendra M L Cooper

Semi-automated Serious Educational Game Generation: A Component-based Game Engineering Approach 222
Ricardo Daconceicao, Carsten Locke, Kendra Cooper, and Shaun Longstreet

Work in Progress 228

A players clustering method to enhance the players' experience in multi-player games 229
Yannick S Francillette, Lylia Abrouk, and Abdelkader Gouaich

Author Index 235