

# Guest Editorial

## Selected Papers from the 14th Brazilian Symposium on Games and Digital Entertainment (SBGames 2015)

### I. INTRODUCTION

In 2002, as General Chair, I was pleased to hold in Fortaleza, Ceará, the 1st edition of the *Brazilian Symposium on Games and Digital Entertainment (SBGames)*. In the years that have followed, I have witnessed a growing symposium evolution, which currently is already on its way to the 16th edition. The *SBGames* is the most important annual Brazilian conference in the area of digital games and entertainment. It is composed of several tracks, among them, the *Computing Track*, which aims at publishing scientific papers about the advancement of the state-of-the-art in Computing applied to digital games.

Selected authors of best papers of the *SBGames 2015 Computing Track* were invited to submit extended versions of their papers for possible publication, after new rounds of reviews and revisions, at the *Journal on Interactive Systems (JIS)*. As a result, this *Special Issue of JIS* features four best papers, which were revised and expanded from the conference versions, and underwent a second round of reviews by members of the program committee and additional, outside expert reviewers.

### II. THE ARTICLES

The first paper, “*First Steps towards Live-action Virtual Reality Games*”, by Alexandre Silva, Esteban Clua, Luis Valente and Bruno Feijó, describes the main concepts of a new game genre (live-action virtual reality game) and presents a system based on infrared markers, which provides low optical noise and better precision, when compared to traditional solutions based on fiducial markers. The second paper, “*Proposing a Practical Approach to Extract and Read XML Meta-data from Sprite Sheets using Blob Detection Algorithm*”, by Marcelo Barbosa, Cecília Barbosa and André Barbosa, reports on an academic view of using feature detection techniques for developing a tool to generate sprite sheet information, which automatically produces meta-data from game sprite sheets. The third paper, “*Comparison of Acceleration Data Structures for High Quality Fast Reflections of Static and Deformable Models in Walkthrough Animations*”, by Daniel Macedo and Andréia Formico, presents a performance comparison of different NVidia OptiX acceleration data structures for generating high quality reflections of static and deformable models in walkthrough animations. Finally, the fourth paper, “*Dynamic Game Difficulty Balancing in Real Time*

*using Evolutionary Fuzzy Cognitive Maps with Automatic Calibration*”, by Lizeth Pérez, Luciano Calla, Anselmo Montenegro, Luis Valente and Esteban Clua, proposes a real-time solution for dynamically balancing game difficulty, by using Evolutionary Fuzzy Cognitive Maps.

We hope you enjoy the selection of papers in this special issue and that they encourage you to address computing issues on digital games in your own work.

### ACKNOWLEDGMENTS

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**Maria Andréia Formico Rodrigues** is a full professor at Universidade de Fortaleza (UNIFOR), Brazil. She holds a Ph.D. degree in Computer Science from Imperial College, UK. She was the General Chair and Program Co-chair for the 2002 and 2005 Brazilian Conference on Graphics, Patterns and Images (SIBGRAPI), respectively, and the Program Chair (Computing Track) of the 14th Brazilian Symposium on Computer Games and Digital Entertainment (SBGames 2015). She is a member of the editorial review board of the International Journal of Handheld Computing Research (IJHCR) and Associate Editor of the ACM Computers in Entertainment (CIE) Journal. Currently, besides Guest Editor of this JIS Special Issue, she is also Guest Editor of a Special Issue of the Elsevier Entertainment Computing journal, Co-Chair of the Workshop on Augmented Reality, Virtual Reality and Wearable Technologies of the 5th IEEE Serious Games and Applications for Health (SEGAH), and Member of the Special Committee of Games and Entertainment (CE-JOGOS) of the SBC. Her research interests are in interactive computer graphics, virtual reality, and games.



**Esteban Walter Gonzales Clua** is professor at Universidade Federal Fluminense, coordinator of UFF Medialab and vice-director of the Computer Science Institute, Young Scientist of the State of Rio in 2009 and 2013. He is graduated in Computer Science by Universidade de São Paulo and has master and doctor degree by PUC-Rio. His main research and development area are Digital Games, Virtual Reality, GPUs and Visualization. He is one of the founders of SBGames (Brazilian Symposium of Games and Digital Entertainment) and was the president of Game Committee of the SBC from 2010 through 2014. Currently, he is the commission member for Brazil at the Technical Committee of

Entertainment at the International Federation of Information Processing (IFIP) and honorable member of the board council of ABRAGAMES. In 2015 he was nominated as NVidia Fellow. In 2007 he received the prize from ABRAGAMES as the main contributor from the academia for the development of the game industry at Brazil. He is the coordinator of the NVIDIA Center of Excellence, that is located at the CS Institute of UFF. Esteban belongs to the council of innovation of the Culture Secretary of the State of Rio, is member of the permanent commission of Rio Criativo, Member of the permanent board of innovation and technology at the Legislative board of Rio and member of the Innovation Agency at UFF.