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Entertainment Computing and Serious Games

International GI-Dagstuhl Seminar 15283
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Revised Selected Papers

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Preface

According to the CEO of Activision Blizzard Inc., their computer game “Destiny,” which was published in 2014, had a budget of U.S. \$500 million. In comparison, even blockbuster movies from the same year such as “The Hobbit” are estimated to have had only half of this budget. Analysts assume that the global game market was worth more than U.S. \$90 billion in 2015 with a growth rate exceeding 9 % compared with 2014. Digital games are at the core of a booming market that attracts more than a billion players. However, digital games are rich not only in financial opportunities but also in research questions. The relevance of these research questions increases as computer games affect the lives of more and more people and as their societal and economic significance grows rapidly.

The range of research questions can be broadened when not only computer games that aim to entertain players are the subject of scientific research but computer games that pursue additional goals, for example, educating the players about economic effects. Here, even more scientific disciplines are concerned. In the case of an educational game, for example, research questions may lie in the disciplines of pedagogics and didactics as well as the discipline that deals with the game’s subject (e.g., business sciences). For this type of game, the term “serious game” has been coined. While all educational games are serious games, the goals that can be pursued with serious games are more than education. For instance, health games can aim at increasing the fitness of the player. Serious games can be used for advertising, for behavior change, or for medical treatment. Additional disciplines such as sport sciences, marketing, psychology, or medicine become involved in research questions that relate to serious games.

Not surprisingly, many research questions cannot be addressed in isolation but an interdisciplinary approach or at least some basic understanding of the interdisciplinary context of serious games and entertainment computing is essential. Moreover, the whole field is quite unstructured and there are many different scientific communities that conduct research from their own perspective. In general, this is an obstacle for scientific advancements. In particular, this makes it difficult for young researchers who want to start a PhD with a research question related to serious games and entertainment computing. Even their supervisors may be faced with difficulties as this area of research is quite new.

The aim of this book is to collect and to cluster research areas in the field of serious games and entertainment computing – and to provide an introduction as well as a state-of-the-art analysis. This is meant to serve as a starting point for people who want to start research in this area. At the same time, it can be seen as a contribution toward establishing and structuring research in this exciting field. As this is a comparatively young field, the underlying idea of this book was to select authors who are young researchers in the area, still working on their PhD thesis or having just finished it. They were provided with the task of conceiving and writing a book that will introduce and guide the next generation of researchers. The book should provide their successors

with a better basis for research, easing their way to tackle new research questions. As a starting point, the perspective of computer science on serious games and entertainment computing was chosen.

With the support of the German Society for Computer Science (GI) and the Leibniz Center for Computer Science, Dagstuhl Castle, a renowned international meeting place for computer science research, was made available for a seminar where all prospective authors could meet and discuss the book for a whole week. A call for participation was internationally distributed in 2014 for this seminar and the associated book project. The resonance was overwhelming. As the number of seminar spaces was limited, it was necessary to conduct a highly competitive selection process. As a result, 25 young researchers from universities and research institutes from 12 countries worldwide were invited. During July 5–10, 2015, these 25 young researchers, and the three organizers of the GI-Dagstuhl seminar supported by two senior researchers, worked (and played) together at Dagstuhl Castle in Germany. The GI-Dagstuhl seminar “Entertainment Computing and Serious Games” proved to be very lively and all participants were enthusiastic to present and discuss research questions, to select suitable content for the envisioned book, and to conceive its structure. After the seminar, the participants worked in virtual teams to flesh out and finalize each chapter of this book according to the structure and the work plan that was drawn up at the end of the seminar.

This book is the result of this process. The authors of the book are mainly the young researchers who participated in the GI-Dagstuhl seminar. The organizers (Ralf Dörner, Stefan Göbel, and Katharina Zweig) and the senior researchers (Michael Kickmeier-Rust and Maic Masuch) served as editors. The book is more than the proceedings of this GI-Dagstuhl seminar. It represents the fruits of the labor of all the participants who invested in the extensive preparation of the seminar, the intensive week at Dagstuhl Castle, and particularly the months of hard work after the seminar. The young researchers who participated are Mohamed Abbadi, Nataliya Bogacheva, Eelco Braad, Paolo Burelli, Rahul Dey, Katharina Emmerich, Benjamin Guthier, Susanne Haake, Antonia Kampa, Johannes Konert, Hector Martinez, Bernhard Maurer, Betty Mohler, Leif Oppermann, Alyea Sandovar, Michaela Slussareff, Jan Smeddinck, Heinrich Söbke, Björn Straat, Alexander Streicher, Henrik Warpefelt, Viktor Wendel, Philip Wilkinson, Diana Xu, and Gregor Zavcer.

We as editors would like to thank the GI, the Leibniz Center for Computer Science, the staff at Dagstuhl Castle, as well as our universities for the support of this book project. Moreover, we would like to thank Springer for their support in publishing this book. And, of course, special thanks go to the 25 passionate young participants – without them this book would not exist.

August 2016

Ralf Dörner
Stefan Göbel
Michael Kickmeier-Rust
Maic Masuch
Katharina Zweig

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