Research in Multi-Agent Systems offers promising technologies to implement non-playing characters embodying more realistic cognitive models. However, the technologies used in today’s game engines and multi-agent platforms are not readily compatible due to some differences in their major concerns. For example, where game engines focus on real-time aspects that prioritize efficiency and central control, multi-agent platforms privilege agent autonomy instead. And while multi-agent platforms typically offer sophisticated communication capabilities, these may not be usable, or even appropriate, when the agents are coupled to a game. So, although increased autonomy and intelligence may offer benefits for a more compelling game play, and may even be essential for serious games, it is not clear whether current multi-agent platforms offer the means that are needed to accomplish this. Indeed, when current approaches to game design are used to incorporate state-of-the-art Multi-Agent System technology, the autonomy and intelligence of the agents might even be seen as more of a hindrance than an asset. A very similar argument can be given for approaches centered around agent-based (social) simulations.

In the current volume, Agents for Games and Simulations, we include papers presented at AGS 2010: the Second International workshop on Agents for Games and Simulations held on May 10 in Toronto. We received 12 submissions of high quality covering many of the aspects mentioned above. Each submission was reviewed by at least three Program Committee members. We accepted 11 papers for presentation, which can be found in this volume. This set of papers is complemented by some extended versions of papers from other workshops and the AAMAS conference in Toronto. Together this collection of papers give some answers to the issues raised above.

We have grouped the papers into three sections. The first section contains papers that are related to architectures combining agents and game engines. Besides new results from the Pogamut platform itself, there is also a paper discussing the integration of GOAL agents to Unreal Engine with the use of the Pogamut framework. It is nice to see this result stemming from last year’s AGS workshop. Another paper in this section compares different multi-agent-based systems for crowd simulation. Indeed this is an important topic for many (serious) games incorporating disasters in public spaces where crowds are involved. The other two papers in this section treat issues with individual agent behavior in games. One looks at the combination of human and AI control of virtual characters, such that humans take care of those aspects that they are good at and the AI controls the parts that humans are less good at. This is an interesting point of view that might lead to new types of agent architectures as well. The last paper advocates the use of ontologies during the design of the game environment such that agents can use the ontology in their communication.
prevents, for example, one agent referring to an object as being a table while another agent calls the object a desk. Avoiding this possible confusion makes it possible to model the communication at a more abstract level, providing more flexible protocols.

In the second section of this volume we included papers that focus on the training aspects of the games. Three of the papers discuss the directing of the game. The first paper uses value-driven characters. The second paper uses some implicit mechanisms in the game and the third paper discusses a planning approach. The last paper in this section is also about keeping the game interesting, but it uses an on-line adaptation mechanism to keep the game interesting for the trainee. All of these papers show that the objective of agents in a gaming environment should not just be to optimize some behavior, but rather to behave in a way that the game is as interesting as possible for the user. Therefore we should keep track of some overall storyline and objectives of the game as a whole.

The last section groups some papers around social and organizational aspects of games and agents. Two of the papers discuss certain approaches from agent institutions and organizations to model and implement the agent-based games. Using these approaches gives agents a degree of individual freedom but also keeps some central control over the game. The third paper discusses formal approaches to model social practices which can be used in gaming. Finally, one paper discusses the semi-automated classification of speech acts in a game. This type of data-mining technique can assist in modeling interesting behavior of agents based on the behavior of human players in a game.

All in all we are very happy with the papers contained in this volume. We are sure they form a valuable overview of the current state of the art for people that want to combine agent technology with (serious) games. Finally, we would like to thank the Program Committee members, without whom the reviewing would not have been possible and who gave valuable comments on all papers.

November 2010

Frank Dignum
Conference Organization

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