



## Game research for training and entertainment

### The GATE Project

It is always difficult to predict the future. But it is clear that the possibilities of gaming will rapidly increase over the coming years. New graphics and physics cards allow for increased visual realism but this must be accompanied by increased behavioral realism of game characters. New interface technology will enable a different, more natural form of communication and control. Gesture recognition, tactile feedback and direct brain connections will become possible. And new insight in learning processes in virtual worlds will improve the effectiveness of serious games.

To advance the state-of-the-art in gaming and to facilitate knowledge transfer to companies, the Dutch government has funded the GATE project with a total budget of 19 million Euro. The project runs from 2007 till 2012 and involves seven partners: Utrecht University, Utrecht School of the Arts, TNO, Twente University, Delft University of Technology, Waag Society, and Thales.

### Ambition

The ambition of the GATE project is to develop an international competitive knowledge base with respect to game technology and to train the talent required to enhance the productivity and competitive edge of small and medium-sized creative companies. The project will assist companies producing (tools for) games and simulations by providing direct access to new technology. The project will make people aware of the possibilities of gaming in public sectors such as education, health and safety by performing pilots in these areas.



**Remco Veltkamp**  
Utrecht University  
Director GATE

### Research Program

The research program has the following four themes:

**Modeling the Virtual World** focuses on techniques for semi-automatically creating convincing and engaging virtual worlds that can be used in games. The rationale behind this research is that the creation of virtual worlds has become one of the most costly parts of the construction of games.

**Virtual Characters** deals with the creation of realistic behavior for the virtual characters that inhabit the games. These can be avatar representations of the users or computer-controlled characters. Such realistic behavior is important to increase the immersion of players in the game world.

**Interacting with the World** studies novel interaction techniques that will improve the way users can control their games. For example, we study gesture recognition and brain-machine interfaces.

In **Learning with Simulated Worlds** we study how games and virtual worlds can best be used for training and education. This will improve the quality and effectiveness of such serious games in the future.

### Contact

We are very interested in collaboration with others. For more information about the GATE project, please see the GATE website at <http://gate.gameresearch.nl> or contact the scientific director Remco Veltkamp ([Remco.Veltkamp@cs.uu.nl](mailto:Remco.Veltkamp@cs.uu.nl)).

### Innovative Pilots

Within GATE a number of innovative pilot projects are carried out. The goal of these pilots is to create awareness of the potential of gaming and simulation in the sectors education, health care, and safety. In developing these prototypes we have established collaboration between game designers, creative artists, educational specialists, ICT experts, and domain experts. For example, we developed prototypes for a game for physics education, for non-verbal communications between patients and relatives, and for training mayors to deal with disasters.

### Knowledge Transfer Projects

GATE is not only about academic research into games and game-technology. GATE is also geared towards developing this knowledge further into practical solutions. The mechanism to make that happen is through knowledge transfer projects in which small and medium size enterprises collaborate with research partners. Companies provide knowledge questions and intended applications. The research partners provide new technology. The projects combine these into practical solutions that make the research results fit-for-use for industry. In fifteen projects, the research results are assimilated into R&D efforts, to help these companies gaining a technical leading edge.

