



Game research  
for training and  
entertainment

### The GATE Project

To develop the next generation of computer games, research is required in many different areas. For example, we need to develop methods for semi-automatically creating huge virtual worlds, we need animation techniques that rely less on large databases of motion capture data, we need better artificial intelligence and path planning for our virtual characters, we need new, effective interaction techniques based on e.g. speech and gestures, and we need a better understanding of the players to automatically adapt games to their abilities and interests.

To give the Netherlands a leading edge in this area, the government has funded the GATE project. GATE stands for Game Research for Training and Entertainment. Research in GATE is directed both towards entertainment games and towards serious games. The project started in 2007 and will run until 2012; with a total budget of 19 million Euro. The partners that execute the project are Utrecht University, TNO, Utrecht School of the Arts, Twente University, Delft University of Technology, Waag Society, and Thales.

The GATE project consists of three action lines. In the first line, research is performed to develop new game technology. In the second line, three innovative pilots are developed that apply gaming concepts in the public domains education, healthcare, and safety. And in the third line, knowledge transfer projects are defined, in collaboration with companies, to make the research results directly accessible to industry.

Because the ultimate goal of the GATE project is to provide the game industry with the game technology of the future, in this and the coming issues of Control we will inform you about the various results obtained in the project and the activities we organize. We hope that in this way we will spark your interest in our work which might lead to future collaboration. More information about the GATE project can be found on the website [www.gameresearch.nl](http://www.gameresearch.nl), or you can contact the project manager, Piet Buitendijk ([pietb@cs.uu.nl](mailto:pietb@cs.uu.nl)).



**Mark Overmars**  
Utrecht University  
Director GATE

### Research Meets Business

On Wednesday afternoon, February 10, the GATE project organizes, in collaboration with the DGA, the meeting Research Meets Business. The goal of this meeting is match-making between the researchers in the GATE project and developers in the Dutch game industry, to stimulate future collaboration. The GATE project has a budget of one million Euro for such new knowledge transfer projects. During the meeting research results from the GATE project will be presented. Also some developers from game companies will share their views on the most important technical challenges for the future. During a long poster session with drinks, people can discuss the results and collaboration opportunities. The meeting is held in Utrecht from 13.30-17.00 hours. For more information and (free) registration see <http://gate.gameresearch.nl/index.php?pageID=110>. The number of attendees is limited so please register early. The meeting is only meant for developers in Dutch game companies and related industries.

### GATE Advisory Board

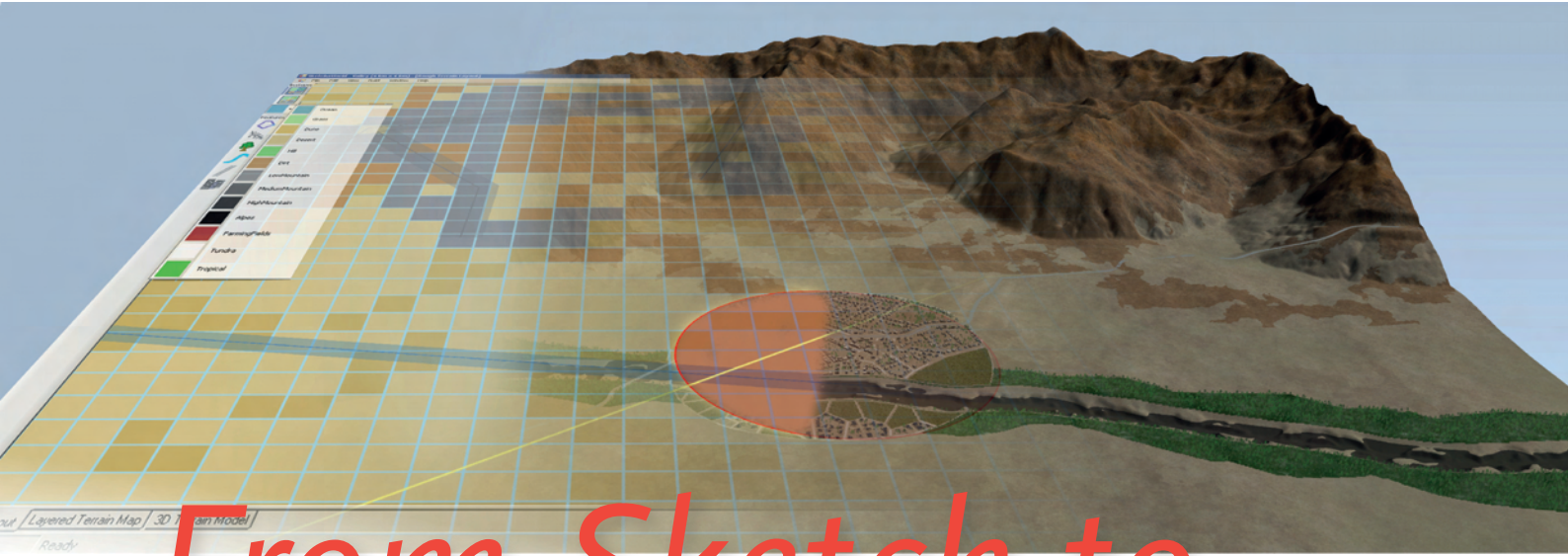
The GATE project has installed an advisory board that will monitor the progress of the project and advise the management team about desired changes and opportunities. In particular the board will suggest potential knowledge transfer activities and will make suggestions about the continuation of the GATE project after 2012. The board consists of the following people:

- Michael Bas (RANJ)
- Arjan Brussee (Guerrilla Games)
- Frank van Oirschot (Dutch Games Association)
- Gerard van Oortmerssen (ICTRegie)
- Martin de Ronde (One Big Game)
- Pjotr van Schothorst (VStep)
- Jan-Pieter van Seventer (Dutch Game Garden)
- Rogier Smit (Playlogic)

Of course, if you have suggestions for the GATE project yourself, you are very welcome to contact the project manager Piet Buitendijk ([pietb@cs.uu.nl](mailto:pietb@cs.uu.nl)).

**GATE.GAMERESARCH.NL**

# Creating a world the easy way



## From Sketch to Game World

RESEARCH IN  
PROGRESS  
PART 1

What if a simple sketch is enough to create a functional and coherent Game World?

**T**he magnificent ancient cities in Assassin's Creed, the lush tropical islands in Crysis: they both started off with a designer sketching his vision of the game world. What usually follows is months of modeling, texturing and fine-tuning every little detail of the game world manually. What if we can save some of the effort, what if a sketch of a game world is enough to create it automatically?

Automatic creation of content for games has been possible for years; still it hasn't really caught on yet. This is mainly because current tools are often limited to creating a specific terrain feature. They are typically difficult to use, and hard to steer towards a desired result. Furthermore, the tools are not easily integrated into the existing game world design process.

### SketchaWorld

Ruben Smelik, PhD student of the GATE project, is developing a new modeling tool, called SketchaWorld, to overcome these issues. It provides automated game world creation using a digital sketch as input. This sketch is easy to create, similar to drawing a rough map of the game world in a paint program. You paint areas that contain mountains, hills, desert, etc. On top of this, you draw rivers and roads using simple straight lines, and place forest and cities.

While you're working on your sketch, SketchaWorld creates the game world for you. Each element in your sketch is automatically expanded to a realistic terrain feature. The features are placed in logical terrain layers (comparable to Photoshop layers) and fit with their surroundings. For instance, the problem of a road crossing a river is solved by automatically

placing an appropriate bridge over the river. The resulting game world can be exported for use in different applications.

### Explore alternative ideas

It is very unlikely that such an automated tool will ever fully replace modeling by hand. Creativity and the artistic vision of a game designer are hard to encode in content generation procedures. However, it will prove valuable by allowing you to quickly obtain a functional and coherent game world, which you can further tune and enrich using traditional manual methods. Furthermore, the tool allows you to inexpensively explore alternative ideas you might have for a game world. Today's version of SketchaWorld already provides game world generation from sketch to 3D model. Further research will focus on generating more diverse and detailed environments, improving interactivity

and seamlessly mixing manual editing with automated generation procedures. In cooperation with the Dutch industry, this tool could become a new and very efficient way to create game worlds.

Ruben Smelik is a PhD candidate on the GATE project "Automatic Creation of Imaginary Worlds", working at TNO Defence, Security and Safety in The Hague, and closely cooperating with Delft University of Technology. Ruben holds a master's degree in Computer Science from the University of Twente. He can be reached at [ruben.smelik@tno.nl](mailto:ruben.smelik@tno.nl)

