Internships at VSTEP BV

Background VSTEP

VSTEP (www.vstep.nl) is one of the pioneering companies in the area of Serius Games, training applications on the basis of PC game technology. Starting back in 1997 with Quake mods for oil rigs, the company now has 18 people, developing games and trainings using Quest3D (www.quest3d.com) and C++.

Background Ship Simulator 2006

One of VSTEP's more recent products is a PC game called *Ship Simulator 2006* (www.shipsim.com), in store in many countries since June 2006. The interest in this game is overwhelming, so VSTEP started already on a sequel, target for release Q2 2007. Even for the 2008 version, the foundation is laid now.

Graduation projects and internships

With the assistance of trainees and graduate students, we want to do the following R&D:

1. Realistic rendering of **surf**. Waves in general are already under development, but the option to sail through breaking waves and surf is targeted for 2008. It will allow us to create rescue operations from the beach, and grounding ships in heavy seas in sand banks.

2. Realistic dynamics and 3D rendering of **sailing** vessels, like modern yachts and historic Tall Ships. The 2006 and 2007 versions of the game are aimed at motorised ships, but sailing is on the wish list for 2008.

3. Improved model for ship movements under various propulsion systems, like pods (turning propellers), azimuth thrusters, and jets. The steering and collision behaviour must be implemented under various conditions, like manoeuvring in tight spots, grounding on sand banks, slamming into waves, crashing into other ships. Target is to make this model sufficiently simple that new ship models can be imported into the game in an easy way, and let people tweak the dynamics with just a few parameters.

4. The effect of current has to be integrated in the 2008 version. The vector fields that occur at different tides in a given harbour needs to be calculated on a fluid flow model, or entered by hand. After that, the effect of the current on the ship's manoeuvring characteristics needs to be implemented.

5. A damage model of ships after collisions. The first thing many game users do after starting the game is crash into other ships, and then being surprised that there is no visible damage…. We are now working on a simple damage model based on textures, but the target is to create a mesh deformation system for collision damage for the 2008 version (or sooner if possible).

Profile students

We are looking for students on BSc and MSc level from the following studies:

(Applied) Physics, Computer Science, Applied Mathematics, Marine Technology, Offshore Engineering, Game Design & Development

These graduation/internship projects will comprise of a literature survey, design, and implementation. The latter usually happens with Quest3D, an authoring tool for real-time 3D productions (www.quest3d.com) and C++.

Apart from a willingness to (learn to) work with Quest3D, teamwork is also important. All VSTEP's productions were realised in teams. De location is in our office in Rotterdam, The Netherlands.

Are you interested? Please send your resume and portfolio to Pjotr van Schothorst, pjotr@vstep.nl .