Special issue on CGS 2001

It is my pleasure to introduce this special issue, which contains a selection of the papers that were presented at the three conferences held under the auspices of the Computer Graphics Society, (http://cgswww.miralab.unige.ch/). Each of these three conferences is illustrated with a selection of two papers. The selected papers have been extended and updated in order to reflect the current status of the research described.

The three CGS annual conferences are:

1. The Computer Animation Conference (CA2001), held in November 2001 in the Seoul National University, Seoul, Korea.
2. The Computer Graphics International Conference (CGI2001), held in July 2001 at the City University of Hong-Kong, Hong-Kong.
3. The MultiMedia Modeling Conference (MMM2001), held in November 2001, in the Dutch National Center for Mathematics and Computer Science, Amsterdam, The Netherlands.

In the first paper of the Computer Animation 2001 selection, J. Jansson from Uppsala University, Sweden and J.S.M. Vergeest from Delft University of Technology, The Netherlands, propose a unique physical representation for modeling and simulating interactions between rigid and deformable bodies. Their mass-spring representation avoids explicitly handling the interactions between different bodies and therefore allows modeling hybrid rigid/deformable bodies. In the next paper, G. Hirota, S. Fischer and A. State from the University of North Carolina at Chapel Hill, USA, propose a penalty method based on "material depths" for improving finite element simulation of mechanical contact between nonlinearly elastic objects. To demonstrate the potential of their approach, they present the simulation of the flexion of the knee with an anatomical model built from the Visible Human Male dataset.

The second section of papers is related to the Computer Graphics International 2001 conference. In the first paper K. Kähler, J. Haber and H.-P. Seidel from the Max-Planck-Institut für Informatik, Saarbrücken, Germany, propose a method for enhancing the visual appearance of real-time deforming irregular triangular meshes by dynamically applying local refinements. They illustrate the efficiency of the proposed refinement strategy by integrating it in a physics-based facial animation system. The following paper, by E. Wu from the University of Macao, China and X. Zheng from the Chinese Academy of Sciences, Beijing, China, proposes an inverse warping algorithm for generating novel views from multiple reference images taken from different viewpoints for image-based virtual environments. The use of the "epipolar line" concept in the inverse mapping process enables the authors to optimize the computation so that the navigation in the virtual environment can be performed at interactive rate.

The two last papers are selected from the MultiMedia Modeling 2001 conference program. J. Wang and T.-S. Chua from the National University of Singapore, Singapore, describe a framework for a video retrieval system based on the content continuity concept and on cinematic rules used in cinematography by movie directors for combining video scenes together. This approach allows extracting scenes boundaries from movie video sequences to provide intuitive user access. In the second paper of the MMM2001 section, C.-C. Chang and I.-C. Lin from the National Chung Chang University, Taiwan, China and T.K. Shih from Tamkang University, Taiwan, China, introduce a prediction method for progressive image transmission. The proposed "guessing by neighbors" strategy is based on the continuity of image pixels.

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