

Editorial

Special Issue of Pacific Graphics '95

For this special issue dedicated to selected papers from Pacific Graphics '95, we are pleased to welcome as guest editors the Chairs of the conference: Professor Sung Yong Shin from Korea Advanced Institute of Technology, Professor Toshiyasu L. Kunii, President of the University of Aizu, and Professor Myung-Soo Kim from Postech.

NADIA MAGNENAT THALMANN
DANIEL THALMANN

Pacific Graphics '95, the third international conference on Computer Graphics and its Applications, was held on 21-24 August 1995, in Seoul, Korea. Following on the success of the two previous conferences: Pacific Graphics '93 (Seoul, Korea) and Pacific Graphics '94 (Beijing, China), we received 62 submissions from 22 different countries all over the world and, after peer review, selected 24 papers for publication in the conference proceedings: *Computer Graphics and Applications*, published by World-Scientific, Singapore. (The proceedings also include 10 invited papers.) The four papers presented in this special issue were judged by the programme committee members to be the best of the 24 selected papers presented at the conference. Each of the four papers was further reviewed by experts in the respective research area and the papers were further improved on the basis of comments received.

The first paper, by Kim and Elber, presents a symbolic approach to generate blending surfaces between two polynomial and/or rational surfaces. Using a purely symbolic technique, the authors demonstrate how to compute various cross boundary tangent vector fields on each rail curve and represent the blending surfaces as polynomial or rational surfaces.

The next paper, by Sun, Wang and Chin, presents a 3D morphing algorithm which transforms one polyhedral model into another. Considering each polyhedron as a graph representing vertex adjacencies, the authors develop a simple and elegant method which generalizes the 2D polygonal morphing algorithms of Sederberg to a 3D polyhedral morphing algorithm.

The third paper, by Lee and Shin, presents an efficient ray casting algorithm for terrain rendering from DTMs (digital terrain models). The authors introduce a formal analysis to vertical ray coherence. Based on this analysis, they propose a new technique which covers the entire image plane with non-parallel ray lines. This

technique is quite general and accurate in the sense that it can deal with arbitrary roll angles.

The last paper, by Dobashi, Nishita, Naneda and Yamashita, presents an efficient rendering algorithm for generating background sky colour. The authors precalculate the sky colour distributions at certain discrete altitudes of the sun, and store them efficiently using cosine basis functions. Given an arbitrary altitude of the sun and a viewing direction of the virtual camera, the sky colour can be generated efficiently, while using the stored distributions.

SUNG YONG SHIN
TOSIYASU L. KUNII
MYUNG-SOO KIM