

**Deok-Soo Kim**  
**In-Kwon Lee**  
**Dani Lischinski**  
**Ayellet Tal**

## Guest Editorial

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e-mail: visualcomputer@miralab.unige.ch

This special issue contains five papers selected from the Fifth Israel-Korea Bi-National Conference on Geometric Modeling and Computer Graphics, which was held at Seoul National University, Korea, from 11–12 October 2004. This is the fifth in a series of conferences whose aim is to bring together Israeli and Korean researchers and practitioners to exchange their recent research ideas and results. The previous conferences in the series were held in Israel (1998 and 2003) and in Korea (1999 and 2001), and significantly contributed to the increasing research collaborations between the two countries. This successful tradition was continued in this fifth bi-national conference as well. A total of 23 interesting talks were given, covering a variety of topics such as digital geometry processing, collision detection, shape retrieval, rendering, haptic interfaces, visibility, and simulation. These presentations stimulated many valuable discussions among the conference participants.

After the conference the program co-chairs selected five of the presented original papers (based on their reviews and presentation at the conference), and invited the authors to submit an extended version of their paper for this special issue. Each of these selected papers went through another round of peer review to ensure that they complied with *The Visual Computer's* acceptance criteria. The resulting collection of papers in this special issue represents the diverse topics discussed at the conference and deal with cloth simulation, collision detection, haptic interaction, mesh analysis, and projective geometry.

The first paper by Oh, Ahn, and Wohn presents a new implicit integration method for low-damped yet stable real-time cloth simulations. This is achieved via a new linearization scheme that introduces artificial internal damping forces only with respect to pure internal deformations, without affecting rotational rigid motions.

The second paper, by Choi, Kim, and Kim, presents a new efficient self-collision detection algorithm for polygonal deformable objects, which takes advantage of the parallel SIMD capabilities of today's programmable graphics processing units (GPU).

The third paper, by Kim and Park, describes a virtual dental simulation system that employs haptic interaction and volume modeling techniques. This system introduces a new technique for collision detection and force computation, and addresses several other limitations of previous dental simulation systems.

The fourth paper, by Shamir, Shapira, Cohen-Or, and Goldenthal, explores a new method for analyzing feature spaces associated with a given surface. The new method is based on the mean-shift operator, which recently gained considerable popularity in the image processing community. This paper overcomes several difficulties that arise when attempting to apply the mean-shift operator on general meshes that do not possess the regular and uniform sampling nature of an image.

The fifth and last paper, by Seong, Kim, Kim, and Elber, presents an efficient and robust algorithm for computing the perspective silhouette of a general swept volume, as well as the topology of the silhouette's connected components.

Without the efforts of the committee members of the conference, this special issue would not have been possible. The guest editors would like to thank all of the committee members, all contributors to the conference and to this special issue, and the external reviewers of the selected papers.