

Preface

Special issue: Shape Modeling International 2004

This special issue collects the revised and extended versions of four of the best papers presented at the sixth International Conference on Shape Modeling and Applications 2004 in Genoa, Italy, June 7–9, 2004.

The SMI conference was initiated at the University of Aizu (Aizu-Wakamatsu, Japan) as a bi-annual event by Professor Toshiyasu Kunii in 1997. It was conceived as an international forum for the exchange of research and applications related to all aspects dealing with modeling, representing, processing, and retrieving of digital shapes and associated properties from a rather multidisciplinary perspective. Since 2001 the conference has been an annual event with the venue changing circularly from Asia to Europe and to America. It also included the Eurographics/ACM SIGGRAPH Workshop on Implicit Surfaces as a specific session.

In the 2004, the conference for the first time was scheduled within the International Convention on Shapes and Solids 2004, with the aim of bringing together the two major international events in the modeling area: Shape Modeling International and

the ACM Symposium on Solid Modeling and Applications. The conference was organized by the Institute of Applied Mathematics and Information Technologies, Department of Genoa, of the Italian National Research Council (CNR) in cooperation with ACM SIGGRAPH, the Eurographics, and the Computer Graphics Society.

This special issue contains papers dealing with the following areas of shape modeling: interactive free-form surface deformations using the sweeping paradigm; various aspects of implicit surface modeling including reconstruction from a cloud of points (with additionally assigned scalar attributes) using radial basis functions and partition of unity; and combining implicit surfaces with polygonal meshes and discrete point sets into a single hybrid shape model.

Franca Giannini
Alexander Pasko
SMI 2004 program co-chairs

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